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The Institutionalisation of Integrated Reporting: An Exploration of Adoption, Sustainability Embeddedness and Decoupling

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Abstract

The thesis conveys three discrete, yet interconnected, studies embracing issues revolving around the exploration of integrated reporting adoption and embeddedness using an institutional theory lens. Integrated reporting can be described as 'a holistic and integrated representation of the company's performance in terms of both its finance and its sustainability' (King III, 2009, p. 54).

The first study explores the mimetic, normative and regulative institutional factors, at both an organisational field (meso) and country (macro) levels, affecting the adoption of integrated reporting. Moreover, it provides a portrayal for the adoption of the new practice among corporations. The study uses a relatively large sample driven from the Global Reporting Initiative (GRI) report list and tests it empirically using panel data from 2002-2010. The second study develops a measure to capture sustainability embeddedness in corporate reports and uses the measure to explore and describe sustainability embeddedness in the integrated reports. Additionally, indicators on sustainability embeddedness in the de facto GRI guidelines are highlighted in comparison to the measure developed. Finally, the third study explores the determinants of sustainability embeddedness in integrated reports using a decoupling lens. More specifically, the study examines the effects of integrated reporting age (as a proxy for early and late adoption), the level of reporting of GRI sustainability guidelines (GRI application level), report assurance and corporate governance on sustainability embeddedness in integrated reports.

The study finds that the application of integrated reporting emerged in 2001 amongst only a few corporations in Europe and South America, and was spread among all continents by 2010. While mimetic and normative factors at a meso level were significantly related to integrated reporting adoption, regulative and normative factors at a macro level were found to be of limited association with integrated reporting adoption. Interestingly, corporate size, a firm characteristic control variable, was found to be negatively associated with IR adoption. Exploring sustainability embeddedness in integrated reports in the second study reveals that on average integrated reporters covered 54.4% of the indicators on sustainability embeddedness on the constructed index. Integrated reporters were found to show that sustainability is embedded in some aspects as stakeholder dialogue, executive members' commitment to sustainability and developing measures to report on various environmental impacts. Conversely, integrated reporters conducting business as usual and prioritised financial aspects in others aspects as remuneration, promotion and appraisal, employee sustainability engagement and investor dialogue regarding sustainability. The results also show that there are great discrepancies in the levels of sustainability embeddedness coverage between integrated reporters. Sustainability embeddedness scores were found to decline, especially in the most recent years of adoption. Regression results in the third study did not find evidence that early adopters of integrated reporting had significantly higher sustainability embeddedness than later adopters. Additionally, corporate governance mechanisms were also unable to explain sustainability embeddedness scores, with the exception of the positive association between corporate two-tier boards and sustainability embeddedness. Embedding sustainability was found to be mainly associated with GRI application level. There was limited evidence to suggest that integrated reporters providing assurance for their reports had higher sustainability embeddedness scores.

The studies, taken together, contribute to the body of literature on CSR adoption in general and the adoption of integrated reporting and its practices in particular. The studies also provide contribution and implications by testing institutional theory in a new context.

Attestation

I herein confirm the submission of TWO copies of the thesis. This is also to certify that no copies of parts of or the whole thesis was submitted as part as fulfilment of any other degree or professional qualification in this university or any other.

Dedication

This thesis is dedicated to the best parents, Esmail Elmaghrabi and Mai Radwan, my lovely wife, Maryam Adel, my newborn boy, Ahmed, and to the memory of my very dear friend Nasr Al Jardani may Allah send mercy on him, and blessings to his family

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List of Abbreviations

A4S	Accounting for Sustainability
AICPA	The American Institute of Certified Public Accountants
CEO	Chief executive officer
CERES	Coalition for Environmentally Responsible Economies
CG	Corporate Governance
C-Level	Denotes to the Chief executive officer, Chief financial officer and the Chairman
CPA Australia	Certified Practising Accountants of Australia
CR	Corporate Register
CRRA	Corporate Register Reporting Awards
CSR	Corporate Social Responsibility
DMA	Disclosure on Management Approach
EP	Equator principles
FEE	Fédération des Experts Comptables Européens
GRI	Global Reporting Initiative
GRI G3.1	The global reporting initiative guidelines revised third version
GRI G4	The global reporting initiative guidelines fourth version
IAASB	International Accounting and Auditing Standards Board
IASB	International Accounting Standards Board
ICAEW	Institute of Chartered Accountants in England and Wales
ICB	The Industry Classification Benchmark
IFAC	The International Federation of Accountants
IIRC	The International Integrated Reporting Council
INDs	Independent non-executive directors
IR	Integrated Reporting
IRC	The Integrated Reporting Committee of South Africa
ISAE	Standards for Assurance Engagements
ISO	International Organization for Standardization
JSE	Johannesburg Stock Exchange
KLD	Kinder, Lydenberg, and Domini Research & Analytics, Inc.
LR	Likelihood Ratio
MNCs	Multinational Corporations
NBS	Network for Business Sustainability
NGOs	Non-governmental organisations
OLS	Ordinary least squares
SE	Sustainability embeddedness
TPL	Triple Bottom Line
UNGC	United Nations Global Compact
VIF	Variance Inflation Factor

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Chapter 1 Introduction

1.1 Background and thesis context

There has been an escalating emphasis on the incorporation of sustainability issues (ethical, social, environmental and economic issues) within corporate reports (Adams and Frost, 2008; White, 2005a). As Eccles and Krzus (2010) highlight, interest has been growing in the concept and practice of integrated reporting (IR hereafter). IR can be described as 'a holistic and integrated representation of the company's performance in terms of both its finance and its sustainability' (King III, 2009, p. 54). It is suggested that IR could even supersede annual reports in the near future (Burritt, 2012; Adams, 2013; Jones and Slack, 2012). This postulate has been backed by the establishment of the International Integrated Reporting Council (IIRC hereafter) in August 2010, which primarily focuses on the development of the IR agenda and on promoting sustainability to become part of mainstream reporting (Eccles and Krzus, 2010; IIRC, 2010; Burritt, 2012; Eccles and Serafeim, 2011; Sierra-García et al., 2013; Ballou et al., 2012; De Villiers et al., 2014). Additionally, the Global Reporting Initiative (GRI hereafter), as a co-founder of the IIRC along with the Accounting for Sustainability (A4S hereafter) organisation, is envisaging the formation of an IR standard in effect by 2020 (Burritt, 2012).

Although it has been only four years since IIRC was formed, its work on IR has been gathering a fair amount of criticism (e.g., Flower, 2014; Thomson, 2014). This is especially the case after publishing its IR framework in December 2013. It is argued that IR may end up reframing corporate unsustainable practices in a report (Thomson, 2014) that may minimise the risks and enhance corporate reputation to investors (Flower, 2014). This creates a tension as to whether IR can create value to society or

only create value to investors. Such controversy makes IR a debateable new practice, yet interesting, area of research.

The notion of "integration" and integrated reports is not new, but existed prior to the emergence of the IIRC (Beattie, 2014; De Villiers et al., 2014). Eccles and Krzus (2010) show that over 200 companies (listed and non-listed) declared to GRI to have produced an integrated report in 2010, while pioneer reporters started even earlier. White (2005a, p. 6) declares that "Since 2000, corporate social responsibility has entered yet another phase often called "integration."" Nevertheless, such integration is rather limited in its diffusion. As Mirvis and Googins (2006) argue, corporations rarely link their comprehensive sustainability programmes and views into their strategies and embed it within the corporate culture and activities. Beattie and Smith (2013) emphasise the need to move towards integrated narrative reporting. They contend that integrated narrative reporting of the corporate business model[1] would formalise a move towards an integrated (holistic) business model.

Humphreys (2010) asserts that development and diffusion of IR practices may be understood as an institutional process. Institutional theory provides a powerful framework for exploring the institutional forces impinging on practice institutionalisation (Adams and Larrinaga-González, 2007; Mirvis and Googins, 2006; Amran and Haniffa, 2011). In the particular case of IR, it would be helpful to explore the factors that helped in its adoption by corporations. The results may help to draw insights and conclusions concerning the IR practices, and for the future of IR agenda.

Unlike the claims around IR as to align sustainability to financial aspects, sustainability reporting has been regarded as a supplement to predominant model of financial reporting (Burritt, 2012; Jensen and Berg, 2012). Berger et al. (2007) argue that a wider

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[1] A business model revolves around how a corporation converts its various resources into an economic value (Teece, 2010 cited in Beattie and Smith, 2013, p. 243).

"integrated" view of CSR provides various opportunities for the corporation by recognising the interdependence between business and society and allowing the company to unlock the complex (direct and indirect) relationship between CSR and companies own financial performance. Based on the broader view, 'CSR [is] the organisation's lifeblood and [is] integrated into the organisational fibre in every way' (Berger et al., 2007, p. 141). It is, however, important to recognise that IR is yet embryonic, while non-financial reporting is approaching pre-adolescence (White, 2005b, p. 2; Eccles and Saltzman, 2011).

Given the nascent stage of development of IR practices, it can be expected that practices would vary widely. In general terms, the IIRC (2013b, p. 7) assert that an integrated report is

"a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, leads to the creation of value over the short, medium and long term".

Interconnectedness between financial and nonfinancial aspects and the reflection of internal management decisions into corporate social, environmental, governance, strategic, economic, risks and forward looking information is also to be emphasised in an integrated report (IIRC, 2013b; Burritt, 2012; Churet and Eccles, 2014).

IR is a new reporting phenomenon that emerged through corporate practices prior to IIRC's inception, and therefore can be considered an administrative innovation.[2] Westphal et al. (1997, p. 370) assert that in such administrative innovations, the essential question may not only be *whether* organisations adopt these practices, but *how* they adopt them. Porter and Kramer (2006) argue that firms are to pursue integration in the manner deemed to resemble with the firms' own strategies, rather than being

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[2] Zaltman et al. (1973) cited in Westphal et al. (1997, 368) define Innovation as "any idea, practice or material artefact perceived to be new by the relevant unit of adoption".

implemented in a generic fashion (Carroll and Shabana, 2010). Hence, early adopters may tailor IR practices to their own requirements (Westphal et al., 1997) in the absence of IR guidelines. These first-movers are also normally motivated to engage in new practices as to improve their performance (DiMaggio and Powell, 1991b).

IR adoption, with the absence of an agreed upon IR practice prior to IIRC's <IR> framework in December 2013, may be driven by the need to demonstrate that sustainability is a central aspect of corporate behaviour (Birnik, 2013; Burritt, 2012). Stubbs and Higgins (2014) showed that a company recently producing its first integrated report tacked both its sustainability and financial reports together in a single document. However, the sustainability manager of that company stated that they are in the process of aligning their second report to their holistic strategy. Such tendency to produce decoupled "ceremonial" integrated reports may become more evident amongst later adopters, due to the increasing diffusion of IR practice (Meyer and Rowan, 1977; Boxenbaum and Jonsson, 2008).

The notion of Sustainability Embeddedness[3] (SE hereafter) is argued to form a cornerstone for producing an integrated report (A4S, 2007; Solomon and Maroun, 2012). This is because an integrated report has to show how sustainability forms part of operations, decisions, strategies, policies and everyday business conduct (A4S, 2007). Sustainability has to be embedded and not decoupled from the company reporting and practices (Weaver et al., 1999; Collier and Esteban, 2007). Hence, SE level within corporate practices and its reflection within corporate reporting provide a positive view about corporate substantial and decoupled practices.

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[3] SE can be referred to as the corporate instrumentation of social (commercial transactions take place through social relations and networks) ecological (interaction with the surrounding ecosystem) embeddedness while demonstrating linkages with the economic sustainability practices. A detailed explanation of the term is provided in sub-section 3.2.1 Defining sustainability embeddedness.

This thesis includes three studies, which together, provide an overarching exploration of IR adoption and reporting practices using the holistic approach of an institutional perspective. More specifically, the thesis focuses on the two main dimensions of institutional theory. Firstly, chapter 2 explores institutional *isomorphism*[4] (which is already highly incorporated in CSR research). Chapter 3 generally and chapter 4 specifically investigate the notion of *decoupling*[5] (which have, by contrast, received substantially limited attention in CSR studies). Chapter 4 highlights the interlinkages between both dimensions through the study of reporting of early and late adopters.

1.2 Motivation

This thesis is motivated by the increased attention devoted to IR practice, while also recognising that such attention has not been reflected in academic studies. Lodhia (2014, p. 2) has stated that "there is a scarcity of research on IR".

Academics are acknowledging the fact that the IIRC is not the first mover in the IR field, and that corporate practices has emerged prior to the IIRC (De Villiers et al, 2014; Beattie, 2014). De Villiers et al. (2014) claim that there is a need in current research to explore the antecedents of IR. However, most current academic research focuses on the post IIRC reporting examples (Stubbs and Higgins, 2014; Higgins, 2014; Solomon and Maroun, 2012), while not exploring the portrayal of IR prior to the IIRC formation. Hence, fulfilling this gap in current literature through providing insights into IR practice emergence and diffusion represents the first motivation.

Secondly, while IR practices are emerging worldwide, an exploration of the various institutional factors related to its emergence is an underresearched topic in the literature

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[4] Isomorphism refers to a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions (DiMaggio and Powell, 1991b, p. 66).
[5] Decoupling is a situation where organisations abide only superficially to institutional pressure and adopt new structures without necessarily implementing the related practices (Boxenbaum and Jonsson, 2008, p. 81).

that has received many calls for research to address it (Adams, 2014; De Villiers et al., 2011a; Eccles and Krzus, 2010). Hence, the second motivation is to respond to these calls and fulfil this gap in literature, through undertaking a large scale study to explore the determinants of IR adoption using the rich context of institutional theory.

Thirdly, despite the importance of embedding sustainability into corporate actions and reporting, especially when producing integrated reports (A4S, 2007; Solomon and Maroun, 2012), limited studies have explored the phenomenon. Additionally, prior studies on SE have provided very limited guidance on the components of SE. Lacy et al. (2010) show that in a UN Global Compact-Accenture CEO survey, around 81% of the CEOs in 2010 (50% in 2007) claimed that sustainability is embedded within their corporate strategy and operations. However, it is not clear whether such assertions are reflected within corporate reporting. There are some documents developed by organisations promoting IR providing guidance on the elements of SE. Nonetheless, none has provided a complete measure on how to capture SE in corporate reports. Hence, the need for a new measure to capture SE in corporate reports represents the third motivation for this study.

Frameworks and guidelines on IR are currently in their development stages. Additionally, GRI G4[6] has been published in May 2013 with the aim of helping organisations develop integrated reports (Adams and Simnett, 2011; Eccles and Saltzman, 2011). These guidelines have been subject to some criticism in the literature for the corporate flexibility to pick favourable indicators or its incompetency to drive change (Guthrie and Farneti, 2008; Behnam and MacLean, 2011). However, it has not been largely explored for its coverage of sustainability issues. Hence, comparing the SE

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[6] G4 is the fourth and most recent version of GRI's sustainability reporting guidelines: https://www.globalreporting.org/reporting/g4/Pages/default.aspx (accessed14/09/2014).

measure to the *de facto* GRI guidelines to shed light on GRI's content and investigates rooms for improvement in the CSR guidelines represents the fourth motivation.

Although literature on IR is understandably exploratory, there is little discussion of corporate reporting practices. It is argued that SE within corporate culture and activities has to be reflected upon its sustainability disclosures (Adams and McNicholas, 2007; Adams, 2013; Solomon and Maroun, 2012). Hence, the fifth motivation is to address this major gap through exploring SE practices of integrated reporters. This sheds light on calls from De Villiers et al. (2011a) and Hahn and Kühnen (2013) concerning the study of the integrated report content and the levels of reporting for this new corporate reporting practice.

While decoupling has been studied as part of institutional theory by organisation theorists, it has received relatively low attention in CSR studies. Additionally, decoupling has received no attention in the IR literature. Therefore, the study offers early insights into decoupling practices in the IR context. The links between isomorphism and decoupling have not been explored in practice, especially in terms of the differences between early and late adopters (Boxenbaum and Jonsson, 2008). Therefore, the study also links the notion of decoupling to the diffusion of IR practices, by empirically testing the decoupling practices of early versus late integrated reporters. These together form the sixth motivation for the study.

Additionally, top management governance mechanisms have been linked to IR in limited studies (Frias-Aceituno et al., 2013b). However, it was suggested in some studies that there is a relationship between CSR (and more specifically SE) and corporate governance (Aldama et al., 2009; Weaver et al., 1999). Hence, the seventh motivation is to shed light on such gap by empirically testing the effects of CG on SE levels in integrated reports.

1.3 Research paradigm

According to Denzin and Lincoln (2005, p. 22), a research paradigm is defined as

"the net that contains the epistemological, ontological and methodological premises … that set the researchers beliefs and feelings about the world and how it should be understood and studied".

From the above definition, the choice of a paradigm requires an understanding of its epistemological (the researcher's view on what constitutes acceptable knowledge), ontological (the researcher's view on the nature of reality), and methodological (the methods used for finding out knowledge) premises (Saunders et al., 2012, p. 140). Paradigms are very broadly grouped into positivist (also referred to as functionalist) and interpretive/critical paradigms (Lowe and Locke, 2005).[7] In accounting research, Lowe and Locke (2005) showed that the 30 accounting research journals included in their survey are still predominated within the functionalist/positivist research paradigm.

The intention of this section is to provide a concise overview of these paradigms in order to locate the thesis within the appropriate paradigm.[8] In a positivist/functionalist paradigm, the researcher's ontological view is that reality is external and objective (Burrell and Morgan, 1992; Saunders et al., 2012). Under this paradigm, the epistemological view on knowledge is that it is verifiable and observable, where generalisations can be obtained by focusing on causality in order to simplify the phenomena into simple elements (Burrell and Morgan, 1992; Saunders et al., 2012). Hence, through high structured systematic measurement and testing, and mainly the use of quantitative large samples as methodological premises, a law like generalisation is obtained (Saunders et al., 2012, p. 140).

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[7] Different authors have used various paradigm terms. However, this thesis uses these two broad paradigms as outlined in Lowe and Locke (2005).
[8] For a detailed discussion on research paradigms, see: Chau (1986) and Burrell and Morgan (1992).

Conversely, in interpretive/critical paradigms, reality is viewed as subjective, socially constructed and multiple (Burrell and Morgan, 1992; Saunders et al., 2012). Hence, from an epistemological view, acceptable knowledge is based on subjective meanings that motivate action (i.e. it may focus on details and changes in behaviour as reality is expected to be subjective, multiple and changing). The methodological approach typically involves small samples and in-depth qualitative approaches, whereby there is no aim for generalisation (Burrell and Morgan, 1992; Saunders et al., 2012).

From the above, it may be concluded that like most accounting studies this thesis is mainly situated within the positivist/functionalist paradigm. The thesis uses quantitative analysis and a large sample to test institutional factors affecting IR and the existence of decoupling practices. However, due to the fact that the thesis uses a content analysis technique and reports exemplars on SE disclosure, the thesis also borrows some of the characteristics of a more pragmatic paradigm. Johnson and Onwuegbuzie (2004) explain that the reality in a pragmatic paradigm is external as positivist/functionalist, but has multiple views as in interpretive. Hence, researchers may choose the best view for the research problem (Johnson and Onwuegbuzie, 2004; Saunders et al., 2012). The pragmatic paradigm is being increasingly used by accounting and management researchers, especially when applying mixed or multiple methods (Saunders et al., 2012, p. 140).

1.4 Research objectives and contributions

The thesis aims to provide a better understanding on institutional factors influencing IR adoption and expand the understanding of the notion of decoupling by applying and testing it within the context IR adoption.

1.4.1 Research objectives

The research objectives of the thesis are to:

1. Provide a portrayal of the emergence of IR adoption among corporations;

2. Empirically explore institutional factors affecting IR adoption;

3. Develop a measure to capture SE in corporate reports and situate it within the well-established GRI sustainability guidelines;

4. Provide a depiction of the SE reporting practices in integrated reports;

5. Explore decoupling in integrated reports;

6. Empirically examine the effect of top management on SE within integrated reports.

1.4.2 Research contributions

By fulfilling the research objectives, the thesis has several potential novel contributions to literature, theory and practice. The thesis firstly contributes by expanding the dearth of knowledge around descriptively showing the emergence and adoption of IR practices overtime. Secondly, the thesis adds to the body of literature utilising an institutional theory lens to study CSR, by providing an exploration to institutional factors affecting IR adoption as a new reporting practice. Hence, the study provides responses to recent calls by Adams (2014; 2013) and De Villiers et al. (2011a) to study the factors of IR uptake.

Another material contribution to knowledge revolves around the development of a novel measure to capture SE in corporate reports. Although applied to integrated reports in this thesis, the tool can be used to capture the level of embedding sustainability into non-integrated reports. This opens up a new array of research for researchers exploring CSR disclosures. Insights from the application of SE index to investigate integrated

reports can offer solid foundations to both researchers and regulators (De Villiers et al., 2014).

A fourth novel contribution for this thesis is that it explores the notion of decoupling within IR which has not been studied before. It also sheds some light on the relationship between decoupling of practices and practice diffusion through isomorphism. Hence, the study addresses calls for unfolding this rather unexplored tension in institutional theory (Boxenbaum and Jonsson, 2008). By so doing, the chapter indirectly responds to recent calls on the need for an exploration of the implications of IR uptake on reporting practices (Adams, 2014). The study also sheds light on the relationship between field stage of maturity and decoupling practices (Boxenbaum and Jonsson, 2008).

Finally, the study adds to the literature investigating the effects of corporate governance on CSR, by specifically exploring the association between SE and CG. Hence, the study contributes to the literature by unpacking the conceptual argumentation around this relationship and testing it empirically.

1.5 Organisation of the study

The study is presented in 5 chapters, including this introductory chapter, three empirical chapters, and a closing chapter of conclusions and future directions. Since the thesis constitutes three distinct studies on IR and SE, relevant literature and theoretical underpinnings for each empirical chapter are provided therein. Hence, the thesis does not include separate chapters for literature review, theory and method.

Chapter 2 provides a portrayal for the emergence and uptake of integrated reports. The chapter also explores and examines the mimetic, normative and regulative institutional factors, on meso and macro levels, affecting IR adoption. The relevant literature and the

theoretical underpinnings used to explore IR adoption are provided. The chapter provides and discusses the regression results for the determinants of IR adoption.

Chapter 3 develops a measure to capture SE in corporate reports. The chapter also compares SE index to current *de facto* CSR guidelines and shows exemplars of SE disclosures in integrated reports. Literature on SE and the reliability and validity of the measure is also provided. Overall, the chapter provides a better understanding on SE and how it can be reflected in corporate reports.

Chapter 4 provides an empirical exploration of the notion of decoupling and the effects of corporate governance mechanisms on SE of integrated reports. Hence, the relevant literature on decoupling and the adoption stage (early and late adoption) is provided. Links between corporate governance and SE are shown. Additionally, findings of the regression results are provided and discussed.

Lastly, chapter 5 highlights the overall concluding remarks for the thesis. It includes an overall summary of the findings of the three empirical studies. The chapter offers an overall discussion of contributions, implications, limitations and suggestions for future research.

Chapter 2 Determinants of adoption of IR: an exploration of institutional factors

2.1 Preamble

IR adoption and diffusion is an underresearched area that is of significant interest to be explored (Adams, 2014; De Villiers et al., 2011a; Eccles and Krzus, 2010). Additionally, Eccles and Krzus (2010, p. 214) postulate that IR can be considered as an emerging social movement.[9] More specifically, the understanding of institutional factors both at a societal (macro) and organisational (meso) levels that lead to the diffusion of IR practices will help explain the conditions for how such movement is disseminated. However, despite the growing interest and importance attached to IR, there has been limited research to explore the reasons why companies embrace integrated reports as their reporting vehicle.

Towards that end, the study provides a first-hand empirical exploration of IR adoption among a large sample of listed firms using an institutional theory lens. Additionally, the research provides a portrayal of the emergence of IR in terms of when and where it started. Drawing on a sample of GRI listed firms, this longitudinal study employs a logit regression model and various sensitivity tests to test relevant hypotheses based on institutional factors relating to IR adoption since its first emergence till 2010.

The remaining sections of the chapter are organised as follows: Section 2.2 provides an overview of IR. Section 2.3 illustrates the theoretical framework. Section 2.4 reviews the studies on IR adoption in specific and CSR adoption in general. Section 2.5 presents the hypothesis development. Section 2.6 shows the sample selection and method. Section 2.7 provides a graphical portrayal for IR adoption, followed by presenting the main findings of the regression model and sensitivity tests in section 2.8. In addition, section 2.9 offers the discussions and conclusions for the study findings by reflecting on the hypothesis and

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[9] They claim that social movement involves collective endeavours from various interested groups (including NGOs, governments, investor groups and community) to initiate social change.

theoretical underpinnings. Study contributions and implications are offered in section 2.10. Finally, the study limitations and interesting insights are presented in section 2.11.

2.2 Integrated reporting: an overview

This section, firstly, describes IR, and then shows its historical development and the organisations contributing to that development.

2.2.1 IR essence

IR, as a growing concept, has been capturing greater attention over the last few years (Churet and Eccles, 2014). As with the multiplicity and inconclusiveness of CSR definitions (Dahlsrud, 2008; van Marrewijk, 2003), there is no agreed upon definition for IR or a clear set of elements to form an integrated report. However, a number of descriptions for IR from organisations, companies and academics have evolved. Busco et al. (2013b, p. 3) indicate that "IR is a process that results in communicating—through the annual integrated report—value creation over time".

In addition to the IIRC's definition of IR provided in chapter 1, other definitions are offered from involved organisations as the Fédération des Experts Comptables Européens (FEE). FEE (2011b) defines IR as:

"a holistic approach to enable investors and other stakeholders to understand how an organisation is really performing. Addressing the wider as well as longer-term consequences of decisions and actions, an integrated report makes clear the link between financial and non-financial value" (p. 1).

Companies also described their integrated reports. The Danish company Novo Nordisk (2011b, p. 1) describes integrated report as a report showing the way the company is managed using the triple bottom line[10] principle. It explores the interaction between financial

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[10] Triple bottom line refers to producing environmental, social and economic bottom lines (Elkington, 1997).

and non-financial performance. Hence, Novo Nordisk uses the title: Novo Nordisk Annual Report: Financial, Social and Environmental Performance, for its integrated report. The Brazilian company Natura (2012, p. 144) mentions that integrated report is a global trend and is aimed not only at combining financial and non-financial documents, but at reflecting a corporate strategy that effectively includes all dimensions of the business in its management and in the analysis of risks and opportunities. Thus, both previous definitions concentrated on the necessity of showing the business management of financial and non-financial aspects and how they interrelate, and not only focusing on the need to combine the financial and sustainability reports.

The term "one report" was reinforced by Eccles and Serafeim (2011), Eccles and Krzus (2010), Eccles and Saltzman (2011) and Churet and Eccles (2014). For instance, Eccles and Krzus (2010, p. 10) state that IR is:

"the production of a single report that combines the financial and narrative information found in a company's annual report with non-financial and narrative information found in company's "CSR" or "Sustainability" report".

In practice, however, organisations are not limited to produce only one report for its annual filings and may decide to produce additional reports.

In sum, IR is an emerging concept (Eccles and Saltzman, 2011) that based on the above definitions can be described as a holistic approach to reporting on corporate financial and non-financial aspects for the use of investors and all interesting stakeholders, in which linkages between strategy, governance, risk, financial and non-financial performance is provided with reflections among short and long-term performance metrics.

Tensions in IR exist beyond the nonexistence of an agreed upon definition. IR is promoted as a tool that can help show how an organisation creates value (see: IIRC, 2013b) and not a tool

stitching financial and non-financial reporting in a combined report (Jensen and Berg, 2012). IIRC (2013b, p. 11) claims that an integrated report would show the organisation financial, manufacturing, intellectual, human, social and relationship and natural capitals.[11] In fact, although the idea of capitals seems inventive, the elements under these capitals resemble the financial, social and environmental aspects that are being reported by companies. According to the IIRC's framework an increase in corporate value is related to an overall increase in these capitals (Flower, 2014; Adams, 2014). There is, however, no obligation on reporting on all of these capitals (Flower, 2014; IIRC, 2013b). In this regard, IR is criticised to focus on investors more than stakeholders, thereby creating value to investors than creating value to the whole society (Flower, 2014; Thomson, 2014).

IR is sometimes referred to as the new practice that may change the global reporting sphere (Burritt, 2012; Adams, 2014). Additionally, it is meant to bring improvements in corporate thinking with regard to sustainability, especially among corporate top management (Adams, 2014). This is because IR application requires determining the interlinkages between sustainability, risk, strategy, governance and financial aspects in developing the report (IIRC, 2013b), which may induce a change in accounting and management processes (Adams, 2014). Conversely, while IR tries to provide a holistic view of corporate aspects through a report, it may not be considered an evolution to sustainability reporting (Rowbottom and Locke, 2014). IR is criticised to have limited impact on the development of corporate reporting practices (De Villiers et al., 2014). Additionally, IR was recently found to induce little change in corporate thinking regarding sustainability (Stubbs and Higgins, 2014). The above shows that IR emergence and especially its development by the IIRC is a controversial issue.

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[11] For a detailed reflection on the IIRC's capitals, see: Flower, 2014. These capitals are introduced briefly here. Financial relates to the pool of funds generated through investments, equity or debt. Manufactured includes the organisation plant property and equipment. Intellectual includes patents, copyrights and knowledge produced by R&D activities. Human include ethical values, risk management and personnel competencies. Social and relationship include stakeholder relations and other network communications. Natural includes the use of air, water, land, minerals and forests as well as biodiversity and eco-system conservation.

2.2.2 IR: historical development

The early development of IR can be broadly divided into three periods of development as explained below.

2.2.2.1 First period (from mid 1999s till 2004)

In this period, IR practices emerged through corporate initiations in thinking, decision making and reporting. As Eccles and Saltzman (2011) point out, IR practices emerged before academic literature existed on the topic. In year 2000, the Danish company Novo Nordisk mentioned in its annual report that "Our future describes our integrated approach to the sustainability agenda, the corporate governance model and our learning process". (Novo Nordisk, 2000, inside cover).

These seeds of IR emerged before the millennium and can be traced to the mid/late 1990s with the development of Triple-Bottom-Line (TBL) concept by John Elkington in 1997 (Eccles and Serafeim, 2011; Eccles and Krzus, 2010; Eccles and Saltzman; 2011). The essence of TBL entails the production of three bottom lines, two of which showing the environmental and social value added or destroyed through corporate activities, along with the traditional bottom line showing the economic value add (Elkington, 1997). TBL compromises three Ps which are Profit, People and Planet. More specifically, the company produces a bottom line for profits, another for people (measuring how socially responsible a firm is) and a third bottom line for Planet (showing the environmental responsibility). According to Elkington (1997), TBL describes a situation whereby companies balance their efforts to be economically sustainable, environmentally sound and socially accountable. Integrated reporters commonly use the TBL in producing their reports, but arguably in an interconnected (integrated) manner (Eccles and Krzus, 2010; Dragu and Tiron-Tudor, 2014; Eccles and Serafeim, 2011). This is because a single (disentangled) bottom line provides an

inadequate view about the corporate values, operations and decision making (Jensen and Berg, 2012; Eccles and Krzus, 2010; Bartocci and Picciaia, 2013).

Founded by CERES in 1997, GRI released two reporting guidance (G1 and G2) by year 2002 (Nikolaeva and Bicho, 2011; Brown et al., 2009). It is claimed that GRI G1 guidance concentrated on environmental reporting which is one element of TBL (Nikolaeva and Bicho, 2011; Eccles and Serafeim, 2011). However, later guidance (G2) induced several aspects of the other two bottom lines (Nikolaeva and Bicho, 2011), which was also discussed in a disjointed manner.

Assurance on sustainability reporting received limited attention in this period. FEE released a critique paper on providing assurance to environmental reports (FEE, 1999) and didn't provide guidance on sustainability assurance engagements. The International Accounting and Auditing Standards Board (IAASB) released the Standards for Assurance Engagements (ISAE) 3000 in early 2004 which was not directly a standard for sustainability report assurance engagements, but assurance engagements in general (Manetti and Becatti, 2009; IFAC, 2006).

2.2.2.2 Second period (2005 till 2009)

In this period, IR was on the agenda of a wider range of organisations. A4S started publishing reports around IR practices since 2007 (see: A4S, 2007; A4S 2009). King III report[12] published in 2009 provided the roadmap for IR to South African listed companies (Solomon and Maroun, 2012). These represented the two key milestones in this period.

This period exhibited a growth in corporate IR practices (Eccles and Krzus, 2010). Such growth was paralleled with a rise in documents starting to highlight corporate IR practices

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[12] King III is the third report on corporate governance and sustainability reporting reforms (King II and King I were published in 1994 and 2002 respectively). The report is the first to introduce IR on a National level and is published by the Institute of Directors in Southern Africa. For more details, see: Soloman and Maroun (2012).

which was absent in the first period. An early attempt was made by Vancity[13] in 2005, who published a study on IR (see: Vancity, 2005). White (2005b) also highlighted some reporting practices and was among the first to use the term IR (Eccles and Saltzman, 2011). Later, the term was introduced by other academic studies (see: Mirvis and Googins, 2006; Berger et al., 2007; Adams and Frost, 2008). Most of the empirical studies, however, emerged more recently in the third period.

There was a rise in regulatory emphasis on CSR essentially within this period. Among others, the Danish parliament passed a requirement so that some 1100 large firms were required to include CSR issues in their 2009 annual reports (GRI, 2010a). Moreover, the Swedish government mandated the use of GRI guidelines amongst state-owned enterprises on a comply-or-explain basis (Eccles and Krzus, 2010).

Assurance standard ISAE 3000 published in 2004 was used by many countries for various assurance engagements (Manetti and Becatti, 2009). In 2006, IFAC tried to provide an early attempt to tackle the gap in ISAE 3000, by trying to tailor the assurance standard for sustainability engagements via publishing a consultation paper (IFAC, 2006). Noteworthy, such weakness is still an ongoing aspect (Manetti and Becatti, 2009). Additionally, at this period, Corporate Register launched the Corporate Register Reporting Awards (CRRA) with a stream on "best integrated reports" from 2007 onwards.

2.2.2.3 Third period (2010 till 2014)

The formation of the IIRC in August 2010 by both A4S and GRI (IIRC, 2010) represents the major event in this stage (Burritt, 2012; Beattie, 2014). IIRC's objective is to create a globally accepted framework on IR (IIRC, 2010). In the process of its <IR> framework development that was published December 2013, IIRC is continually running a pilot programme since 2012 with the purpose of enhancing the framework (IIRC 2013a; 2013c).

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[13] Vancity is a large Canadian Credit Union. Vancity is currently taking further steps in publishing integrated reports by joining the IIRC pilot programme in 2012.

This programme involves both companies and investor organisations and holds discussions on IR (IIRC, 2013c).

GRI intends to bring into effect an IR standard by 2020 (Burritt, 2012). It has also developed its fourth generation of guidelines in May 2013 which included some reference to IR (see: GRI 2013a). The International Federation of Accountants (IFAC) has been involved in IR through engaging with IIRC (IFAC, 2013) and publishing documents to aid in producing integrated reports (see: IFAC, 2011). IFAC was also heavily involved in issuing recommendations to the G20 to endorse IR as a reporting vehicle (IFAC, 2012). The European Commission has amended the Fourth and Seventh Accounting Directives to include wider range of non-financial disclosures, while closely observing the IIRC's IR plans (EC, 2013).

The Johannesburg Stock Exchange (JSE) of South Africa was the first to mandate IR in accordance with "King III" requirements on a comply-or-explain basis in 2011 (Adams and Simnett, 2011; Eccles and Serafeim, 2011; Cheng et al., 2014; Eccles and Kiron, 2012). South Africa also created the Integrated Reporting Committee (IRC), which developed the first national IR framework (Solomon and Maroun, 2012). The Grenelle II Act in France currently requires companies with more than 5,000 employees to produce integrated reports from 2012 (Eccles and Serafeim, 2011).[14] Likewise, other actors as Singapore Stock Exchange (SGX), Institute of Singapore Chartered Accountants (ISCA) and CPA Australia are supporting the IR agenda through various roundtables, forums and publications.[15]

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[14] Grenelle II Act will be applied gradually starting by larger firms with more than 5,000 employees and total assets of more than 1 Billion euros in 2012. It will then become mandated for smaller companies with more than 500 employees and total assets more than 100 million euros in 2014 (see: http://www.capitalinstitute.org/sites/capitalinstitute.org/files/docs/Institut%20RSE%20The%20grenelle%20II%20Act%20in%20France%20June%202012.pdf).

[15] See for example: CPA Australia promotion to the IIRC framework: http://www.cpaaustralia.com.au/media/integrated-reporting-framework; ISCA pushing towards integrated reporting: http://download.isca.org.sg/research/ISCA%20Why%20Singapore%20Companies%20Should%20Go%20for%20It.pdf.

This period involved a rise in the quantity of publications concerning IR from both organisations as CERES and Black Sun, and the Big 4 firms who are also a common factor in the IIRC and IRC boards. Accounting bodies are involved in the IR development. Recently in 2013, IIRC and IASB signed a memorandum of understanding, which indicates IASB's cooperation in the development and application of the <IR> framework (Beattie, 2014).

IR has been a topic for discussion among numerous actors. The World Economic Forum held two meeting discussions on IR[16], and same for FEE.[17] FEE also necessitates the integration of sustainability reporting within the mainstream reporting and corporate strategy (FEE, 2011a).

In sum, this period involved an escalating rise in the number of actors promoting IR. The current state of IR became more politically contested (Brown and Dillard, 2014), especially through the dominating role of the IIRC and its attraction of powerful organisations within its committee (Flower, 2014). This stage provided an emerging stream of IR guidance, which is still in need for time to materialise (Higgins et al., 2014). Therefore, the study focuses on the earlier periods (up to 2010), before the dominance of the IIRC and the mandated listing requirements in South Africa. The implications of the study results on the current IR development are also shown. A summary diagram of the three periods of IR development and organisations involved as discussed above is provided in Figure 2-1. Primary actors in each period are shown in the inner ring, while key actors and other actors involved in IR development are presented in the outer rings accordingly.

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[16] See notes for the meeting in 2011: https://www.globalreporting.org/information/news-and-press-center/Pages/World-Economic-Forum-Discusses-Integrated-Reporting-.aspx;

[17] FEE held a number of meetings on integrated reporting. Details available at: http://www.iasplus.com/en/events/conferences/2012/fee-integrated-reporting-event; http://www.iasplus.com/en/events/conferences/2012/fee-conference-on-corporate-reporting-of-the-future

Figure 2-1: Multi-Level Pie Chart for the historical development of IR and actors involved
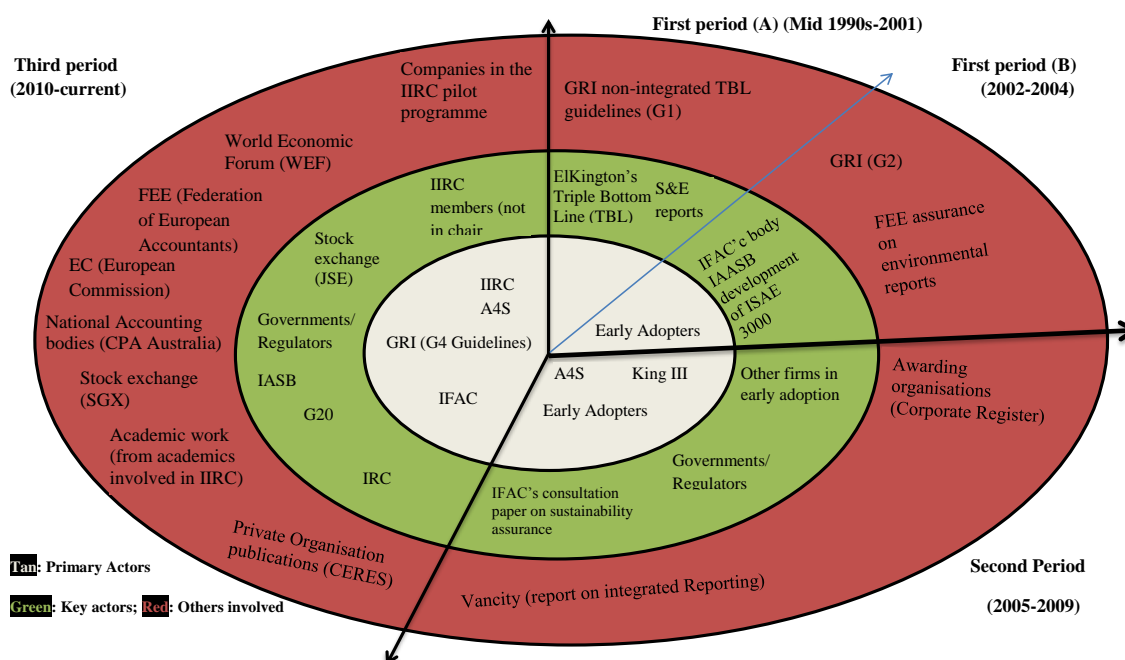
2.3 Theoretical framework

This section explains institutional theory and reviews CSR studies utilising it. Hence, this section provides a better understanding for the study theoretical framework.

2.3.1 Institutional theory: an overview

Institutional theory has a long standing history in political sciences, economics and sociology literature (Scott, 2008; DiMaggio and Powell, 1991a). The theory revolves around explaining how organisations may adopt similar structures and practices to abide to external expectations and gain support and legitimacy[18] (DiMaggio and Powell, 1991b; Deegan, 2002).

Mimetic, normative and regulative factors represent the different forces acting on the institutional field and hence they can apply different levels of motivations to adoption of

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[18] Lindblom (1994, p. 2) cited in Islam and Deegan (2008, p. 853) defines legitimacy as: [. . .] a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy.

social patterns (Kostova and Roth, 2002). These institutional factors are mainly connoted by the term "isomorphism" (DiMaggio and Powell, 1991b). Deegan and Unerman (2011) consider isomorphism to be the first dimension of institutional theory. They consider decoupling (explained below) to be the second dimension. Isomorphism refers to a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions (DiMaggio and Powell, 1991b, p. 66). This often results in organisational imitation and inertia (Scott, 2008).

Institutional factors are mainly understood/framed around the notion of "field". Scott (2008, p. 86) refers to field as operating at a level at which organisational forces are particularly salient. The field constitutes the particular context by which institutions pressure and influence the organisational activities and behaviour (Powell and DiMaggio, 1991). Thus, fields are best understood as the centre of dialogue and interaction, through which a diverse range of institutions come to bear on field participants, and influence common organisational behaviours and their rationality (Bebbington et al., 2009, p. 593). Scott (2008) identifies six fields (levels) to analysis, as explained in sub-section 2.3.1.4 below.

2.3.1.1 Mimetic (cultural-cognitive) isomorphism

Mimetic isomorphism stems from organisations modelling the practices of others, which are largely practices from rivals in the field (Scott, 2008; Jennings and Zanderbergen, 1995). By so doing, organisations are trying to emulate their practices due to potential consequences of non-compliance (Zucker, 1987) or uncertainty about the benefits of newly formed practices that was taken by legitimate and reputable rivals (DiMaggio and Powell, 1991b). More specifically, powerful and innovative organisations pressure cognitively their rivals in a field to align their practices to that of powerful organisations (Meyer and Rowan, 1977). This mimetic mechanism results in solving problems of non-compliance of field actors at little

expense (Cyert and March, 1963). In the case of IR, companies may model the practices of their reputable rivals that have produced integrated reports, by producing similar reports.

2.3.1.2 Normative isomorphism

The existence of a normative isomorphism is identified in actors' professionalism (DiMaggio and Powell, 1991b) and entails the cognitive base by which members in a profession deem as legitimate to their occupational norms (Larson, 1977; Collins, 1979; DiMaggio and Powell, 1991b). It is pressures arising from fulfilling professional expectations or adopting practices that matches with group norms (DiMaggio and Powell, 1991b). Normative mechanisms elicit a deeper form of legitimacy assessment, given the moral base associated with the actors (Scott, 2008). Therefore, the pressures on actors' compliance are advanced internally given the existence of both intrinsic and extrinsic rewards attributed to such conformity (ibid.). In the IR case, engaging in groups with norms related to bringing sustainability as an essential part of corporate business may motivate IR practices. Organisations operating in such an institutionalised environment will seek external measures of merit, as ceremonial awards or endorsement by important people or organisations to seek legitimacy (Meyer and Rowan, 1977, p. 350).

2.3.1.3 Regulative mechanism

Regulative (coercive) mechanisms involve formal and informal pressures exerted by institutions on organisations as a result of the organisational resource or cultural dependency in the social field the organisation function (DiMaggio and Powell, 1991b). Such institutions comprising rules, regulations, sanctions and laws (Scott, 2008) are able to persuade organisations' actions as a result of the potential sanctioning (Bebbington et al., 2009). Coercive institutions exist outside the organisation (Berger and Luckmann, 1967). Organisations should confirm to different rules either legal or quasi-legal rules to maintain their legitimacy (Scott, 2008). In case of IR, laws that widen corporate CSR commitments may encourage them to integrate their reports to show how CSR is an integral part of its

operations and values. Notably, a high number of coercive institutions with different and sometimes conflicting requirements may affect the organisation legitimacy negatively (Meyer and Scott, 1983).

2.3.1.4 Levels of institutional analysis

Researchers might focus on broad macro aspects of institutional analysis or narrow it down to micro aspects (Scott, 2008). There are six categories of field analysis: worldwide system, societal, organisational field, organisational population, organisation and organisational sub-system. World system is a self-contained system including multiplicity of cultures (such as democracy), whereas, societal level involves communities, tribes and/or nation states and is not considered a total system (Wallerstein, 1976). Both worldwide and societal levels are considered as macro levels of analysis (Scott, 2008).

Both organisational fields and organisational populations are identified as meso levels of analysis (Scott, 2008). Organisational field includes the population of similar organisations plus the institutions influencing their performance (Scott, 2008; Bebbington et al., 2009) and can be referred to as "industries" (Bebbington et al., 2009). Hannan and Freeman (1977, p. 934) refer to organisation populations as "classes of organisations that are relatively homogeneous in terms of environmental vulnerability". Organisational populations may include listed companies in a country. This level of analysis, therefore, involves the relationships and networks of constituents of the field (Bies et al., 2007).

Research focusing on the micro level of analysis seeks to explain the heterogeneity between organisations (Johnson et al., 2003). Organisation level involves a discussion of a subset of organisations from an organisation population or the analysis of individual organisations (Scott, 2008). The sub-organisation level includes intra-company analysis. Both are considered micro levels of analysis (ibid.).

2.3.1.5 Decoupling

Deegan and Unerman (2011) consider decoupling as the second dimension of institutional theory.[19] Decoupling is a situation where organisations abide only superficially to institutional pressure and adopt new structures without necessarily implementing the related practices (Boxenbaum and Jonsson, 2008, p. 81). Hence, in decoupling, the formal (apparent) structure is decoupled from the actual practice (Meyer and Rowan, 1977). In the case of IR, companies may show that they produce integrated reports, yet their actual practices concerning CSR activities and reporting have hardly changed. By so doing, corporations may publicly show adherence to institutional practices, while in fact not changing their actual actions. Chapter 4 of this thesis provides an exhaustive discussion and exploration of decoupling in integrated reports.

2.3.2 CSR studies using institutional theory

This subsection reviews the conceptual and empirical CSR studies utilising institutional theory accordingly.

2.3.2.1 Conceptual studies

Conceptual studies using institutional theory to explain CSR have either provided a series of propositions or showed a model for corporate responsiveness. Campbell (2006) developed a set of propositions specifying the institutional conditions that force organisations to act in a socially responsible manner. The study proposed that: (1) adoption of CSR comes from external stakeholder pressures on the organisation. For instance, strong regulation is likely to influence organisations to act in a socially responsive way; (2) the better the corporate social behaviour, the lower the pressures exerted to direct corporate managers to bring CSR on their agenda. For instance, the existence of effective self-regulatory industry that monitors corporate behaviour and existence of private organisations as non-governmental

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[19] They consider the first dimension to be isomorphism, which includes regulative (coercive), mimetic and normative isomorphism previously illustrated.

organisations (NGOs) are examples of such pressures; (3) continuous dialogues between managers and stakeholders could alter the taken-for-granted assumptions about CSR. For example, participation of management in educational venues or institutionalised dialogue with unions, employees, community groups or other stakeholders are likely to have a positive effect on corporate social responsiveness.

Campbell (2007) is an extension to his earlier work in 2006, which was positioned on a meso/macro level of analysis (2007, p. 948). The two propositions added were based on economic constraints. Firstly, a weak economic environment is likely to lower the probability of corporations acting in socially responsive ways. This was particularly verified in Dey (2007) where Traidcraft Plc shifted its attention from the social project towards improving its financial performance. Secondly, there is a curvilinear relationship between CSR and the level of competition. Corporate social behaviour is less likely under very stiff or oligopolistic forms of competition.

Jeurissen (2004) discussed the institutional conditions that bring in a state of corporate citizenship. The study focused on an organisational field level, and proposed that organisations are influenced by (1) market relationships including competition conditions, (2) regulatory (political) frameworks as rules, (3) stakeholder environment especially corporate customers and (4) social values that provide a cultural condition for perceiving corporate responsibility and sustainability issues.

Marquis et al. (2007) provided a model on how the corporate social action is shaped by regulative, normative and cultural-cognitive institutional factors at the community level. The study showed that regulative factors as the legal and political concerns at the community level may either encourage or restrict the focus and form of corporate social actions. For instance, tax laws can play an important role in encouraging or restricting the level of corporate social action. Normative forces are thought to enhance the level of corporate social

action. The existence of (a) local institutional infrastructure as local institutions, CEO groups, and (b) local non-profit organisations links to corporations, both enhance the level of corporate action. On a cultural-cognitive basis, community ideology, values and shared culture will affect the focus and form of corporate social action. For example, Marquis (2003) showed that prominent local companies board behaviour serve as a model for corporations that are newcomers in that community.

Jones (1999) explored institutional factors on a multi-level that may affect CSR and stakeholder management practices. The study proposed that stakeholder management is more likely to occur in sociocultural systems that are more supportive to social responsibility and that have more developed national economic systems. On a meso-level, the likelihood of stakeholder management is more evident with high profile industries, high levels of competition, newer industries and customer goods industry. On a firm level, the study proposed that stakeholder management is more likely in smaller, younger, closely held firms seeking a differentiation strategy. Additionally, it proposed that stakeholder management is also related to the individuals who have a value system more oriented towards social responsibility.

Delmas and Toffel (2004) proposed that stakeholders can impose regulative, normative and mimetic pressures on plants/facilities. They proposed that governments can enforce regulative pressures through legislation or by other means as endorsing particular sustainability initiatives and providing assistance on how to adopt these initiatives. While customers may also put pressure on facilities to embrace environmental management plans, competition (industry pressure) may result in mimetic isomorphism to leading practices. Community may facilitate both regulative and normative pressures. Regulative pressures may arise through votes in local and national elections and lawsuits against plants' poor environmental performance. Normative isomorphism arises from community ability to

encourage plants to adopt environmental practices through NGOs and community's pro-environmental stance. Response to these pressures is, in part, dependent on plant environmental performance and organisational structure. It is argued that multinational corporations (MNCs), more visible corporations and parent company with high environmental responsibility would enable better plants' environmental performance. Firms with poor performance will face community pressure to either self-regulate or increase the chances of regulatory threat.

Matten and Moon (2008) developed a framework to attempt answering two research questions which are: why does CSR differ between countries? And how and why does it change? In their framework, explicit CSR involves developing voluntary programs and initiatives motivated by perceived expectation of corporate stakeholders. Conversely, implicit CSR describes the corporate role within the wider institutional and societal concerns. The corporation here is subject to mandatory role-like requirements, whereby the motivation for CSR is derived from isomorphic expectations of institutions and corporate peers enhancing collective actions. They showed that CSR in the US was more driven by explicit motives than in Europe. For instance, Kolk (2005) noted that thirteen out of fifteen global corporate codes were from US firms and the remaining two were related to European firms. Moreover, reforms to the financial system, including increases in the socially responsible investments and the breakdown of block-holder control over stock markets, played a key role to enhancing CSR in Europe. As for the cultural changes, fair and ethical trade movements and social reactions to corporate activities (e.g., the Shell controversy in Nigeria, and Nestle's marketing policies) were key drivers towards explicit CSR improvement in Europe. The study concluded that all these tensions in national and sub-national systems resulted in providing incentives to adjust organisational level CSR decisions.

These conceptual studies suggest that the mimetic isomorphism related to CSR came from corporate competition and peers (Campbell, 2007; Jones, 1999; Jeurissen, 2004; Matten and Moon, 2008) and corporate economic environment (Campbell, 2007). Normative factors affecting CSR include social and environmental systems and values supporting CSR (Marquis et al., 2007; Jones, 1999); professional associations and monitoring (Campbell, 2006; 2007) such as CEO groups (Marquis et al., 2007), NGO existence (Campbell, 2006; 2007; Marquis et al., 2007; Delmas and Toffel, 2004) and stakeholder environment and dialogue (Campbell, 2006; 2007; Jeurissen, 2004). Regulatory institutional factors revolved around rules and laws (Campbell, 2006; 2007; Jeurissen, 2004) as tax laws (Marquis et al., 2007). Other regulatory pressures may stem from votes in local and national elections and law suits against poor corporate practices (Delmas and Toffel, 2004).

2.3.2.2 Empirical studies

Empirical studies on CSR utilising institutional theory used various methods and concentrated on various institutional pressures. De Villiers and Alexander (2014) set a comparison between a sample of 18 Australian and 18 South African companies in the mining industry, to examine the corporate social reporting structure. The study examined annual reports, websites and standalone reports of these companies guided by an emphasis on isomorphism. The study used a GRI driven content analysis made of 30 items to test for the similarities/differences in CSR reporting patterns across the two groups. Out of the 30 items, 29 were indifferent between both groups and only one item (monetary environmental disclosures) was different (in favour of South African mining companies). They found that the same patterns hold, and any differences were due to the CSR context, such as national regulations and local communities. De Villiers and Alexander (2014) inferred that the similar patterns of reporting were driven by the role of CSR templates such as GRI guidelines. Templates may cause institutionalised practices to become as taken for granted leading

participants not to question its relevance in particular instances (Tuttle and Dillard, 2007), thus resulting in isomorphism (Tolbert and Zucker, 1983).

The findings of De Villiers and Alexander (2014) are in line with an earlier study by Fortanier et al. (2011). They studied the harmonisation of CSR reporting due to the global CSR standards (e.g., ISO and UNGC). The study used a sample of 144 companies drawn from the top Fortune 250 companies in 2004 and a checklist of 25 CSR items to identify CSR reporting. The study was conducted using an institutional context and an ordered logistic regression. Similar to De Villiers and Alexander (2014), they found that adherence to global CSR standards reduced the cross-country differences in CSR reporting and made these reports more harmonised.

Country institutional factors were also studied by Chen and Bouvain (2009). They explored whether a sample of 151 leading companies in the US, UK, Australia and Germany that are members of the UNGC will have similar online CSR reports or not. Using automated content analysis software "Leximancer" to analyse the CSR reports and MANOVA to test the differences between countries, they found that country institutional forces made the reports unstandardised. For instance, the spread of ownership in the UK, US and Australia made the companies to address wider sets of issues as compared to Germany.

Sotorrío and Sánchez (2008) used multiple regression analysis to examine the country effect on corporate motive to report CSR using a sample of 40 companies in North America (USA and Mexico) and Europe with high reputation according to financial times and Interbrand publications. The paper argued that although differences may exist when comparing companies in different societal groups, companies in the same societal level will have similar practices due to the isomorphic attributes. The research found that on average, the level of CSR was higher in Europe as compared to North America. This was attributed to the stronger

institutional environment in European countries set by the European Commission, stronger customer associations, NGOs and national and local government regulations.

Muthuri and Gilbert (2011) used content analysis to study the effect of institutional factors on CSR reporting in a sample of 54 listed and non-listed Kenyan companies. Companies were classified as either domestic, Kenyan international or foreign multinational since the three groups might be influenced by different institutional pressures. The results of the group comparisons showed that the focus of CSR was derived by the international institutional pressures as NGOs and local community stakeholder philanthropic needs. Kenyan companies were found to mimic the practices of foreign corporations. Alternatively, regulative pressures arising from national governmental laws were non-existent.

Bebbington et al. (2009) examined the organisations' views on the reasons they initiated sustainability reporting and provided an interpretation for these responses using an institutional lens. The study carried out semi-structured in-depth interviews with 6 large corporations in New Zealand and found that mimetic isomorphism lay behind embracing sustainable development reporting within these corporations. Hence, the decision was not due to corporation's rational choice, but was part of a differentiation strategy.

Husted and Allen (2006) addressed whether MNCs' CSR was derived from an institutional or a strategic basis. The study identified that under institutional basis, MNCs mimic the practices of each other worldwide, where limited attention will be given to CSR at a local level. Conversely, strategic basis is derived from MNCs role in responding to their stakeholders both globally and locally. Using a sample of MNCs in Mexico, the study divided firms into multinational, multi-domestic and transnational companies. A total of 111 questionnaire surveys were analysed to find that isomorphic norms lie behind MNCs decisions on CSR reporting, where they focus more on global issues than local issues in their reports.

Doh and Guay (2006) used institutional theory and stakeholder theory to show how the institutional environments in USA and Europe affected the expectations about CSR in the society. The study focused on three main institutions which were government policies and regulation, NGO activism and corporate strategy. To illustrate the different institutional roles the study used three high profile cases: global warming, trade in genetically modified organisms and pricing of anti-viral drugs in developing countries. For instance, the pricing of HIV/AIDS drugs in South Africa received an opposition to change by individual firms both in Europe and in the US. Though, firm strategies appeared to be the same under this case, government and NGOs had different influences in both regions. In Europe, the government and NGOs strongly influenced companies to change. Conversely, USA government had a weaker effect and NGOs supported the change but could not influence corporate decision making.

Long and Driscoll (2008) studied the institutionalisation of codes of ethics as a tool intended to confer organisational legitimacy. Seven codes of ethics from Atlantic Canada region firms were selected and a content analysis for such codes was used. The study found that codes of ethics were developed by firms following a strategic legitimacy, where the company brings its self-interest in line with the societal cultural values. The application of the codes of ethics was also dispensed through isomorphism.

In sum, mimetic isomorphism is seen to occur as corporations applied sustainability reporting, not following a rational choice, but through an imitation strategy to show compliance with institutionalised practices (Bebbington et al., 2009). CSR is adopted following well established templates of reporting (De Villiers and Alexander, 2014; Fortanier et al., 2011), addressing global CSR issues following peers (Husted and Allen, 2006; Muthuri and Gilbert, 2011), and applying codes of ethics that are adopted by others (Long and Driscoll, 2008). Normative pressures mainly stemmed from NGOs and governmental policies

(Doh and Guay, 2006) and strong institutional and environmental pressure (Chen and Bouvain, 2009; Sotorrío and Sánchez, 2008; Muthuri and Gilbert, 2011). Regulative pressures included national laws and regulations (De Villiers and Alexander, 2014; Sotorrío and Sánchez, 2008).

The variation in CSR practices due to variation in national normative and regulative institutional environments is of importance to be explored in IR context. This is because IR as a reporting practice is not country specific (Jensen and Berg, 2012). Additionally, in most of reviewed studies, mimetic isomorphism was a main factor in aligning and diffusing the CSR reporting. As IR is a corporate reporting practice (De Villiers et al, 2014), it will be interested to explore whether diffusion of IR is being motivated by rivals.

A summary diagram of the methods used and levels of analysis of these studies is provided in Figure 2-2. The level of institutional analysis is shown on the vertical axis and the level of generalisability and method used on the horizontal axis. As shown, studies with low generalisability were mainly conducted at organisational level and using in-depth case studies. On the contrary, highly generalisable studies used statistical analysis and were mainly conducted at a meso or macro level.

Figure 2-2: Diagram showing level of institutional analysis of empirical CSR studies using institutional theory

2.4 Literature review of adoption

IR adoption represents a new arena in corporate practices (Eccles and Serafeim, 2011) and also an emerging subject of research (De Villiers et al., 2011a). However, the area has been recently gaining an increasing attention by academics (De Villiers et al., 2011a; Frias-Aceituno et al., 2012, 2013a, 2013b; Jensen and Berg, 2012; Lodhia, 2014; Eccles and Serafeim, 2011; Burritt, 2012). Due to the limited, but growing, literature on IR adoption, this section summarises the studies related to corporate adoption and non-adoption of IR and CSR reporting practices.

On a broader perspective, there is a larger body of research on the adoption of other international CSR guidelines and initiatives, including GRI reporting guidelines (Nikolaeva and Bicho, 2011; Brown et al., 2009), Equator Principles[20] (Wright and Rwabizambuga, 2006; Jamali, 2010), and United Nations Global Compact (UNGC hereafter)[21] (Cetindamar and Husoy, 2007; Perez-Batres et al., 2011; Behnam and MacLean, 2011). Additionally, taking a wider perspective, there are studies exploring the adoption of CSR and sustainability reporting practices (e.g., Amran and Haniffa, 2011; Kim et al., 2013; Cormier et al., 2005; Dhaliwal et al., 2012).

Hence, subsection 2.2.1 discusses IR adoption studies in detail, 2.2.2 reviews studies on international CSR guidelines and initiatives adoption and 2.2.3 reviews studies on sustainability reporting adoption. These studies, together with the theoretical framework discussed in the above section would help develop the hypothesis of this study.

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[20] The Equator Principles is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects and is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making. EP website: http://www.equator-principles.com/index.php/about-ep/about-ep, (accessed 06/07/2013).

[21] The UNGC is a strategic policy initiative for businesses that works toward the vision of a sustainable and inclusive global economy which delivers lasting benefits to people, communities, and markets. The UNGC developed ten principles for businesses to align with in the areas of human rights, labour, the environment and anti-corruption. UNCG website: http://www.unglobalcompact.org/AboutTheGC/index.html, (accessed 07/04/2014).

2.4.1 Adoption of IR literature review

Earlier academic studies on IR focused on case studies showcasing integrated reporters and highlighting their practices. A large part of these studies were compiled in: *Accounting for Sustainability: practical insights* by Hopwood et al. (2010b). Eccles and Krzus (2010) also provided handful IR examples. Lately, some IIRC pilot programme constituents were showcased in Busco et al. (2013a) and IIRC (2013c). Additionally, Solomon and Maroun (2012) studied the reporting of 10 South African companies listed on JSE. The study is not intended to explain these case studies in-detail,[22] as these case studies were not focusing on factors affecting IR adoption, but rather on exemplifying IR practices. The discussion aims to extract some institutional factors that appear to affect IR adoption in these case studies.

Sainsbury's[23] case study shows that commercial and legislative factors were drivers for embedding sustainability and providing a more interconnected report (Spence and Rinaldi, 2010). It was shown that the company experienced cost savings and higher income as a result of greater environmental and social concerns which helped in formulating such alteration in its reporting. Additionally, the existence of legislative laws and frameworks, including the European Union water framework directive and Framework directive on the use of pesticides, helped the company to balance its economic, social and environmental priorities.

Alternatively, Novo Nordisk[24] faced numerous criticisms by external stakeholders and negative media coverage in early 1990s (Dey and Burns, 2010). Various NGOs visited and directly engaged with Novo Nordisk to assess and enhance its performance (Novo Nordisk, 2012). Alternatively, HSBC[25] extended the Equator principles sustainability initiatives into

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[22] A more detailed summary for the case studies in Hopwood et al. (2010b) is provided in chapter 1 of the book, "Introduction to the accounting for sustainability case studies".

[23] The company has taken part of the A4S project in 2007 (A4S, 2007) and is now taking part of the IIRC's pilot programme (http://www.theiirc.org/companies-and-investors/pilot-programme-business-network/) to experiment IR.

[24] Novo Nordisk's first integrated report published in 2004 (Novo Nordisk, 2010).

[25] HSBC took part of A4S project (A4S, 2007) and is a member in IIRC's pilot programme in order to experiment IR practices.

sector policies and investment decisions and ultimately towards more IR (Bhimani and Soonawalla, 2010). For British Telecommunications plc[26], the main drivers for moving towards a more interconnected management emerged from establishing a business case, by enhancing reputation, reducing costs, mitigating risks, and motivating personnel (Unerman and O'Dwyer, 2010).

From these case studies, it is shown that there are varying institutional factors and levels that can affect corporate IR uptake. Sainsbury's and British Communication were driven by profitability and performance motives at the firm level. HSBC was driven by extending its sustainability professional association (EP) as an organisational field normative factor to embrace IR practices. While Novo Nordisk was motivated through NGOs engagement, Sainsbury's was motivated by the regulatory aspects. Hence, the case studies showed that normative factors from business associations and NGOs and regulative factors may drive IR adoption. The following reviews the studies particularly focusing on IR adoption and emergence.

Jensen and Berg (2012) studied the impact of country level differences on producing integrated reports using a sample of 309 firms (204 integrated reporters and 105 sustainability reporters). Majority of integrated reporters were collated from the GRI report list, while the remaining came from examples in Eccles and Krzus (2010), entrants of CRRA 2010 and examples in Hopwood et al. (2010b). The 105 sustainability reporters came from the GRI readers' choice award 2010 for the 2009 reports.[27] The sample chief criticism is the double count of some integrated reporters that were also included in the reader's choice award list.[28]

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[26] Took part of A4S project (A4S, 2007).

[27] GRI readers' choice is a survey that captures the readers' opinions about reports produced under GRI guidelines, more information available at: https://www.globalreporting.org/resourcelibrary/Count-Me-In-The-Readers-take-on-Sustainability-Reporting.pdf (accessed: 13/08/2014).

[28] Examples include: CPFL Energia, EcoRodovias, EDP, and Natura Cosmeticos. The full list of reader's choice awards 2010 is available at: http://csr-reporting.blogspot.co.uk/2010/05/gri-readers-choice-awards-2010.html (accessed 27/06/2013).

The study included mixed reports for 2009 and 2010 and the sample included listed and non-listed firms.

Jensen and Berg (2012) used the 5 historically comparative country differences outlined in Matten and Moon (2008) which are: political, financial, educational/labour, cultural and economic systems. Legal system, investor protection and employment protection were used as proxies for country political systems. Country financial system proxies included: market-based or bank-based economies and country ownership concentration. Private expenditures for tertiary education and number of trade unions were proxies for the education and labour system. Cultural system proxies were the national corporate responsibility index and value system. Lastly, a dummy for developed and developing countries was used as proxy for the economic system. No controls variables were used. Market coordination and ownership concentration proxies, can be relevant for publicly listed companies as suggested in Matten and Moon (2008), but not for a mixed sample of listed and non-listed companies as in the study. The same issue applies to investor protection. Using Kolmogorov–Smirnov Z-test to compare both groups, the study found that integrated reporters are more likely to stem from countries with higher employment protection laws, higher investor protection laws, higher degree of market oriented economy, higher national corporate responsibility, higher ownership dispersion, higher trade unions, higher per-capita income and higher human development index scores.

Frias-Aceituno et al. (2012) studied the effect of industry concentration and firm characteristics on IR adoption using agency and signalling theory lenses. The study utilised an unbalanced sample of 1,590 companies (3,042 observations) from 20 countries over the period 2008-2010 drawn from Forbes Global 2,000 largest international companies. Integrated reports were identified using a checklist extrapolated from the recommendations of the IIRC's 2011 discussion paper and the Spanish Association of Accounting and Business

Administration (AECA) 2011 IR scoreboard. An ordinal dependent variable with scores of 0=financial reports, 1=CSR (sustainability) reports and 2= integrated reports, and a logistic regression were used.[29] Results show that the level of industry competition is negatively associated with IR adoption.[30] Moreover, the study found a positive association between IR adoption and corporate size, market-to-book value and GRI G3.1 application level, while weak evidence was found to support a positive association between profitability and IR adoption.

Using a sample drawn from the Forbes 2,000, Frias-Aceituno et al. (2013a) studied the effect of country's legal system on IR adoption. The final sample comprised of 2,129 observations from 750 companies in 20 countries in 2008-2010. The study identified corporate reports as integrated (scoring 1) and non-integrated (scoring 0), based on recommendations from the IIRC (2011) and AECA (2011) for the items comprising an integrated report. Frias-Aceituno et al. (2013a) found that companies located in a civil law origin country are more likely to publish integrated reports. Moreover, size, profitability and country legal enforcement[31] are positively related to IR adoption.

Garcia-Sánchez et al. (2013) examined the effect of culture using Hofstede's cultural dimensions[32] as proxies for values of countries stakeholders' on IR, using a stakeholder theory lens. The study was based on Carroll (1979) proposition that due to the different cultural conditions affecting local stakeholders they have different expectations to corporate behaviour. This will result in a broad range of corporate diverse values, norms, practices and information disclosure. They used the same sample as the study employed by Frias-Aceituno

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[29] In case of having an ordinal dependent variable, ordinal logit/probit regression is the preferable statistical method to use, see: Winship and Mare (1984).

[30] Industry concentration was based on Herfindahl index, which divides the income earned by a company in an industry by the total revenue of companies in that industry.

[31] Legal enforcement was a product of two variables: efficiency of the legal system and law and order. Both obtained from La Porta et al. (1998).

[32] The dimensions are: individualism versus collectivism, masculinity versus femininity, tolerance versus aversion to uncertainty, power distance and the fifth dimension orientation towards long versus the short term orientation. For more details, see: Hofstede (2001).

et al. (2012), but identified integrated reporters based on the GRI listings.[33] A logistic regression was employed for testing the effect of Hofstede's cultural dimensions on IR. Garcia-Sánchez et al. (2013, p. 838) found that firms originated from countries with higher collectivist and feminism dimensions are more likely to produce integrated reports. The study also found that firms operating in countries with homogeneous cultural systems have similar behaviour patterns towards IR.

Lodhia (2014) used a case study approach to explore the drivers of IR adoption in a consumer-owned bank. For that purpose, the study employed a practice theory lens[34] and used interviews and documentation analysis. Findings showed that the understanding of the potential value of IR and the existence of basic guidance on it were enabling causes to the transition to IR. Additionally, the corporate ethical values and organisational structure that embeds social, environmental and economic issues helped in differentiating the firm and applying IR.

Eccles and Serafeim (2011) and Burritt (2012) focus on the future of IR and its potential diffusion. Eccles and Serafeim (2011) contended that the future of IR diffusion requires the existence of both market and regulatory forces. They suggested that voluntary IR adoption will compel corporations in an industry to emulate other leading firms "best practices". They also claimed that potential pressure from large institutional shareholders in both public and private equities may stimulate IR implementation. However, they argued that such voluntary nature of market forces will result in a slow progress of IR adoption, and thus, has to be combined with regulatory forces. The study proposes three regulatory forces to accelerate IR adoption, namely: legislation (as EU proposed mandatory ESG reporting), regulatory actions

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[33] The study, however, did not explicitly mention the GRI source used to extract the data. Noteworthy, there are two sources: the first is GRI report list, and the second is the recently established sustainability disclosure database. For the link to the sustainability disclosure database, see: http://database.globalreporting.org/search (accessed 01/07/2013).

[34] Practice theory relates to the relationships of human activities, linked through a collection of practical understandings, see: Schatzki (2002).

(from national securities regulators as the SEC) and listing requirements (as the JSE mandatory IR requirement). Eccles and Serafeim (2011) postulated that regulatory actions are particularly important to help companies produce harmonised reports (especially among each sector), which can ease comparison of corporate financial and non-financial results.

Burritt (2012) shed light on the future directions of environmental performance accountability with a focus on IR. He argued that constraints are apparent for a successful diffusion of IR practices. Firstly, large listed firms are currently the main focus of the IIRC, which excludes public agencies and non-governmental sectors. Furthermore, at the current stage, the quality of the voluntary disclosures in the integrated reports is not required to be externally assured. Alternatively, Burritt (2012) suggested that listing requirements in South Africa will help promote IR global acceptance. The study encouraged researchers to explore various aspects around IR, including the exploration of opportunities and constraints of IR adoption, developing measures to capture the embeddedness of social and environmental matters in various corporate actions, strategies and behaviours. Burritt (2012) and De Villiers et al. (2014) also urged academics to work in transdisciplinary groups to further study IR.[35]

In summary, IR adoption studies mainly focused on macro-level country level variables and used various theoretical lenses. Jensen and Berg (2012) explored country differences, Frias-Aceituno et al. (2013a) explored the country's legal system and Garcia-Sánchez et al. (2013) studied the cultural differences using Hofstede scores. Although those studies did not examine the effect of institutional isomorphism, they showed that country level differences may explain IR adoption. Frias-Aceituno et al. (2012), however, studied the effect of industry and firm characteristics. Lodhia (2014) explored the organisational attributes to IR adoption using a case study. All the quantitative studies used a short panel of only three years, and

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[35] Noteworthy, integrated reporting literature was extended beyond corporate adoption and future IR development. While Gonzálbez and Rodríguez (2012) studied the use of XBRL language to develop integrated reports, Owen (2013) studied the using integrated reporting in accounting educational courses.

only one year in Jensen and Berg (2012). This study explores adoption using an institutional theory lens and uses the three pillars (regulative, normative and mimetic factors) on macro and meso levels. The study also contributes by using a longer study frame and more sensitivity tests for the results.

2.4.2 Literature review on international CSR guidelines and initiatives adoption

Determinants of international CSR guidelines and initiatives adoption were more frequently studied in prior research than IR adoption. Nikolaeva and Bicho (2011) used institutional theory, resource dependency and signalling theory to study the effects of institutional factors and media on GRI adoption as a reputation management tool. The sample consisted of 601 firms drawn from the top global companies according to the Business Week's 1999 publication.[36] Similar to other adoption studies, logit regression was employed to test factors affecting the binary dependent variable with values of 1 for GRI adopters and 0 for non-adopters. The data was collected from the inception of GRI in 1999 till 2009. As hypothesised, they found that higher media coverage of corporate CSR activities was positively associated with GRI adoption. Additionally, companies more involved in promoting their CSR activities were more likely to adopt GRI. Both high and low transparency cultures were more likely to adopt GRI (i.e. suggesting a U-shaped relationship). Media exposure of the GRI initiative was positively associated with GRI adoption. A mimetic isomorphism effect was observed, whereby as the proportion of GRI adopters increased the probability of GRI adoption increased.

Brown et al. (2009) qualitatively explored the institutionalisation of GRI and its organisational field since emergence in 1999 until GRI G3 guidelines development. For this purpose, they collected data from numerous sources which were: documentary analysis for GRI archives, literature from academics and professionals, observations at GRI's annual

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[36] 100 top companies in the emerging economies and top 501 companies in developed economies.

conferences, and finally semi-structured interviews with several members related to the development of GRI at its various stages of emergence. The study found that both the strategies of the GRI founders and the current power relations from other GRI stakeholders influenced its institutionalisation process.

In equator principles (EP) adoption, Wright and Rwabizambuga (2006) studied the corporate strategic desire to maintain corporate reputation and manage institutional pressures by adopting EP using institutional theory. Findings revealed that financial institutions were willing to adopt voluntary codes of conduct "EP" that include requirements beyond the mandatory national regulations, if they would gain reputational benefits from adoption. Additionally, companies that adopted EP were characterised to be existent in institutional environments with civil society group campaigns and substantial regulatory systems. Moreover, such EP adopters mainly had transnational operations and mostly had prominent roles in high-risk project finance agreements, which may adversely affect the corporate reputation if any malpractices from these deals were captured by stakeholders.

Jamali (2010) used institutional theory and an interpretive research methodology to study the views of a sample of MNCs regarding the accountability pressures to adopt international CSR guidelines and initiatives. Jamali (2010) also aimed to provide a better understanding to the strategic responses for international CSR guidelines and initiatives adoption and to provide preliminary empirical insights into the institutional pressures for MNCs' adoption. Results showed that MNCs used elements of conformity and resistance in their strategic responses. Perceptions of high legitimacy and consistency made corporate strategic responses to address conformity. Resistance came with perceptions of low efficiency, low coercion, and moderate diffusion. Thus, Jamali (2010) concluded that corporations strategic responses where inclined by symbolic conformity, using decoupling or avoidance strategic responses. Additionally, corporations were found to undertake changes in the formal structure to show conformity

while not undertaking necessity conformation actions in its internal operations, suggesting that majority of firms in the sample responded in a ceremonial manner. MNCs were continually examining the institutionalisation of international CSR guidelines and initiatives and reacting accordingly.

Cetindamar and Husoy (2007) studied the reasons for UNGC participation and its impacts on corporate performance. A questionnaire including 60 questions was sent to a sample of 113 companies (adopting UNGC) and received 29 responses. Survey results showed that corporations participated in UNGC to show their commitment to sustainable development. Moreover, corporations attained some economic and ethical benefits from engagement in UNGC. Although UNGC participants envisaged better corporate image and enhanced network capabilities, its adoption did not result in substantial cost savings. Cost savings were, therefore, suggested to be attained by the development of more environmentally friendly technologies.

Perez-Batres et al. (2011) employed institutional theory to investigate the regulative, normative and mimetic factors of UNGC participation, among a sample of 394 large companies from 12 European and South American countries in 2007. Regulative mechanism was studied using a dummy variable of 1 for Europe and 0 for Latin America, as it was hypothesised that regulations are stronger in Europe to Latin America. Both the number of local NGOs and local universities were used as proxies for the normative factors. Listing on New York Stock Exchange (NYSE) was used as a proxy for mimetic factors. They argued that companies included in NYSE are highly visible to global businesses, and other firms will try to imitate these trustworthy companies in seeking legitimacy. The results showed weak evidence on regulative pressures existence (i.e. European corporations marginally more likely to participate in UNGC to these from Latin America). Instead, normative and mimetic factors were both explaining UNGC adoption. While the number of universities was positively

related to UNGC participation, the number of NGOs was insignificantly related to UNGC participation. The study implied that the larger existence of universities in a society help train and educate entities and make them more able to better understand their sustainable development role in the society. NYSE inclusion was positively related to UNGC, suggesting that corporations may adopt UNGC for legitimacy reasons.

Delmas and Montes-Sancho (2011) studied the national regulative and normative factors affecting the adoption of the ISO 14001 in a panel of 139 countries between 1996 and 2006. The study showed that regulative and normative forces can work against one another at the early phases to the standard. However, in the following phases of adoption, both regulative factors and normative factors related to the diffusion of other management standards (as ISO 9000) become of more importance.

In sum, literature on international CSR guidelines and initiatives adoption studied wider institutional factors. It was found that firms may facilitate mimetic isomorphism by imitation of peers (bandwagon effect) (Nikolaeva and Bicho, 2011; Perez-Batres et al., 2011). Such effect is likely to occur when such adopted practices are expected to enhance reputation (Wright and Rwabizambuga, 2006; Nikolaeva and Bicho, 2011) and legitimacy (Perez-Batres et al., 2011). Hence, corporations may adopt practices that are voluntary and beyond regulatory requirements to differentiate themselves to peers. Additionally, corporations were found to either follow the practices or resist it, based on the level of coercion and diffusion (Jamali, 2010). In all of these studies, corporations seemed to follow the emergence of international CSR guidelines and initiatives and adopted these new practices when they became more popular. The chief difference between IR and other international CSR guidelines and initiatives is that IR was developed through corporate practices prior to IIRC formation, while all international CSR guidelines and initiatives were created and promoted by certain organisations. Normative isomorphism included the roles of civil society groups,

NGOs (Wright and Rwabizambuga, 2006; Perez-Batres et al., 2011) and Universities (Perez-Batres et al., 2011) in the society and its reflection on corporate adoption. Regulatory strength was found to have a weak effect on international CSR guidelines and initiatives adoption (Perez-Batres et al., 2011), especially within its early diffusion stages (Delmas and Montes-Sancho). Adoption may also be motivated by potential financial and ethical benefits (Cetindamar and Husoy, 2007). Findings of Brown et al. (2009) about the power tensions in GRI development can be linked to IIRC's current situation with the existence of powerful stakeholders in the IR development process.

2.4.3 Literature review on sustainability reporting adoption

Determinants of adoption of sustainability reporting on a country level were also studied in prior research. Cormier et al. (2005) used a multi-theoretical perspective to study the effect of various factors on environmental disclosure quality in a sample of large German companies in 1992-1998. Institutional factors studied were corporate imitation to each other practices (mimetic isomorphism) and corporate routines. The sample was divided into two periods 1992-94 and 1995-98 and the imitation was determined by observing the residuals of both groups. Since the residuals decreased in the second group, it indicated that practices are converging overtime and imitation exists. Routines were related to corporate norms of producing environmental disclosures, and measured by adding a lagged disclosure explanatory variable. Results also indicated that the routines were positively related to the level of environmental reporting.

Amran and Haniffa (2011) used institutional theory to examine the determinants of sustainability reporting in Malaysia using a sample of 201 listed companies. Regulative factors included the proportion of government ownership in companies, the extent of corporate dependence on governmental projects and contracts, the proportion of foreign ownership and the existence of foreign business associates. Normative factors included

winning the NACRA awards[37], association with the BCSDM[38], company being an associate or subsidiary, top management having experience and education abroad and corporations with a CSR mission and report. Mimetic factors included industry membership and parent company discloses CSR. The study used an OLS multiple regression model. The results indicated that companies dependent on governmental projects and contracts, receiving NACRA awards, having CSR goals and missions and working in plantation and mining were more likely to publish sustainability reports. Moreover, firm size was positively associated with producing a sustainability report. Thus, the results suggested that the three institutional factors regulative, normative and mimetic contribute towards driving sustainability reporting in Malaysia.

Kim et al. (2013) explored institutional factors that shape CSR practices in South Korea, using 30 interviews with corporate executives, managers, CSR professionals, academics, observers and internal and external stakeholders. The study also triangulated the interviews with qualitative data from observations and archival documentation. Kim et al. (2013) found that South Korean firms face strong regulative pressure from the local authorities (e.g., the Global Compact Network Korea, 2010), suggesting that CSR is a quasi-tax. Hence, companies increased their CSR budgets by pulling the monies that was originally allocated to political donations, to minimise the political pressure. Alternatively, international pressures impacting South Korean firms adopting international CSR guidelines and initiatives (as GRI and ISO26000) or joining sustainability oriented groups (as DJSI or FTSE4Good), resulted in a slight diversion from the short-termism to a longer sustainability focus. Cognitive factors were rather conflicting. The Confucianism notion of virtue and financial crises directed towards a more sustainable version of CSR. Conversely, the short-term public relation and the philanthropic version of CSR created a more short-termism CSR focus. Thus, MNCs

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[37] NACRA awards denotes to the National Annual Corporate Report Awards, which was highlighted to be one of the key drivers of Malaysian CSR development.
[38] BCSDM is the Business Council for Sustainable Development Malaysia.

seeking to provide a strategic CSR version has to do it furtively. Kim et al. (2013) reported that Korean CSR is in the shade between implicit and explicit CSR. Hence, domestic regulatory pressures and international regulatory pressures both enforce explicit CSR. Alternatively, Confucianism notions of right and wrong and virtue have enforced implicit CSR behaviours.

In sum, these studies showed that institutional factors may differ in each context and that their interaction can help form the corporate CSR focus. Kim et al. (2013) showed that while the regulative, normative and mimetic factors may drive CSR, it can work against each other. They found that Korean companies favour short-term public relations CSR over long-term due to the interaction of various institutional factors. Short-term focus was promoted by the national regulatory sphere, corporate financial focus and CSR rating system based on the amount of donations promoted short-term CSR. Adversely, international pressure from CSR standards and groups, cultural notion of virtue and financial crisis contributed to a more long-term CSR focus. Amran and Haniffa (2011) found that Malaysian companies engaging with government projects, having CSR mission statements and accredited for the CSR reporting were more likely to produce sustainability reports. Adversely, they found that institutional factors seem to work with each other towards driving sustainability reporting. Cormier et al. (2005) found evidence that German companies imitated CSR practices of one another.

Having summarised the literature review on the adoption of IR and other CSR practices, the next section provides the hypothesis development for institutional factors on a macro and meso level that are expected to affect IR adoption.

2.5 Hypothesis development

The question as to why corporations behave in a socially responsible manner and report on that behaviour can be understood through the study of institutional factors including, mimetic and associative behaviour among the companies, norms defining the appropriate corporate

behaviour, the existence of NGOs to monitor the corporate behaviour, and public and private regulation (Campbell, 2007). Mimetic and associative behaviour occurs when corporations model the reputable organisational practices from rivals in the field (Meyer and Rowan, 1977; Scott, 2008). Norms defining appropriate corporate behaviour in a field involve professional expectations and networks (DiMaggio and Powell, 1991b). Regulation involves formal and informal pressures exerted by institutions on companies as a result of the organisational resource or cultural dependency in the social field the company functions (DiMaggio and Powell, 1991b). Thus, exploring institutional factors will enrich the study of diffusion of practices, especially when such practices are ambiguous or newly formed (Humphreys, 2010).

Drawing on insights from the preceding literature and theory review, this section develops the hypothesis for the entire field whereby "collective rationality" (Scott, 2008, p. 217) is formed around IR, from firms (mimetic isomorphism), NGOs, environmental performance and professional associations and monitoring (normative isomorphism) and governmental regulations (regulatory pressure).

2.5.1 Mimetic factor

Jennings and Zanderbergen (1995) suggest that adoption of newly formed environmentally responsible practices is more likely to be influenced by mimicry than normative and regulative factors. They claim that this may hold especially if such practices offer competitive advantage and are developing to be an industry or field norm. Palenberg et al. (2006, p. 20) assert that competitors and mimetic pressure was the second most important reason for adopting non-financial disclosures. Below is the hypothesis development for the mimetic isomorphism.

2.5.1.1 IR density (IRD)

DiMaggio and Powell (1991b) contend that new organisational activities may be established as some organisations within the organisational field initiate new innovations that are expected to improve performance and/or provide survival in uncertain or crisis-driven situations. An increasing number of companies are disclosing on their social and environmental activities in their annual reports, despite the fact that there is no clear agreement by academics and the accounting profession as to why companies disclose such information (Hackston and Milne, 1996). Institutional theory scholars (DiMaggio and Powell, 1991b; Meyer and Rowan, 1977; Scott, 2008) assert that as new practices are ambiguous and their benefits (e.g., increase in profitability) cannot be easily identified and communicated, companies are more inclined to adopt such practices based on the density and reputation of previous adopters, and not based on economic decisions. Institutional pressure stems from the corporate environment including peer pressure and competition, which result in facilitating corporate socially responsible behaviour (Matten and Moon, 2008). Such behaviour is often referred to as institutional isomorphism, contagion, bandwagon effect, and herd behaviour in accordance to the institutional field (Nikolaeva and Bicho, 2011).

As more organisations employ certain practices and the more these organisations are framed in their fields as reputable, the more these practices become taken for granted, where non-adopters may be seen as lagging and abnormal (DiMaggio and Powell, 1991b; Rosenkopf and Abrahamson, 1999). Such level of saturation and diffusion of practices is by far less apparent at this stage of IR; whereby IR is still in its early stages of emergence and diffusion (Eccles and Krzus, 2010).

DiMaggio (1988, p. 14) asserts that new practices and institutions arise when they are seen actors as an 'opportunity to realise interests that they value highly'. Burritt (2012) contends that "integrated reports are expected to replace annual reports as the foundation for accountability" (p. 391). IR also is accompanied with showing the management decision

making with respect to corporate environmental, social, governance, economic and future outlook (Burritt, 2012; Eccles and Krzus, 2010; Adams and Simnett, 2011; IIRC, 2011). This methodological integration is a vital element in factoring successful environmental and social performance accountability (Burritt and Schaltegger, 2001; Schaltegger and Burritt, 2006), which may be achieved through bonds between sustainability accounting and IR (Burritt, 2012).

Given the trade-off between uncertainties about the direct benefits of CSR, and alternatively its existence as an integral part in corporate actions, IR is considered to bring changes in corporate management and performance (Eccles and Krzus, 2010) by shifting from marginalised CSR to be placed in the core of business practices (White, 2005a). Additionally, sustainability reports according to the current GRI G4 guidelines (or former guidelines G3, G2 and G1) were not able to drive integration and change (Dingweth and Eichinger, 2010). Lodhia (2104) assert that IR is viewed as a communication tool to articulate the business model, strategic and operational aspects and governance. Thus, IR may be viewed by rival corporations in an organisational field to induce valued interests. Gaining momentum, other rival companies will start incorporating such new practices. Hence, the first hypothesis follows:

H1: The higher the proportion of IR adopters within an industry, the higher the likelihood of IR adoption by other companies in the same industry.

2.5.2 Normative factors

Normative frameworks are meant by setting the standards for, and encourage conformity to, corporate practices and behaviour that are thought acceptable (Campbell, 2006; 2007). Thus, corporations become more inclined into role like expectations of acting in socially responsible ways and they are required to confirm with the expectations to remain socially relevant (Brammer and Millington, 2004; 2006). The normative values are established by

various social actors including NGOs, media, educational and professional associations and social movement organisations (Muthuri and Gilbert, 2011). In this study, normative factors as potential drivers of IR adoption are studied at both organisational field (DJSI inclusion and GRI adoption) and societal (NGOs and environmental performance) levels.

2.5.2.1 Organisational field

Within an organisational field level, normative mechanisms are identified in actors' professionalism (DiMaggio and Powell, 1991b). Scott (2008) states that organisational field is the least employed in social studies, yet the level of high significance to institutional theory.

2.5.2.1.1 Dow Jones Sustainability Index (DJSI) inclusion

As noted earlier, normative values are stimulated by various actors including professional and business associations. DJSI is one of the prominent sustainability indexes that was launched in September 1999 and has a global reach (Fowler and Hope, 2007; Nikolaeva and Bicho, 2011). DJSI and other sustainability indexes (including FTSE4Good and Domini Social Index) have been advanced by reputable organisations and are laying particular attention to shareholders investment in companies adhering to and enforcing sustainable development issues (Lopez et al., 2007). It is, however, shown that DJSI is more elaborative to other indexes with respect to sustainability issues (SustainAbility, 2004).

DJSI includes 10% of the leading Dow Jones Global Index (DJGI)[39] firms and top 20% of regional Dow Jones Indexes with regard to their corporate responsibility and sustainability performance (Lopez et al., 2007; Fowler and Hope, 2007). Thus, Fowler and Hope (2007) postulate that DJSI has a tendency to include larger firms given the process for which companies are to be included.

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[39] DJGI is comprised from the largest 2,500 companies in terms of free-market float capitalisation (Fowler and Hope, 2007).

Potential participants have to annually fill in a comprehensive questionnaire measuring corporate economic, environmental and social issues (Lopez et al., 2007; Fowler and Hope, 2007). The concepts and issues encompassed within the DJSI questionnaire are based on Sustainable Asset Management (SAM) research (Fowler and Hope, 2007), in line with GRI and UNGC principles (Lopez et al., 2007) and are based on feedback from various third party consultants, NGOs, international bodies and academics (Fowler and Hope, 2007, p. 247). Furthermore, DJSI index measure is developed for every corporate activity (Lopez et al., 2007). For these reasons, a large number of European firms are using these measures developed by DJSI in compiling their reporting on sustainability issues (Lopez et al., 2007).

By disclosing on social and environmental issues in this depth, Lopez et al. (2007) argue that the information disclosed becomes part of corporate management and is induced in its strategies. Thus, to attain sustainable development, corporations have to manage the interrelated environmental, social, economic, cultural and political aspects and not consider them independently (Sage, 1999; Jensen and Berg, 2012). Ricart et al. (2005) found that DJSI top companies in various sectors incorporate sustainability development issues into board meetings to more traditional issues, which in turn can aid into better decision making (Lopez et al., 2007). Ricart et al. (2005) also found that DJSI top companies get involved in stakeholders' dialogue, embed sustainability development issues within the strategy and evaluate sustainable performance. By so doing, DJSI top companies' activities and practices are tangent to IR in the sense that sustainability issues are integrated into the business strategy (Jeyaretnam and Niblock-Siddle, 2010). Moreover, such embedded sustainability practices are then reflected in an integrated report as an output (Eccles and Krzus, 2010).

Normative practices and frameworks set by various DJSI members encourage conformity to acceptable corporate behaviour (Campbell, 2006; 2007). To give examples, Novo Nordisk-listed as DJSI top member in the healthcare industry in 2005 and 2007- developed a system to

control the financial, environmental, social and governance strategic priorities. It also adapted the financial reporting principles from Sarbanes-Oxley Act to non-financial reporting (Dey and Burns, 2010; Jeyaretnam and Niblock-Siddle, 2010). Similarly, Philips- listed as DJSI top member in the personal and household industry in 2003-04 and 2007- integrated sustainability practices into its corporate strategy and embedded it in numerous business operations including: research, design, logistics, manufacturing, supply management and HR (Braaksma, 2010).

Galaskiewicz (1991) showed that corporations are inclined to act in socially responsive ways if the normative institutions are set in a way that builds a suitable set of motives for enhancing that responsible behaviour. Thus, corporations are more likely to act in socially relevant ways due to getting socialised into role-expectations (Brammer and Millington, 2004; 2006). Consequently, the existence of normative pressure due to the high expectations concerning corporate sustainability reporting and integrated practices would induce companies being included in the DJSI into seeking to enhance their reporting practices. Hence, based on the preceding discussion, the hypothesis is stated as:

H2: Companies included in Dow Jones Sustainability Index are more likely to publish Integrated Reports.

2.5.2.1.2 GRI adoption (GRIAD)

GRI was established in 1999 and, since then, developed to become the world's most widespread framework adopted by businesses (Nikolaeva and Bicho, 2011, p. 136; Brown et al., 2009; Adams, 2004). The prior postulate is evidenced if measured by rate of uptake, comprehensiveness, visibility, and prestige of adopting the guidelines (Brown et al., 2009, p. 571). GRI was initiated due to the need for a unified CSR reporting system and it is based on the TBL concept (Nikolaeva and Bicho, 2011). Thus, GRI aided in converting the notion of

TBL[40] that was raised by Elkington (1997) into reporting (Eccles and Serafeim, 2011). GRI was developed to help companies and organisations to report on their social, environmental and economic performance as well as to widen their accountability (Moneva et al., 2006). However, as a step further, IR employs an integrated version of the TBL, whereby the company is looking at the interrelations of the sustainability, governance and financial aspects in the corporate strategy, actions and decision making processes.

The pressure of losing organisational legitimacy may lead to isomorphism through adopting industry standards, codes of conduct and guidelines (Muthuri and Gilbert, 2011; Levy and Kaplan, 2008). Hedberg and Malmborg (2003) found that companies were using GRI guidelines as it imprints more credibility to the CSR reports. It was also useful to use GRI guidelines as it provides a template to outline the report (De Villiers and Alexander, 2014; Hedberg and Malmborg, 2003). This may be derived from the lack of agreement on what constitutes socially and environmentally responsible practices (Terlaak, 2007). Therefore, Bebbington et al. (2009) argue that codifying CSR elements contributes to forming a norm-like agreement and a sanctioning process.

Moneva et al. (2006) pointed out that GRI at its current stage failed to integrate the economic, environmental and social dimensions of sustainable development. However, Hedberg and Malmborg (2003) marked that adopting GRI guidelines helps organisations to learn about themselves and envisage any improvements and impediments. GRI guidelines gives room for corporations to describe their sustainability goals, policies and management practices (Nikolaeva and Bicho, 2011; Kanzer, 2010). Burritt and Schaltegger (2001) and Schaltegger and Burritt (2006) argue that such methodological integration in corporate reporting is an essential element for successful performance accountability. Although the adoption of GRI produces a disconnected reporting of TBL, GRI provides the flexibility for improvements on

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[40] TBL was outlined in 2.2.2.

reporting. Thus, companies may redesign their reporting by thinking about the connections between these interrelated reporting aspects. Hence, a company involved with adopting GRI reporting practices and understanding its practices may be able to demonstrate the interrelations in economic, social, environmental and governance aspects and provide an integrated report. Therefore, the hypothesis is stated as:

H3: Companies adopting GRI guidelines are more likely to publish Integrated Reports.

2.5.2.2 Country level

Different societal norms can affect the organisations operating under such varying norms (Matten and Moon, 2008). Hypothesis development for country level normative factors affecting IR adoption is provided below.

2.5.2.2.1 Number of NGO's scaled by population per country (NGOs)

It is argued that NGOs have recently gained status by reshaping the business landscape (Perez-Batres et al., 2011) via counterbalancing business and global capitalism (Scholte, 2000). NGOs are seen as powerful mediators to bringing change in the context of CSR (Guay et al., 2004; Arenas et al., 2009). Using various influencing mechanisms, NGOs may potentially induce substantive influence and change over both investment funds and corporate management, strategy, governance and practices (Doh and Teegen, 2003). Consequently, NGOs developed as a normative force to business landscape (Perez-Batres et al., 2011) that is able to develop power, urgency, and legitimacy (Doh and Teegen, 2003).

NGOs use many tactics that can vary from partnering with corporations (Perez-Batres et al., 2011) to directly appealing to the companies, demonstrating against them, exercising pressure on the government to enhance corporate behaviour and bringing public attention to red flags in corporate practices through mobilising media campaigns (Keck and Sikkink, 1998). For instance, Conversation International, an NGO working in the field of nature and global

biodiversity, partnered with Starbucks to harvest "shaded coffee", in order to protect from deforestation in the Chiapas jungle in Mexico (Austin and Reavis, 2002).

Wapner (1997) cited in Doh and Guay (2006, p. 67) contends that when NGOs pressure on governments and international organisations, they are shaping the process of global governance. For example, the International Corporate Governance Network was formed by large institutional investors to enhance corporate governance and disclosure standards in countries with special care to developing countries (Porter and Kramer, 2002). In instances of perceived lack of regulations in respect to providing labour, community and environmental protection, NGOs may get into this regulatory space both at a local and international level (Moon and Vogel, 2008). Jamali and Keshishian (2009) state that during Lebanon's civil war, NGOs stepped into the vacuum to provide activities as education, health care and emergency relief.

Campbell (2007) argues that NGOs efforts' being successful is contingent in part upon the political institutions through which they function. More specifically, Levy et al. (2010, p. 88) contend that "NGOs are inherently constrained by the structural power of wider institutions and by the compromises required to initiate change." For example, Skouloudis et al. (2011) state that NGOs in Greece were hardly consulted in the building and implementation of environmental policy, whereby the state exercised its normative and legalistic stance. However, due to globalisation, national governments becomes less stringent and capable to control the capacity of NGOs in screening and criticising corporate actions and behaviours, making corporations more likely to behave and report their actions in responsible ways (Fung et al., 2001 cited in Campbell, 2007, p. 957).

NGOs are growing in existence in the institutional field within which companies operate and are becoming effective in promoting corporate socially responsible actions (Doh and Guay, 2006; Teegen et al., 2004; Delmas and Toffel, 2004). NGOs also work with companies to

promote better socially responsible reporting and integrate sustainability within management practices. For example, British utility company[41] collaborated with an environmental NGO to aid in developing their key performance indicators (Adams and Frost, 2008). Furthermore, Eccles and Saltzman (2011) argue that NGOs direct both investors and companies into broader social and long-term context. They also argue that NGOs would encourage and mobilise investors, stock exchanges, industry associations and various groups to prompt IR and more sustainable practices among companies. NGOs stress issues as environmental protection, equality, collective welfare and societal impacts, which are highlighted under IR (van Bommel, 2014). Thus, it can be argued that as the number of NGOs increase in a region, the chances for a company being screened and assisted to report in a more interconnected manner to show and explain how the company operates (produce an integrated report) would increase. Hence, the hypothesis is stated as:

H4: The higher the number of NGOs in a country the higher likelihood of IR adoption in that country.

2.5.2.2.2 National environmental performance

Corporate sustainability practices, transparent reporting and ethical behaviour are materially related to the country's institutional environment, societal norms, routines and values concerning CSR (Fransen, 2013; Freeman and Hasnaoui, 2011). Kim et al. (2013) reported that normative institutional pressures enforce an implicit behaviour of CSR. In fact, country norms are found to affect CSR level and elements emphasised (Sotorrío and Sánchez, 2008; Chen and Bouvain, 2009). Campbell (2006) and Delmas and Toffel (2004) assert that national normative institutions affect the cognitive beliefs and mind-sets that, in turn, influence the possibility of companies engaging in CSR practices. For instance, Sotorrío and Sánchez (2008) found that greater attention to CSR issues by different European institutions resulted in higher normative effect, which explains the higher level of CSR behaviour in

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[41] Company name kept anonymous in the study

European countries to North America. Moreover, Doh and Guay (2006) show that the government and NGOs in Europe strongly influenced companies to change the pricing of HIV/AIDS drugs in South Africa. The US government, however, had a weaker effect and NGOs supported the change but could not influence corporate decision making.

The environmental performance index (EPI) used as a proxy for the normative differences includes important elements that can explain the different emphasis between countries. EPI is a composite measure of indicators that together captures the national environmental schema (Hsu et al., 2013).[42] Topics such as climate change, air and water quality, emissions and energy use are addressed differently on a national level, and result in differences in action among companies in different institutional environments (Doh and Guay, 2006). For example, Doh and Guay (2006) show that due to the relaxed institutional environment on emission reductions in the US and its refusal to sign the Kyoto agreement, companies resorted to buy tradable rights in developing countries. Adversely, the stronger civil society support to the emission reductions in European countries stimulated corporations to seek practical targets to reduce emissions (ibid.). Thus, it is expected that companies will adhere to the environmental norms (Kostova and Roth, 2002; Galaskiewicz, 1991), and would therefore embed these environmental and social issues within its mainstream reporting (Matten and Moon, 2008; Jensen and Berg, 2012).

Taken together, Kolk and Perego (2010) assert that corporations working in national environments with greater emphasis on sustainability will place emphasis on showing their accountability and transparency. Additionally, normative country differences may result in differences in CSR uptake, appropriation and expression (Blasco and Zølner, 2010). From the previous, it can be postulated that country environmental concern level would affect

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[42] EPI is meant to capture the environmental, socio-economic and institutional conditions related to environmental sustainability and performance by looking and comparing the national environmental conditions (Hsu et al., 2013).

corporate establishment of reports. Companies may seek to align their societal and environmental practices to the societal norms and provide it in an integrated manner in its mainstream reporting. Hence, the hypothesis is developed as:

H5: There is a positive association between the environmental performance index score in a country and the likelihood of IR adoption in that country.

2.5.3 Regulative factors

States mainly set hard regulations that act as a regulative mechanism for CSR reporting (Campbell, 2006; 2007; Marquis et al., 2007). Thus, the following discussion focuses on the hypothesis development of the regulative factor proxies (CSR and Stakeholder Orientation Laws) which could influence the IR adoption.

2.5.3.1 CSR laws

Government regulation concerning CSR takes various forms and originates from regulatory bodies at different levels (Buhmann, 2006).[43] Additionally, government regulations may include formal laws or take a softer form as recommendations for guiding reporting and practices (ibid.). Kagan et al. (2003, p. 61) outline that regulatory laws may be seen as a "deterrence mode" of firm behaviour, whereby firms would reduce their impacts and work in a more responsive manner if non-compliance is believed to be detected and penalised. Conversely, it is thought that regulation may take a more flexible and cooperative stand, which may yield better compliance if the regulatory body can impose sanctions on companies failing to comply (Scholz, 1984; Gunningham and Grabowsky, 1998). Kagan et al. (2003) argue that in both cases, it is expected there will be a positive correlation between CSR laws and environmental performance for actors. Likewise, Campbell (2006) emphasise that regulative pressures in CSR would positively drive companies to report in a more socially

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[43] Government regulation of CSR may be at local (e.g., municipal), regional (sub-state), national, supra-national (as EU) and international (as OECD).

responsible manner. CSR legislation may also be seen and understood beyond the legal requirements (Buhmann, 2006), where the country's regulations and laws concerning CSR disclosure mirror the societal expectations pertaining CSR issues (Kagan et al., 2003).

In contrast, there are views that regulative pressures affect sustainability negatively. Juerissen (2004, p. 88) implies that companies in the field have to respond to the external factors, therefore "there is a risk that companies may lose sight of their individual responsibilities in this network of shared responsibilities." Wright et al. (2005) report that regulatory changes may lead to higher uncertainty and volatility; therefore, creating diverse organisational actions against the social regulatory reforms (Arya and Zhang, 2009). Given the two conflicting arguments, the hypothesis is stated as:

H6: There is an association between existence of CSR Laws in a country and the likelihood of IR adoption in that country.

2.5.3.2 Stakeholder orientation (Labour protection) laws

It is argued that society's expectation about corporate reporting and practices are framed by institutional, legal and cultural aspects (Williams and Aguilera, 2008). Jones (1999) shows that firms are likely to engage in social responsibility and stakeholder management in a national system that provide legislations for workplace safety and community protection. Additionally, in countries that value social needs highly, solid employee protection is prevalent (Jackson and Apostolakou, 2010). Although labour protection represents one of various dimension of CSR, Dhaliwal et al. (2012) contend that labour protection laws are likely capturing the overall environment of protecting stakeholders' interests in a country.

Corporations may often use CSR disclosures as a strategic response to enhance their value and mitigate pressures arising from corporate stakeholders (including employees) (Jackson and Apostolakou, 2010). Thus, Aguilera and Jackson (2003) assert that stakeholders as well as managers and shareholders shape the governance of the company and the reporting

practices. IR takes a multi-stakeholder and long-term perspective in reporting, to reduce inequalities and get insights from various stakeholders (Eccles and Krzus, 2010). It would, therefore, be suggested that companies working in such stakeholder institutional environment will be more inclined to bring the stakeholders interests and reduce inequalities as intended by integrated reports. Therefore, the hypothesis is stated as:

H7: There is a positive association between existence of stakeholder orientation laws in a country and the likelihood IR adoption in that country.

2.5.4 Control Variables

The study controls for the possible effects of both firm characteristics (size, profitability, leverage and industry dummies) and country characteristic (Legal origin) as identified in prior CSR studies.

2.5.4.1 Size

In numerous studies, the relationship between CSR or more generally narrative disclosure and size was positive (e.g., Cowen et al., 1987; Belkaoui and Karpik, 1989; Patten, 1991, 1992; Trotman and Bradley, 1981; Hackston and Milne, 1996; Haniffa and Cooke, 2005). Conversely, the relationship was found insignificant in some studies (e.g., Haniffa and Cooke 2002). Size has been the most common determinant (control) in many CSR disclosure related studies, and therefore is included in this study. It was also common to use the natural log of total assets as a proxy to size especially in more recent studies (e.g., Haniffa and Cooke, 2005; Bouten et al., 2012).

In general terms, larger companies are highly visible and have more pressures from different stakeholder groups (Udayasankar, 2008) with demands for more comprehensive and holistic disclosure (Cowen et al., 1987). In fact, the IIRC is constructing its IR framework to be essentially used by large companies (Burritt, 2012). Garcia-Sánchez et al. (2013) contend that

due to larger firms' greater accessibility of resources, they can compile and publish required information than smaller companies. Conversely, Udayasankar (2008) asserts that smaller firms have higher motivation than larger firms to seek a differentiation policy to gain more resources and enable their efficient use.

The relation between size and IR adoption is interesting due to the unique aspects around IR. IR is a process that involves the integration of various corporate aspects in order to show how an organisation created value (Busco et al., 2013b; IIRC, 2013b). It requires the integration of both corporate thinking and units in order to communicate holistic information through its integrated report (Stubbs and Higgins, 2014). Such close bond of interrelations may be set more easily for smaller corporations than very large corporations with diverse, complex and disseminated activities.

Empirical evidence on IR adoption and size is limited. Frias-Aceituno et al. (2012; 2013a; 2013b) included size (measured as Ln total assets) as a determinant of IR. All these studies used the same sample of Forbes 2000, years 2008-2010 and identified integrated reporters based on IIRC (2011) discussion draft on integrated reporting. These studies found a positive association between IR adoption and size. These studies argued that due to the diversity and complexity of operations, visibility to society and financial dependency on capital markets, larger companies would have larger benefits from adopting IR and increasing their disclosures. Although some of these arguments that came in Frias-Aceituno et al. (2012; 2013a; 2013b) contrast with prior studies, their results provide an indication for a positive relationship between size and IR adoption.

2.5.4.2 Profitability

Profitability has been one of the common factors to study the adoption of sustainability initiatives and reporting (e.g., Patten, 1991; Bouten et al., 2012). The relationship between profitability and sustainability reporting was inconclusive in prior studies. With regard to

integrated reporting, Frias-Aceituno et al. (2012, 2013a,) found a weak positive association between IR adoption and profitability. In contrast, the association was found insignificant in Frias-Aceituno et al. (2013b).

Frias-Aceituno et al. (2012) report that companies with high abnormal profits are less likely to publish integrated reports, because the costs involved in IR may deplete part of their profits. In theory, integrated reporting requires showing corporate stewardship to financial, manufactured, social, human, relationship, natural and intellectual aspects (IIRC, 2013b), which would require a departure from the sole profit maximisation goal (Stubbs and Higgins, 2014). Hence, it can be argued that less profitable companies would favour the production of integrated reports. However, companies with large losses are continuously under pressures to reinforce their financial position. For example, Dey (2007) reported in a case study that due to weak financial performance, Traidcraft Plc decided to suspend its social project. From the previous, the relationship between profitability and IR adoption seems inconclusive.

2.5.4.3 Leverage

Leverage has been commonly used as firm characteristics for corporate disclosure (e.g., Haniffa and Cooke, 2005; Bouten et al., 2012), however the relationship was inconclusive. Bouten et al. (2012) found that leverage was positively associated with the level of social and environmental disclosures in a US sample. Additionally, Elshandidy et al. (2013) reported that higher-leverage firms reported more voluntary risk disclosures, while low-leverage covered the mandatory risk disclosures to show compliance with risk regulations. IR reinforces the integration of various aspects including risks of all types (strategic, financial, sustainability and operational) (IIRC, 2013b; Adams, 2014). It also shows how the company creates and sustains value (Busco et al., 2013b; IIRC, 2013b). While financial risk is considered the primary risk and sustainability risks as secondary (Bebbington et al., 2008), a holistic reporting can reduce corporate reputational risk and enhance decision making

(Adams and Frost, 2008; Bebbington et al., 2008). Although there seems to be a relationship between leverage and the IR reporting claims, the relationship has not been studied before. Therefore, it is hard to specify the direction of the relationship.

2.5.4.4 Legal origin

It is usual to use country level control variables in a cross-country study. In many studies law origin (civil or common) or legal origin (English, French, German, Scandinavian and Socialist) was introduced (e.g., Jensen and Berg, 2012; Frias-Aceituno et al., 2013a; Chih et al., 2010; Collison et al., 2012). Legal origins can explain some country level aspects as investor protection and shareholder/stakeholder orientation (Chih et al., 2010; Collison et al., 2012). Countries with English legal origin have higher investor protection levels, stronger capital markets and greater commitment to shareholders (Collison et al., 2012). The socialist and French are the weakest in investor protection and German and Scandinavian are in between the two extremes (Collison et al., 2012; La Porta et al., 1999). The governments of socialist law origin countries heavily control the economy (La Porta et al., 1999). Civil law origins (which include Scandinavian, French and German legal origins) are more stakeholder oriented (Collison et al., 2012).

The different country orientation towards shareholder/stakeholder may affect the likelihood of corporations initiating such practices. IR is required to provide a holistic depiction that balances and integrates financial and societal aspects related to the corporate activities (IIRC, 2013b; Adams and Frost, 2008). Therefore, it can be expected that IR would be more likely to be adopted in countries with legal systems that provides such balance. Given that the legal origin was not introduced as a variable for IR adoption, it will be interesting to study its effects on the adoption of IR.

2.6 Research design

This section discusses the study sample choice and research design. Firstly, the basis and justification for choosing the sample and the sample size are shown. Secondly, the process of collating the sample and the final sample of integrated and non-integrated reporters are provided. Thirdly, the method used for testing the hypotheses is shown. Finally, the measurement of the response and predictor variables used is given.

2.6.1 Sample selection and justification

IR is at its early stages as far as guidelines developed by key organisational actors are concerned, which makes collecting information about which companies publish integrated reports fairly problematic. The IIRC has just published the first <IR> framework in December 2013. The framework included the IR guiding principles and an overview of the content elements. Similarly, GRI has developed its latest Sustainability Reporting Guidelines (G4) in May 2103 with the aim of providing guidance on IR (Adams and Simnett, 2011; Eccles and Saltzman, 2011). Nonetheless, it only included a section on the relationship between sustainability reporting and IR. Accordingly, it can be viewed that by the end of 2013 there was little guidance to the components of an integrated report and very limited guidance in the years before 2013.

Surveys published from various sources showing examples of integrated reports form another data collection source. ACCA published a survey on the current state of IR practices among Australia's 50 largest listed firms (see: ACCA, 2011). PricewaterhouseCoopers (PWC) published a document on reporting by FTSE350 constituents and showed the signs for IR practices emergence in their annual reports (see: PWC, 2010). Both surveys, however, were country specific and did not mention names of companies producing integrated reports. Therefore, they would not match the study objective.

Similarly, Black Sun published several reports using recent IR examples by 20 firms. Black Sun (2011a) showed a snapshot on how companies combine financial, social, environmental and governance information. Black Sun (2011b) showed examples of progress and IR approaches by the same 20 firms. On a larger scale, Black Sun (2011c) looked at the IR practices of the largest 101 firms by market capitalisation drawn from the G20 countries. A4S (2007; 2009) showed examples from four UK companies and two governmental organisations reporting based on its connected reporting framework. Although these surveys provide valuable insights into the pragmatic practices of firms, they are mainly limited to specific countries and may include few listed and non-listed firms. In general, the companies included in these surveys could hardly represent a reasonable sample to study the determinants of IR adoption and does not answer a very crucial question as to when these companies published their first integrated report. Likewise, few examples and case studies were provided in books discussing IR such as Hopwood et al. (2010b) and Eccles and Krzus (2010).

Another source to resort to is databases. IIRC incepted its "emerging IR database" including integrated reports for 54 companies included in its pilot study for the year 2011 and 2012.[44] On a larger scale, Corporate Register (CR hereafter) runs a fee-based searchable online database called CR Report Directory including reports for listed and non-listed firms and organisations, which includes reports for more than 9,500 companies.[45] CR is linked to IR through running CRRA which awards the best integrated report on an annual basis since 2007. CR identifies integrated reporters in both CRRA and the CR directory based on its own definition for IR.[46] Academics utilised the CR directory to collect data on stand-alone

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[44] The emerging IR database can be accessed via: http://examples.theiirc.org/search?organisation_type=&organisation_region=&organisation_industry=&report_type=&report_year=&fragment_content=&x=11&y=8 (accessed 11/01/2013).

[45] CR is currently having reports for 9616 companies (see: http://www.corporateregister.com/). CR claims that CR Report Directory is the largest online database for CSR, Sustainability and environmental reports around the world: http://www.corporateregister.com/aboutreports.html (accessed 11/01/2013).

[46] "We define an integrated report as one in which a company combines non-financial aspects into their Annual Report & Accounts (AR&As). The best of these reports integrate the financial and non-financial aspects

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sustainability reports, including among others, Dhaliwal et al. (2012) and Simnett et al. (2009).[47] CR has not been used by researchers to collect information about IR companies.

Similar to CR, RobecoSAM proprietary database includes data for the largest 2,500 companies, and identifies integrated reporters as these disclosing their sustainability initiatives and their impact on financial performance in the main section of the annual report (Churet and Eccles, 2014). Interestingly, the analysis, however, does not assess the sustainability sections in the annual report (ibid.).

GRI report list is another database including the companies reporting under GRI per year since 1999 till present. GRI report list has been cited by key academics involved in integrated reports as Eccles and Serafeim (2011) and Eccles and Krzus (2010) to refer to IR companies. Since 2009, GRI introduced a question to its GRI report list on whether the company publishes an integrated report or not on a self-declare basis. Jensen and Berg (2012) used the companies self-declared as integrated reporters (listed and non-listed) on the GRI report list for 2010. Likewise, Garcia-Sánchez et al. (2013) used GRI listings to collect data about self-declared integrated reporters. Therefore, the GRI report list represents a suitable starting point to provide data about the integrated reporters from 2009 onwards. However, it cannot answer the question as to when these companies started producing integrated reports. The GRI report list includes all GRI-based reports (annual/CSR reports) that GRI is aware of and any reports with GRI content index that are added through GRI's international data partners (mainly

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throughout, they do not just include a section on non-financial aspects." See: http://www.corporateregister.com/crra/help/crrahelp.html (accessed 14/01/2013).
Based on their definition, they listed Novo Nordisk 2006 report to be the company's first integrated report. While in fact, Novo Nordisk, which is a well-known icon in developing IR, mentioned on its 2010 Annual report that the first integrated report dates back to their 2004 report (Novo Nordisk, 2010, p. 1).
[47] Dhaliwal et al. (2012) used a sample of 1,297 companies producing sustainability reports from 31 countries over 1994-2007, while Simnett et al. (2009) used a sample of 2,113 companies producing sustainability reports from 31 countries over 2002-2004.

auditing and consulting firms and CSR non-for-profits)[48] or registered by companies themselves (GRI, 2009; 2010b).

Other academics developed some criteria to identify integrated reporters. Frias-Aceituno et al. (2012), Frias-Aceituno et al. (2013b) and Frias-Aceituno et al. (2013a) identified integrated reporters as companies that produced a one or more reports, provided that the reports meet the minimum items required to be considered as an integrated report. The three studies used a sample driven from Forbes Global 2,000 largest international companies' list. Forbes 2,000 list only includes listed companies, which for this reason has an advantage over the GRI report list that also includes non-listed and public agencies. However, using Forbes 2,000 includes large firms regardless to their CSR performance/disclosure and will deliberately exclude smaller listed firms that may have produced integrated reports. Furthermore, Forbes 2,000 included only few companies from the Scandinavian region, Brazil and South Africa which are known to have examples of integrated reporters (see: Eccles and Krzus, 2010).[49] Moreover, the three previous studies did not include South Africa in their sample. Hence, using Forbes 2,000 list would alter the aim of this research by only focusing on IR adoption by the largest international companies instead of the original aim which is to study the determinants of IR adoption in listed companies regardless to their size.

Consequently, to overcome many of the limitations of the data sources available in providing a representative sample, the GRI report list was used. As the GRI report list includes self-declared integrated reporters in 2009 and 2010 only, these self-declared companies were asked to indicate when they published their first integrated report.

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[48] An updated list of these international data partners available at:
http://database.globalreporting.org/data_partners/ (accessed 15/12/2014). An example from KPMG Japan as a data partner is shown at: http://www.kpmg.com/jp/en/knowledge/article/gri-report-list/pages/default.aspx (accessed 15/12/2014).
[49] For more information see Forbes 2,000 map in 2010 at: http://www.forbes.com/2010/04/19/worlds-largest-companies-business-global-2000-10-global_map.html (accessed 16/01/2013).

2.6.1.1 Sample criteria

The conception that an integrated report is confined to the production of one report for all stakeholders annually is debateable. Producing an integrated report in a single document is not a pre-requisite (KPMG, 2011b). For instance, the IIRC's database provides examples of integrated reports, including among others, Coca-Cola Sustainability/CSR report 2012 and AEGON annual review. Coca-Cola's sustainability/CSR report was not the only report produced by the company for 2012; it also published a GRI report.[50] Additionally, AEGON produces an annual report, annual review and a sustainability report, while the annual review was presented as the company's integrated report.[51] Similarly, Hyundai Engineering and Construction Co. won the 1st runner up for the CRRA awards in 2012 in the best integrated report stream for its sustainability report published in 2011.[52] The company also published an annual report in 2011. In sum, the issue of excluding a company from being an integrated reporter based on the fact that the company produced other reports to its integrated report is impractical. Thus, the study included integrated reporters regardless to whether they produced one report or more.

Hoffman (1999) suggested that regulative, normative and mimetic institutions and drivers may shift and vary overtime. Additionally, Matten and Moon (2008) contended that such institutional framework change raises new motives and opportunities for corporations to align themselves with the wider system of responsibility involving the new institutions. For instance, South Africa's JSE listing requirement will have a direct impact on the quantities of integrated reports in South Africa from 2011 and onwards (Gasperini et al., 2012). Moreover, IIRC is exploring IR in its pilot program where over 75 companies from 23 countries are

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[50] Coca Cola's reports can be obtained via: http://www.coca-colacompany.com/our-company/company-reports (accessed 12/01/2013).
[51] AEGON's annual reports can be obtained via: http://www.aegon.com/en/Home/Investors/Reports-and-Other-Publications/Annual-Reports/, annual review at: http://www.aegon.com/en/Home/Investors/Reports-and-Other-Publications/Annual-Reviews/, and sustainability reports at: http://www.aegon.com/en/Home/Investors/Reports-and-Other-Publications/Sustainability-Reports/.
[52] See: http://www.corporateregister.com/crra/?d=2012 (accessed 14/01/2013).

contributing to the development of IIRC's <IR> framework (IIRC, 2012). Due to such impacts, the study covers the period from IR emergence until 2010, whereby companies produced integrated reports on a voluntary basis before these issues became enacted.

2.6.2 Sample selection process

Firstly, IR listed firms in year 2010 were identified using the GRI report list as shown in Table 2.1. As a starting point, GRI list in 2010 included 149 publicly held integrated reporters. 117 publicly held integrated reporters in the GRI 2011 list were added, which have provided their 2010 report in the 2011 list and were not included already in the 2010 list. This resulted in a total IR listed firms of 266 firms in 2010.

Table 2.1: Derivation of listed companies that are GRI reporters in the fiscal year 2010

	All companies (including integrated reporters)	Integrated reporters
All companies on GRI report list (2010)	2,015	237
Less: Non-listed companies and organisations*	1,010	88
= Listed companies in 2010	1,005	149
Add: Listed companies in GRI list 2011 (only companies including their 2010 reports)	364	117**
Total GRI reporters in 2010	1,369	266

* The organisations include universities and public agencies.
** Total integrated reporters (publicly listed and non-listed) in GRI's report list in 2011= 459, Total listed integrated reporters in 2011= 235, out of which 118 were either listed in 2010, or included their 2011 reports.

Following prior research (e.g., Cooke, 1989; Kolk and Perego, 2010; Haniffa and Cooke, 2005), the study used emails[53] and telephone to contact companies to declare when was their first integrated report published (email enquiry shown in appendix 2.1). The benefit of telephones was to be able to collect data in a short period of time (Haniffa and Cooke, 2005). Emails are also resource and time efficient (Lowe and Locke, 2005). In this regard, investor relations and in some cases CSR division email addresses were collected from the corporate websites and were contacted. In some cases, companies required an electronic form to be filled for enquiries. Follow emails (at least once) were sent to non-respondents in order to increase the responses. Telephones were also used to increase the response rate. Firms were

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[53] Emails have been used in the study as a faster means to sending mails.

contacted between end of April and early September 2012. Table 2.2 shows the corporate responses to when they first published an integrated report. Overall 185 companies representing 69.55% of the total population of 266 companies provided a reply to the question.

Table 2.2: Total integrated reporters and final responses

Total listed integrated reporters in 2010	266
Responses	185
Non-responses	81
Response rate	69.55%

Table 2.3 demonstrates the different responses obtained from the firms responding to the question. Overall, 157 firms gave the year for their first integrated report published. Alternatively, 13 companies provided a date beyond 2010. Interestingly, 15 firms showed that they haven't published an integrated report. They were either were not willing to produce an integrated report at this stage or were in the process of producing an integrated report.[54]

Table 2.3: Classification of the responses

IR Responses	185
Published an integrated-report by/before 2010	157
Published/will publish an integrated-report after 2010	13*
Hasn't published an integrated-report	15

*10 Companies published an integrated-report in 2011, 1 published an integrated-report in 2012 and 2 will publish an integrated-report based on GRI 4 guidelines in 2014.

Table 2.4 outlines the final sample utilised for regression purposes. The first column shows the final sample derivation for all companies (integrated/non-integrated reporters). Final sample of integrated reporters is shown in the second column. The number of GRI listed companies in the fiscal year 2010 was 1,369. However, due to missing data the sample had to be reduced by: 70 companies with missing identifier numbers (Sedol codes) in DataStream and Thomson One banker, 61 companies with missing data for one or more variables on DataStream and 2 companies were omitted due to not being given an industry classification benchmark (ICB hereafter) code on DataStream. Another 19 companies belonging to

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[54] Interesting insights from corporate responses and limitations of this sample design are provided in the Limitations, interesting insights and future research subsection.

countries with missing information about their stakeholder orientation laws were omitted. Thus, the final sample included in the regression results was 1217 companies. Moreover, integrated reporters in the sample initially were 157 companies. However, deductions of companies with missing data on DataStream for one or more variables for the period of the study brought the final sample to be 145 companies.

Table 2.4: Final sample

	All companies (IRs and non-IRs)	Integrated reporters only
GRI listed Companies in 2010	1,369	157
Less: Listed companies with no identifier (Sedol code) on DataStream\Thomson One Banker	70	-
Companies in DataStream list	1,299	157
Less: Companies with missing data on DataStream	61	12
Companies with no industry identifier (ICB) on DataStream	2	-
Companies from countries having missing data*	19	-
Final Sample	1,217	145

* Countries that were omitted due to missing data on stakeholder orientation laws variable were: Croatia (2 companies), Estonia (1 company), Saudi Arabia (1 company), Serbia (1 company), Slovakia (1 company), Taiwan (10 companies) and UAE (3 companies) all were non-integrated reporters.

2.6.3 Multivariate analysis

The study explores the determinants of IR adoption over its early development stages using the sample of GRI reporters for financial year 2010. The statistical model to be used is a nonlinear regression model which is designed for binary (limited) dependent variable (Stock and Watson, 2007). This is because the dependent variable IRA is a limited dependent variable with value 1 if the company produced an integrated report in year *t* and 0 if not.

There are various limitations when using an ordinary least squares (OLS) linear regression to fit a binary rather than a continuous dependent variable. OLS regression produces fitted (predicted) values as a linear line that minimises the sum of squared distances between the observed values and the linear approximation (Gujarati and Porter, 2009). Provided that the observed values are only having the values of 0 and 1, linear approximation produces fitted values that can be falling below 0 or above 1, which is not realistic (Long, 1997; Stock and Watson, 2007; Gujarati and Porter, 2009; Wooldridge, 2009). Moreover, the straight line

produced cannot provide a good fit for a binary dependent variable (Long, 1997). Linear OLS model assumes that Pi= E(Y=1|X), meaning that an increase in one unit in X is accompanied by an increase in Y by the unit coefficient of X, creating a marginal or incremental effect of X that remains constant and linear (Gujarati and Porter, 2009; Long, 1997). To overcome the limitations of the OLS model in fitting a limited dependent variable, it has to be substituted by a non-linear cumulative distribution function model (also called an S-shaped curve model) (Gujarati and Porter, 2009)

A binary/dummy/dichotomous/limited dependent variable involves two categories and denotes to occurrence of an event (Long, 1997; Stock and Watson, 2007; Wooldridge, 2009; Gujarati and Porter, 2009). Studies with a binary dependent variable use a logit or a probit regression model (Stock and Watson, 2007). Both models are very similar (Long, 1997; Stock and Watson, 2007), and results produced are generally indistinguishable (Long, 1997, p. 83). Although both models produce different parameter coefficients, they have the same standardised impact of explanatory variables (Long, 1997; Stock and Watson, 2007). The models, however, use different cumulative distribution functions (Long, 1997; Stock and Watson, 2007). The probit model uses the standard normal cumulative distribution function, while the logit model uses the cumulative distribution function for a standard logistic random variable (Wooldridge, 2009; Stock and Watson, 2007). Another difference is that when plotting both models, the logit model will have slightly flatter tails around both values 0 and 1 (Anderson and Aitkin, 1985). Because both models are similar and produce similar findings, Long (1997, p. 83) contends that the choice of one over the other is a matter of convenience and convention, which is not related to theoretical underpinnings. One benefit of logit over probit is that it is fairly easier to compute[55] and interpret (Long, 1997; Stock and Watson, 2007; Wooldridge, 2009). Thus, the study uses the logit model, while also showing the results using probit model as a sensitivity test.

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[55] Current software packages are able to perform computations for both models alike.

2.6.3.1 The logit model

Coefficients of the logit model are best estimated employing the maximum likelihood (Stock and Watson, 2007), which involves maximising the probability of receiving the observed results given the fitted regression coefficients (Long, 1997; Peng et al., 2002). Maximum likelihood estimator is normally distributed in large samples making z-values and confidence intervals of the coefficients constructed in the usual manner (Stock and Watson, 2007; Long, 1997). Thus, hypothesis tests are verified using z-statistic and 95% confidence interval are set as ±1.96 confidence errors (Stock and Watson, 2007).

Odds of an event happening is expressed as the ratio of a probability that an event occur to the probability that the event does not occur (Chen et al., 2013; Gujarati and Porter, 2009). Additionally, the odds ratio is the odds of success for a particular exposure or group to the odds of success for another exposure or group (Chen et al., 2013; Long, 1997) as shown in Equation 1 below.[56] For example, the odds ratio for DJSI inclusion is the odds of success for integrated reporters divided by the odds of success for non-integrated reporters. The odds ratio can take values from 0 to infinity (Long, 1997; Stock and Watson, 2007; Acock, 2008). An odds ratio that is exactly equal to one means that odds for both groups are equally likely and the explanatory variable making no difference (Acock, 2008, p. 266; Stock and Watson, 2007). Odds ratio less than 1 (i.e. between one and zero) means that the odds of the numerator (the group we are interested in) is lesser than the odds of the denominator (the other group). Thus, an increase in the predictor will reduce the odds of the event the study is

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[56] Coefficients of the logit model are expressed in the natural logarithm of the odds ratio which is called the logit transformation or log odds (Acock, 2008):

Logit= ln(Odds ratio)

In its simplest terms the logit function can be expressed as follows, where [P/(1-p)] is the odds ratio for an event occurring:

Logit (p) = log [p / (1-p)]

The logit model for a number of variables X1, …., Xk can be expressed as follows:

Since, $P(y=1|x) = P(y=1|x1, x2, …, xn)$

Logit (pn) = log [p / (1-p)] = $\beta o + \beta_1 X_1 + \beta_2 X_2 +... + \beta_n X_n + u_i$

interested in. Conversely, odds ratio higher than 1 means that as the predictor increases the likelihood that the event will occur will increase.

Equation 1:

$$Odds\ Ratio = \frac{Odds\ 1}{Odds\ 2} = \frac{P1/(1-P1)}{P2/(1-P2)}$$

Several techniques can be utilised to help interpret the model findings and coefficients. There are three main ways: 1) to compute the variable's odds ratio 2) to calculate the predicted probabilities, and 3) to compute the marginal (partial) effect for one or more regressors (Long, 1997). The odds ratio for a coefficient can be computed as exponential of the coefficient $e^{coefficient}$ (Long, 1997; Wooldridge, 2009). The predicted probabilities of an event occurring are computed and plotted for the different values of the independent variable (Long, 1997, p. 64). If the model includes two or more variables - the case in this study- the probabilities cannot be plotted and a choice needs to be made which to present (Long, 1997). This limitation favours the other two techniques instead of computing the predicted probabilities.

Marginal effects- the third technique- is the slope of the probability curve relating a predictor variable xi to P(y=1 |x) (Long, 1997, p. 72). In simpler terms, marginal effects measure the effect on the conditional mean of the dependent variable y of a change in one of the independent variables xi (Long, 1997). Although results of the marginal effect are mainly used with categorical independent variables, the technique is less used in binary independent variables (ibid.). Therefore, Long (1997) contends that odds ratio is a more effective technique for interpreting the logit binary regression model. One main advantage is that the odds ratio is calculated by transforming the coefficients and is easier to interpret than the previous techniques (ibid.). Thus, the odds ratio was used to interpret the results.

Foster et al. (2006) illustrate that there are three broad types of logit regression; each depends on how the study hypotheses are built. In direct (or enter) logit regression, all the independent variables are tested in the regression equation with no preference. This approach is used when it is not hypothesised that there is a ranking of the importance of the predictor variables in the model. Secondly, sequential logit regression is employed when it is hypothesised that predictor variables can be ordered from the most important to the least important in determining the dependent variable. Variables are ordered by the researcher and sequential logit tests the incremental predictive value of all the variables added to the model only including the first variable. Finally, stepwise regression only shows the predictor variables that are significantly related to the dependent variable. In this study, there is no specific preference in the theory for one factor to the other all the variables need to be tested with no order and the direct approach was used.

In panel data studies there is always the issue of deciding whether to use random or fixed effects. There are a large number of different definitions for random and fixed effects (see: Kreft and De Leeuw, 1998).[57] Wooldridge (2009, p. 839) defines a fixed effects model as an unobserved effects panel data model where the unobserved effects is allowed to be arbitrarily correlated with the explanatory variables in each time period. Conversely, in the random effects model the unobserved effect is assumed to be uncorrelated with the explanatory variables in each time period (Wooldridge, 2009, p. 844). Therefore, a decisive factor is to depict the nature of the unobserved effects (omitted variables or error component) and its relationship to the explanatory variables (Allison, 2005).

Omitted variables (or unobserved effects) must be time-invariant variables with time-invariant effects to use a fixed effects model (Allison, 2005). By time-invariant two conditions must hold. The value of the unobserved variable is fixed,[58] and the variable

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[57] However, it is not part of the study to analyse how these definitions are different to each other. These two techniques are discussed in order to choose the appropriate one for the study.

[58] For instance, the value given to gender, 0 for male 1 for female will remain fixed.

continues to have the same time-invariant effects from period to period.[59] If any or both of these assumptions are violated, then the unobserved variable will change from period to period (i.e. the effects from the unobserved effect will be random).

Another factor to consider is the recommendations by Judge et al. (1980), whereby in a panel with large t (number of years) and small N (number of observations per year) there would be little difference between the parameters estimated by each model. Judge et al. (1980) conclude that fixed effects will be preferable here given that it is less biased. However, if N is large and t is small, and the unobserved effects are not correlated with the variables in the model a random effects technique produces unbiased results. Like most other studies, there may (not) be other unobserved effects for other firm or macro characteristics not included in the model. The study only examines the effect of mimetic, normative and regulative isomorphism on a meso/macro level as the primary issue and includes firm characteristics and country level characteristics as a secondary issue. In this study, unobserved effects might potentially include other firm effects that are not included in the model as cross listing, ownership structure, board structure and other variables that may differ per company as the level of complexity of operations or media coverage. Thus, given that the error component (ε) is changing and not correlated with the model variables, a random effects model would provide better predictors to fixed effects. Hence, random effects technique was used in all regressions. However, as fixed effects reduce endogeneity bias, related to omitted variable effect (Nikolaev and van Lent, 2005), the study tests for endogeneity as robustness test.

The logit model employed in this study can be expressed as:

$$IRA = \beta_0 + \beta_1 IRD_i + \beta_2 DJSIIN_i + \beta_3 GRIAD_i + \beta_4 NGOs_i + \beta_5 EPI_i + \beta_6 CSRLAW_i$$
$$+ \beta_7 STAKELAWS_i + \beta_8 LORIGIN_i + \beta_9 SIZE_i + \beta_{10} PROFIT_i$$
$$+ \beta_{11} LEVERAGE_i + \varepsilon_i$$

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[59] For instance, a male observed over a period of 10 years will be assigned a score of 0 every period.

Where:

ε_i = error component
i = the ith observation.

Variables definitions and measurements for the study model are provided in Table 2.5. The regression model includes industry dummies based on ICB industry classification.

Table 2.5: Variable definitions

Variable	Description	Measurement	Source
IRA	IR adoption	1 if the company published an integrated report in year *t*, 0 otherwise.	GRI Report list and query responses.
IRD	IR density	Ratio of the number of within industry IR adopters in year *t* to the total count of firms within the industry sample.	IR adoption year As in Nikolaeva and Bicho (2011)
DJSIIN	DJSI Inclusion	1 if listed in Dow Jones Sustainability Index World Enlarged in year *t*, 0= otherwise.	SAM Group Sustainability Yearbook
GRIAD	GRI Adoption	1 if the company reported under GRI in year *t*, 0 otherwise.	GRI Report List
NGOs	NGOs per country	Number of NGOs per million of population for each country.	Earth trends (http://www.earthtrends.wri.org/) as in Dhaliwal et al. (2012)
EPI	Environmental Performance	Average score ranging from 0 to 100 per country for its national environmental performance.	Yale Center for Environmental Law & Policy (http://epi.yale.edu/previous-work)
CSRLAW	CSR Laws	Existence of CSR Legislation per country per year. 0 no CSR Law, 1 if CSR law exist for listed companies or pension funds and 2 for both.	Mainly from the Hauser Center at Harvard University (http://hausercenter.org/iri/wp-content/uploads/2011/08/CSR-Disclosures-Update-6-27-13.pdf), and also governmental websites and KPMG International Survey of CSR Reporting.
STAKELAWS	Stakeholder orientation laws	Arithmetic mean of 4 components: employment laws index, collective relations law index, social security law index, human rights laws.	First three components from Botero et al. (2004), Human rights law from La Porta et al. (2004)
LORIGIN	Legal Origin	Legal origin for each country: English, French, German, Scandinavian and Social.	La Porta et al. (1999)
SIZE	Total assets	Natural log of the total assets as per Data Stream (WC02999) expressed in Euros.	DataStream
PROFIT	Return on equity	Net income divided by shareholders equity as per Data Stream (WC01651/WC03995) shown in decimals.	DataStream
LEVERAGE	Debt-to-equity	Total debt divided by total equity as per Data Stream (WC03255/WC03995).	DataStream

2.7 Graphical portrayal of IR

A contribution of this study is the portrayal of IR in its early emergence. As Table 2.3 showed, 157 companies declared producing an integrated report and started the first report year of publication.[60] Figure 2-3 shows the number of companies producing their first integrated report each year. Interestingly, only three companies started having an integrated report in 2001, and four new companies embraced IR in 2002. Over the longitudinal period, the number of firms publishing an integrated report for the first time shows three waves. The first, from 2001 till 2006, where a small number of firms started producing integrated reports. Between 2007 and 2008, the number of firms producing an integrated report for the first time almost tripled. The third wave in 2009-10, observed a larger number of firms publishing first-time integrated reports. The waves roughly resemble the three stages of IR development presented earlier.

Figure 2-3: First-time production of an integrated report each year
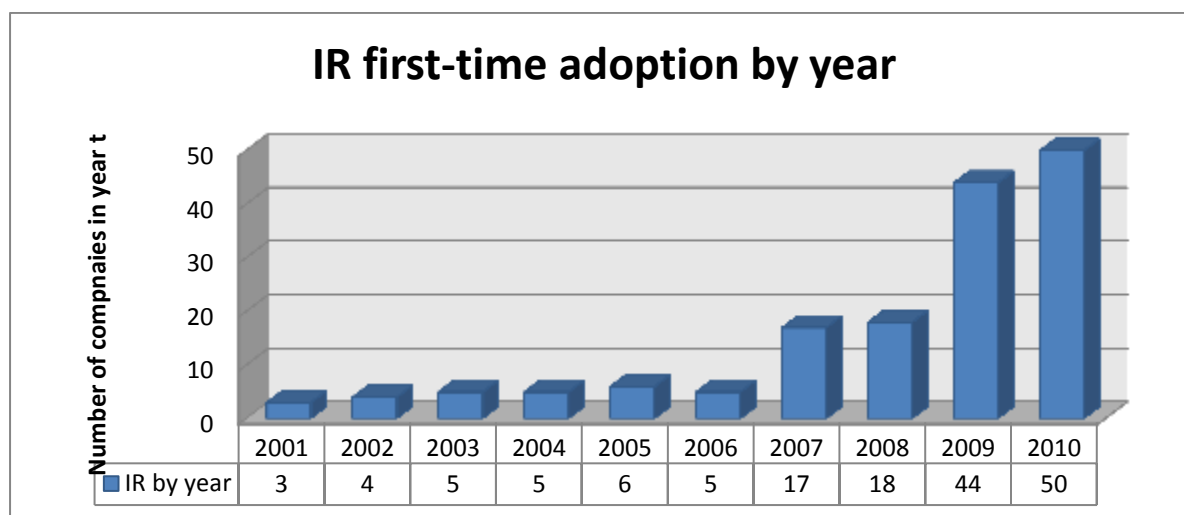
Figure 2-4 shows the cumulative increase of integrated reports from emergence until 2010, which was formed by adding the number of companies newly integrating their reports in year *t* to the companies producing an integrated report in the previous years. As the figure shows,

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[60] 12 companies had missing data on DataStream as shown in Table 2.4. Hence, regression tests are conducted for the 145 integrated reporters

the trend of IR from its emergence till 2010 can be represented by a curvilinear line where the slope of IR adoption is increasing year-to-year. The increasing flow of IR is especially noticed in the last 3 years. Integrated reporters increased by 133% in 2002 (7-3/3), 71.14% in 2003, 41.68%, 35.29%, 21.74%, 60.71%, 40%, 69.84%, and 46.73% through 2004 to 2010 respectively. Thus, IR adoption showed a decreasing rate in the early years of emergence until 2006, but started rising again at fluctuating rates after 2006. Unlike Nikolaeva & Bicho (2011), who showed that the rate of GRI adoption was decreasing, IR adoption seems to be in its early stages as adoption rates were showing, a fluctuating, but increasing tendency.

Figure 2-4: Cumulative representation of integrated reporters each year
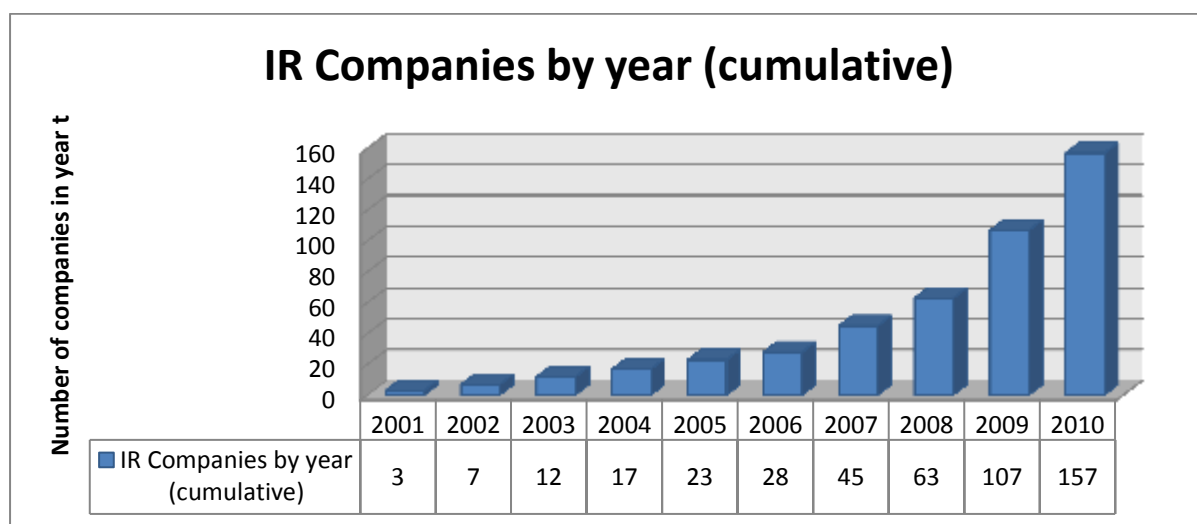
Integrated reports are shown by continent in Figure 2-5 and Figure 2-6. Similar to Figure 2-3, Figure 2-5 shows the first-time integrated reporters each year by continent. A finer classification is provided in appendix 2.2 showing first-time IR adoption by country. IR was first initiated by one South American and two European companies in 2001. Likewise, in 2002, three more European firms and one South American firm produced an integrated report. In 2003, the first Oceania and another four European companies started their first report. The first company from Africa and North America produced an integrated report in 2004. The first Asian company produced an integrated report in 2007. Later in 2009 and 2010, more companies initiated IR, and all continents were represented at varying weights.

While the largest number of first-time integrated reporters in 2009 came from Europe, in 2010, the largest first-time reporters came from South Africa followed by European companies. This shows that some South African companies were experimenting IR before the practice became mandated in 2011. Such IR adoption by South African companies may also be related to the existence of King III report on integrated reporting, that was published in September 2009 (Solomon and Maroun, 2012). Figure 2-6 shows the cumulative representation of integrated reporters each year classified by continent. In 2001-2002 only European and South American companies were adopting IR. Generally, European companies constituted a considerable amount of integrated reporters. However, there was a leap in IR adoption by African firms in 2009 and 2010, and same can be said about North American companies. There was, however, a limited number of North American, Oceania and Asian companies adopting integrated reports over the period.

Figure 2-5: Number of first-time integrated reporters shown by continent and year
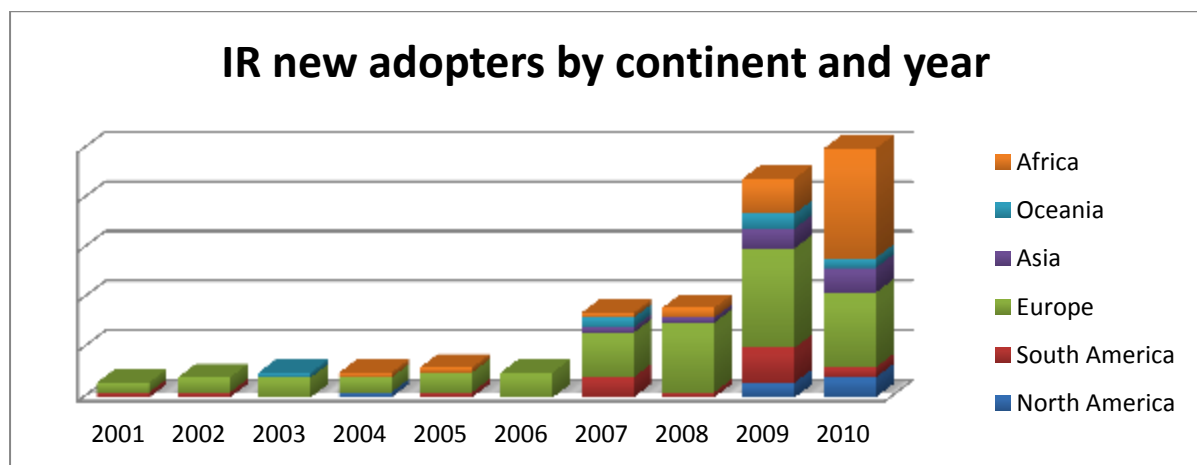
Figure 2-6: Cumulative representation of integrated reporters by continent and year
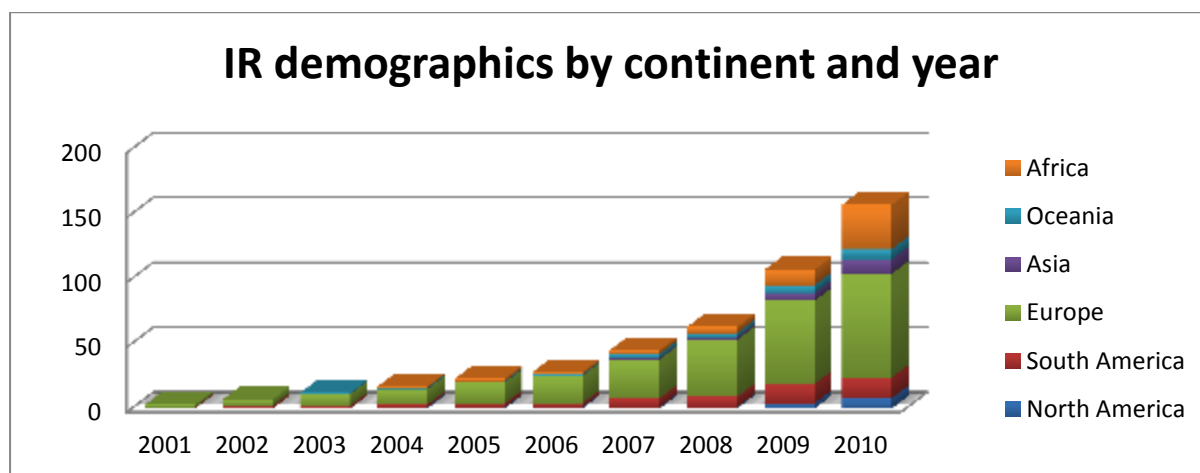
Figure 2-7 sheds more light on IR in year 2010 only (using cumulative figures). European firms had the lion share of integrated reporters making 51% of integrated reporters. This is followed by Africa 22%, South America 10%, 7% from Asia and 5% from both North America and Oceania.

Figure 2-7: Pie chart for IR adoption in 2010 by continent
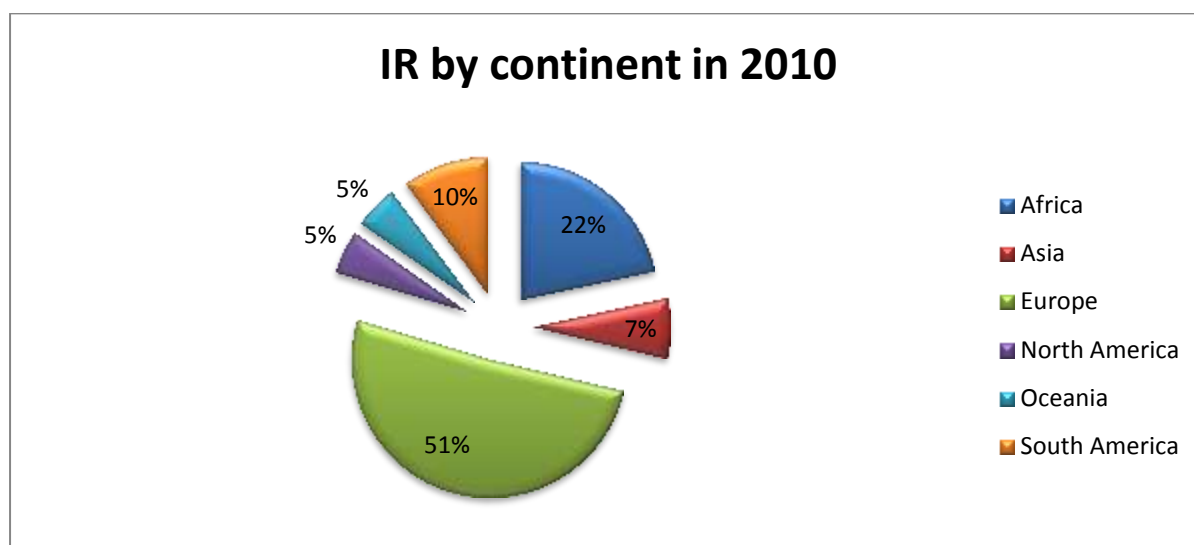
The pattern of development of integrated and non-integrated reporters from 2001-2010 is shown in Figure 2-8. Data for the figure was compiled by tracking the sample 1369 companies (from which integrated reporters= 157) to when they first reported under GRI. Limited number of companies adopted GRI reporting and IR in 2001-2002. In 2003-2005, non-IR increased considerably to that in 2001-2002. Additionally, 2007-2010 exhibited a

steady growth in GRI reporters that can be represented by a straight line. Using percentages, the ratio of integrated reporters to non-integrated reporters was 9.7% in 2001, 15.6% in 2002, and 12.5% in 2003, and consequently from 2004 till 2010 it was 10.9%, 10.22%, 9%, 9.9%, 9.17%, 11.84% and 12.9% respectively. When omitting 2001, the relationship between non-integrated reporters and these producing an integrated report is more like a u shaped concave curve, where it starts with a high ratio in the first few periods, drops in the middle and again increases towards the end.

Figure 2-8: Representation of integrated reporters and non-integrated reporters per year

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Non-IRs	31	45	96	156	225	311	455	687	904	1,212
IRs	3	7	12	17	23	28	45	63	107	157
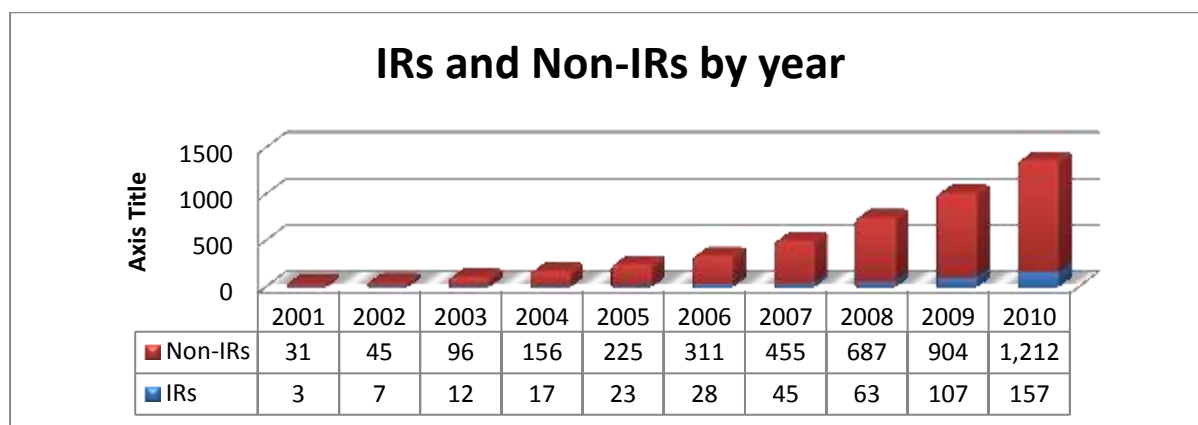
Another interesting strand is to look through companies' IR self-declaration to check whether these companies produced a "one report" or more than a report. The results were shown in Figure 2-9, by plotting non-integrated reporters, all integrated reporters and integrated reporters producing one report. Overall, a considerable portion of integrated reporters produce only a "one report". In 2003, all integrated reporters produced a single report. Results for 2002 were not different from these until 2008, where the average percentage for integrated reporters with one report for these years was 85.32%. In 2009 and 2010, there was a drop in the percentage of "one reporters", where it was 76.64% in 2009 and 77.7% in 2010. The latter result is similar to GRI (2013b) which stated that around 20% of self-declared integrated reporters in 2010 produced more than one publication.

Figure 2-9: Representing one reporters, integrated reporters and non-integrated reporters over the period of the study

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
One Report	2	6	12	15	18	25	39	53	82	122
IRs	3	7	12	17	23	28	45	63	107	157
Non-IRs	31	45	96	156	225	311	455	687	904	1,212
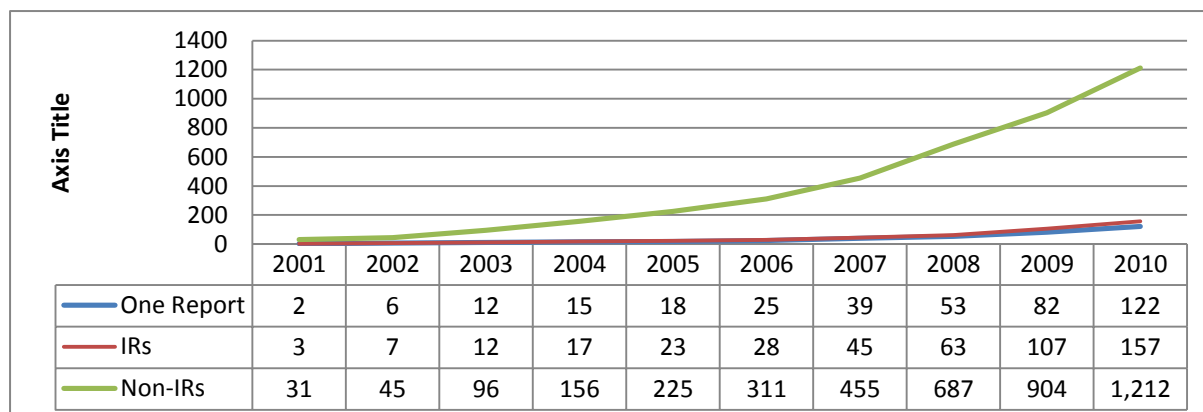
2.8 Regression results

This section shows the findings of the study. Firstly, a discussion of the descriptive statistics is provided, followed by a discussion of the regression findings and sensitivity checks.

2.8.1 Descriptive findings

Table 2.6 shows the frequencies of integrated and non-integrated reporters' firm-year observations. Firm-year observations for non-integrated reporters are 9,918 constituting 95.95% of the sample and 419 firm-year observations for integrated reporters making 4.05% of a total of 10,337 firm-year observations. In line with prior studies (e.g., Landsman and Maydew, 2002)[61], observations with negative equity (114 observations) were excluded from the initial 10, 451 firm-year observations.

Table 2.6: Descriptive statistics for the dependent variable (IRA)

IRA	Freq.	Percentage
0	9,918	95.95
1	419	4.05
Total	10,337	100%

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[61] Conversely, Kim et al. (2011) deliberately include the observations with negative equity, while acknowledging its omission in other accounting studies. The analysis was also conducted without dropping these observations (not reported) and the results were similar to the ones reported in the findings subsection below.

Table 2.7 shows the frequencies of integrated and non- integrated reporters per year. It presents the emergence of IR over the sample companies from 2002 till 2010.[62] In 2002, there are a total of 1,041 observations, from them 7 (0.67%) are integrated reporters. Conversely, in 2009, there are a total of 1,199 observations, 98 (8.17%) integrated reporters and 1,101 (91.83%) non-integrated reporters.

As the study sample includes integrated and non-integrated reporters from 46 countries, the distribution by country is shown in Table 2.8. For instance, a total of 57 companies in the sample are from Brazil making 4.69% of the total sample, from these there are 11 integrated reporters (7.59%) are from Brazil. Likewise, USA has 202 companies in the sample (16.68%) with only 3 (2.07%) integrated reporters. The sample representation by industry is shown in Table 2.9. The study classified industries into 10 categories using ICB.[63] Although both consumer goods and services have 9 integrated reporters each, consumer goods had more companies in represented (i.e. 158 compared to 104 in consumer services). Aggregate figures show 145 companies integrating their reports out of the final sample of 1,215.[64]

Table 2.7: IR adoption (by year)

year= 2002	IRA	Freq.	Percentage
	0	1,041	99.33
	1	7	**0.67**
year= 2003	IRA	Freq.	Percentage
	0	1,070	98.98
	1	11	**1.02**
year= 2004	IRA	Freq.	Percentage
	0	1,104	98.57
	1	16	**1.43**
year= 2005	IRA	Freq.	Percentage
	0	1,125	98.17
	1	21	**1.83**
year= 2006	IRA	Freq.	Percentage
	0	1,143	97.86
	1	25	**2.14**
year= 2007	IRA	Freq.	Percentage
	0	1,143	96.46
	1	42	**3.54**

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[62] Following Dhaliwal et al. (2012) with regard to stand-alone sustainability reports, the first year (2001) was not included due to the negligible number of integrated reporters in it.

[63] Industry Classification Benchmark (ICB) is an international benchmark that classifies companies into 10 general industry categories (ICB, 2012).

[64] As shown, although 145 integrated reporters are included in the sample, there are 143 integrated reporters in 2010. 2 companies opted not to produce an integrated report in 2010, one from Canada and another from Chile.

year= 2008	IRA	Freq.	Percentage
	0	1,132	95.21
	1	57	**4.79**
year= 2009	IRA	Freq.	Percentage
	0	1,101	91.83
	1	98	**8.17**
year= 2010	IRA	Freq.	Percentage
	0	1,059	88.18
	1	142	**11.82**

Table 2.8: Sample distribution by country

Country	Integrated Reporters	No. of Companies in the Sample	Percentage	Country	Integrated Reporters	No. of Companies in the Sample	Percentage
Argentina	1	9	0.74	Korea	0	46	3.79
Australia	4	34	2.80	Malaysia	0	8	0.66
Austria	2	10	0.82	Mexico	0	17	1.40
Belgium	2	10	0.82	Netherlands	8	34	2.80
Brazil	11	57	4.69	New Zealand	1	6	0.49
Canada	3	37	3.05	Nigeria	0	1	0.08
China	0	70	5.76	Norway	7	11	0.91
Chile	2	9	0.74	Pakistan	0	2	0.16
Colombia	2	8	0.66	Peru	0	12	0.99
Denmark	1	8	0.66	Philippines	4	10	0.82
Ecuador	0	1	0.08	Poland	1	5	0.41
Finland	7	21	1.73	Portugal	3	13	1.07
France	2	36	2.96	Russia	0	18	1.48
Germany	3	41	3.37	Singapore	0	11	0.91
Greece	1	23	1.89	South Africa	33	67	5.51
Hungary	1	6	0.49	Spain	12	42	3.46
India	0	28	2.30	Sri Lanka	1	5	0.41
Indonesia	0	3	0.25	Sweden	10	44	3.62
Ireland	0	2	0.16	Switzerland	8	33	2.72
Israel	0	13	1.07	Thailand	0	16	1.32
Italy	4	28	2.30	Turkey	0	10	0.82
Japan	4	101	8.31	UK	3	45	3.70
Jordan	1	2	0.16	USA	3	202	16.63
				Total	145	1,215	100%

Table 2.9: Sample distribution by industry

Industry	Integrated Reporters	No. of Companies in the Sample	Percentage
Basic Materials	24	159	13.09
Consumer Goods	9	158	13.00
Consumer Services	9	104	8.56
Financials	32	215	17.70
Health Care	7	40	3.29
Industrials	32	240	19.75
Oil & Gas	8	83	6.83
Technology	4	63	5.19
Telecommunications	7	45	3.70
Utilities	13	108	8.89
Total	145	1,215	100%

The descriptive statistics for the study variables is provided in Table 2.10. Panel (a) shows the descriptive statistics for the explanatory continuous variables for the whole sample (n=10,337) and separately for integrated reporters (419 observations) and non-integrated reporters (9,918 observations). The observations with negative equity (114 observations) were excluded from the initial sample of 10,451 observations following prior studies (e.g., Landsman and Maydew, 2002)[65]

The mimetic factor (using IRD as a proxy) shows the ratio of the number of within industry IR adopters in year t to the total count of firms within the industry sample. The ratio was computed based on the raw data (including the listed integrated and non-integrated reporters with missing data on DataStream). This is because these companies are present and would observe the practices of their rivals. Therefore, the highest IR density ratio per industry is 15.2% which is lower than 17.5% highest adoption rate per health care industry. Overall, it appears that integrated reporters are based in countries with stronger normative isomorphism. Integrated reporters operate in countries with larger number of NGOs per population than non-integrated reporters. The mean (median) NGOs was significantly higher for integrated reporters which is consistent with Hypothesis 4. The large difference between the maximum and minimum values of NGOs suggests outlier issues and the difference between mean/median shows that the variable is positively skewed. Therefore, the natural log transformation was used as an alternative measure in the sensitivity checks. The mean (median) of a country's environmental performance index was significantly higher for integrated reporters than the non-integrated reporters. Integrated reporters are based in countries with significantly stronger stakeholder laws than non-integrated reporters.

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[65] Conversely, Kim et al. (2011) deliberately include the observations with negative equity, while acknowledging its omission in other accounting studies. The analysis was also conducted without dropping these observations (not reported) and the results were similar to the ones reported in the findings subsection below.

Table 2.10: Descriptive statistics for study variables[66]

Panel (a): Continuous variables (n=10,337)

	Mean				Median				Minimum		Maximum	
Variable	All	IRs	Non-IRs	t-stat for diff	All	IRs	Non-IRs	z-stat for diff	IRs	Non-IRs	IRs	Non-IRs
IRD	0.038	N/A	N/A	N/A	0.017	N/A	N/A	N/A	0	0	0.152	0.152
NGOs	161.028	328.559	153.950	15.82***	67	134	66	13.60***	18	2	918	941
EPI	0.651	0.693	0.649	10.69***	0.659	0.676	0.658	9.45***	0.547	0.425	0.814	0.814
STAKELAWS	0.580	0.646	0.577	13.12***	0.563	0.670	0.551	11.41***	0.410	0.295	0.784	0.784
SIZE*	39,810,012	21,730,506	40,573,807	-2.49**	5,255,945	4,703,580	5,284,535	-2.30**	744	282	547,202,000	2,608,207,706
PROFIT	0.130	0.148	0.129	0.66	0.131	0.147	0.130	2.47**	-6.440	-26.696	1.945	12.614
LEVERAGE	1.642	1.439	1.650	-0.71	0.713	0.561	0.719	-2.41**	0.019	0.026	13.463	302.828

* Total assets are expressed in Euros (€1,000)

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

See Table 2.5 for variable definitions

Panel (b): Limited dependent variable and discrete independent variables (n=10,337)

	Mean				Median				Minimum		Maximum	
Variable	All	IRs	Non-IRs	t-stat for diff	All	IRs	Non-IRs	z-stat for diff	IRs	Non-IRs	IRs	Non-IRs
IRA	0.042	N/A	N/A	N/A	0	N/A	N/A	N/A	0	0	1	1
CSRLAW	0.368	0.534	0.366	5.19***	0	0	0	4.78***	0	0	2	2
GRIAD	0.393	0.864	0.372	20.59***	0	1	0	20.18***	0	0	1	1
DJSIIN	0.164	0.294	0.158	7.35***	0	0	0	7.34***	0	0	1	1

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

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[66] Calculation of country level variables are presented in appendix 2.3

The mean (median) size of assets for integrated reporters 21.73 (4.70) billion euros is substantially smaller than the mean size (median) for non-integrated reporters 40.57 (5.28) billion euros. The difference is significant at a 5% level, suggesting a negative relation between IR adoption and corporate size. Additionally, the huge differences between mean and median values suggest that this variable is heavily skewed by the existence of very large companies in both groups. There is a huge difference between the smallest and largest firms in the sample, suggesting an outlier issue that requires consideration. The natural logarithm was used to transform to natural distribution. Conversely, integrated reporters were more profitable than non-integrated reporters. This difference was only significant between medians. Although, the mean and median were fairly comparable, the maximum and minimum values spread largely suggesting outlier issues to consider. Non-integrated reporters depended more on debts than integrated reporters. Such difference was only exhibited between median at a 5% level. As with size and profitability, the difference between the maximum and minimum leverage values is very high requiring outlier consideration. Two actions were taken to account for outliers. Due to the large variations in many continuous variables and to avoid the effect of outliers the study reported a regression after winsorising the variables at a 1% level (i.e. the extreme ±1% of the variable were limited and given the values of the variables' ±99.0% values). Results after omitting influential observations from the model are also provided in the regression results section. Including financial companies in the model can cause issues due to their unique characteristics that differ from non-financial companies in general. The higher dependence on debts to finance assets causes their leverage ratio and profitability ratio to be inherently higher than non-financials. As a solution, the study runs separate regressions for financial and non-financials. Additionally, the study introduces an alternative measure for profitability (ROA) and leverage (debt-to-assets) as a sensitivity check.

Panel (b) shows the descriptive results for binary and categorical independent variables. Integrated reporters originated from countries with higher CSR laws for listed companies and pension funds. The mean (median) of integrated reporters was significantly higher than non-integrated reporters. Normative factors on a meso-level (i.e. professional associations) were also different between the groups. The mean (median) of GRI adoption was significantly higher for integrated reporters than the control group. This is consistent with Hypothesis 2. Likewise, integrated reporters were more likely to be members of DJSI than non-integrated reporters. These differences are statistically significant at a 1% level for both means and medians, which is consistent with Hypothesis 3.

Cross tabulation between the dependent variable (IRA) and each binary/categorical independent variable is given in Table 2.11-Table 2.14. Table 2.11 is a cross tabulation between IRA and the control variable LORIGIN. In absolute terms, companies from French legal origin have 165 IR observations, larger than all other legal origins. However, only 5.95% (165/2,773) of French legal origin observations are integrated reporters. This is less than the Scandinavian legal origin 14.23% (105/738). The odds ratio of Scandinavian legal origin compared to English is 7.36[67], French 2.62, German 6.01, and Socialist 26.37. This means that the chances of a company coming from a Scandinavian legal origin country to produce an integrated report is 7.36 that for a company coming from an English legal origin. Same illustration can be made for all other legal origins. The probability associated with the chi-square statistic of 292.82 is less than .001 indicating there is a strong relationship between IR adoption and the company legal origin.

Table 2.11: Cross tabulation of IRA and LORIGIN

IRA	LORIGIN					
	English	French	German	Scandinavian	Socialist	Total
0	3,959	2,596	1,945	629	789	9,918
1	90	165	54	105	5	419
Total	4,049	2,761	1,999	734	794	10,337
	Chi2= 292.82			P-value= 0.000		

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[67] Odds ratio= [((105/196)/(91/196))÷((633/4671)/(4038/4671))], or [(105/91)÷(633/4038)]= 7.36

Table 2.12 demonstrates the cross tabulation between IRA and CSRLAW. The highest number of integrate reporters comes from countries with no CSR Law (264) followed by CSR law of 1 and 2 at 86 and 69 observations. Inversely, only 3.5% (264/7,569) of these observations for countries with no CSR laws are integrated reporters, compared to 4.58% and 6.86% for CSR laws of 1 and 2 respectively. The odds ratio for CSR law 0 to 1= 1.32, 0 to 2= 2.03, 1 to 2= 1.53. The odds ratio with values greater than 1 shows a positive relationship between IR adoption and CSR Law, ignoring the effects of other variables in the model. This means that the chances for producing an integrated report in a country with CSR law score of 1 is 1.32 times that of a country with no CSR law. Chances increases as CSR Law score increase, as a company in a country with CSR Law of 2 is 1.53 or 2.03 times likely to produce an integrated report to a company in a country with CSR Law of 1 or 0. The probability associated with the chi-square statistic of 27.98 is less than .001 indicating there is a strong relationship between IR adoption and CSR law.

Cross tabulation between GRIAD and IRA in Table 2.13. Around 8.89% of companies reporting under GRI produced an integrated report, compared to 0.90% only for companies not yet reporting under GRI. The odds ratio for GRI adoption is 10.79, suggesting that the chances of producing an integrated report and reporting under GRI is 10.79 to that of producing an integrated report and not reporting under GRI. The large odds ratio is also supported by the large and significant chi-square. The probability associated with the chi-square of 407.35 is less than .001 indicating there is a very strong relationship between IR adoption and GRI adoption. The very large and significant chi-square result may suggest a potential endogeneity issue regarding the GRI adoption variable. Hence, the study tests for endogeneity as sensitivity check to the model.

As shown in Table 2.14, the probability of a company not being included in DJSI and producing an integrated report is 3.39%, and the probability of DJSI inclusion and producing

an integrated report is 7.25. The odds ratio for DJSI inclusion is 2.23. Thus, companies included in DJSI are 2.23 times more likely to produce integrated reports to these not included. The probability associated with the chi-square statistic of 53.81 is less than .001 indicating there is a strong relationship between IR adoption and DJSI inclusion.

Table 2.12: Cross tabulation of IRA and CSRLAW

IRA	CSRLAW			
	0	1	2	Total
0	7,216	1,775	927	9,918
1	264	86	69	419
Total	7,480	1,861	996	10,337
	Chi2= 27.98		P-value= 0.000	

Table 2.13: IRA and GRI Adoption

IRA	GRIAD		
	0	1	Total
0	6,224	3,694	9,918
1	57	362	419
Total	6,281	4,056	10,337
	Chi2= 407.35	P-value= 0.000	

Table 2.14: IRA and DJSI Inclusion

IRA	DJSIIN		
	0	1	Total
0	8,349	1,569	9,918
1	296	123	419
Total	8,645	1,692	10,337
	Chi2= 53.81	P-value= 0.000	

2.8.2 Multivariate analysis results

This sub-section shows the regression findings and different sensitivity tests undertaken to ensure findings are robust.[68] Main model results are presented in Table 2.16, winsorised variable model and the model after excluding influential observations are presented in Table 2.17. Other tests include the model excluding financial companies and the model only including financials in Table 2.18, regressions excluding the US (at the country with the largest number of observations) and another excluding South Africa (the largest number of observations for integrated reports) are reported in Table 2.20. The study also conducts a regression for companies with one report in

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[68] Stata software was used for running all regressions in this study.

Table 2.19. All the regressions outputs are presented using a two tailed tests. The reason is that some of the variables are unequal to the null hypothesis (i.e. may be positive or negative), and also because the two-tailed test is a more conservative measure of variable significance.

However, before discussing the regression results, Pearson pairwise correlation matrix is presented as in Table 2.15. The correlation only measures the bivariate movements between variables. A correlation higher than 0.8 is meant to be very high correlation, between 0.6-0.8 is high correlation, 0.4-0.6 is medium, 0.2-0.4 is low and less than 0.2 is very low correlation (Lin et al., 2009). As a rule of thumb, for any correlation higher than 0.8 between two variables, an action is to be implemented as getting more data or dropping that variable (Gujarati and Porter, 2009). The highest correlation (0.634***) is between STAKELAWS and EPI, and (0.546***) between STAKELAWS and NGOs. Other correlations appear to be low to moderate. Therefore, the correlation results suggest that there are no abnormal correlations.

Table 2.15: Pearson Correlation Matrix[69]

	IRA	IRD	DJSIIN	GRIAD	NGOs	EPI	CSRLAW	STAKELAWS	LORIGIN	SIZE	PROFIT	LEVERAGE
IRA	1											
IRD	0.215**	1										
DJSIIN	0.072**	0.052**	1									
GRIAD	0.199**	0.536**	0.225**	1								
NGOs	0.155**	0.043**	0.062**	0.046**	1							
EPI	0.105**	0.006	0.171**	0.059**	0.562**	1						
CSRLAW	0.051**	0.044**	0.147**	0.086**	0.291**	0.432**	1					
STAKELAWS	0.128**	0.014	0.136**	0.106**	0.546**	0.634**	0.468**	1				
LORIGIN	0.046**	0.011	-0.043**	-0.016	0.264**	0.005	-0.009	0.332**	1			
SIZE	-0.027**	0.096**	0.331**	0.207**	-0.058**	0.123**	0.061**	0.122**	0.030**	1		
PROFIT	0.004	-0.001	0.006	0.011	-0.004	-0.003	-0.011	-0.015	-0.021*	-0.004	1	
LEVERAGE	0.002	0.002	0.002	-0.002	0.020	0.003	0.0002	0.031**	0.017	0.077**	-0.233**	1

* Significance at 5%;** Significance at 1%
See Table 2.5 for variable definitions

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[69] National Corporate Responsibility Index (NCRI) has been initially included as a normative indicator of CSR at a national basis as applied in some studies (see for instance: Peng and Beamish, 2008; Zadek, 2006). However, the correlation matrix results showed that NCRI had a very high positive correlation of about 80% (significant at a 1% level) with the Environmental Performance Index (EPI) variable. Hence, the correlation was beyond the acceptable levels suggested by Lin et al. (2009) and Gujarati and Porter (2009). Additionally, NCRI had a VIF score of 4.90 (approx. 5), which is again considered by Neter et al. (1990) to indicate multicollinearity issues. Thus, the variable was removed due to suffering from high multicollinearity. Removing NCRI, the mean VIF scores decreased from 2.14 to 1.47.

Table 2.16 shows regression results for 1,215 companies in 10,337 firm-year observations.[70] The maximum number of firm-year observations is 9 (one observation per year from 2002-2010) and the average number of observations per company is 8.5. Hence, the study utilises an unbalanced sample, whereby some companies have missing observations due to data availability.[71] Although one solution for that is to exclude all corporations not having all 9 year observations, Lee (2001) argues that the use of unbalanced sample will help reduce the sample bias by increasing the sample size.

The overall model significance is tested using Wald chi-squared and likelihood ratio (LR) chi-squared tests. LR chi-squared test compares the log likelihood of the unconstrained model with no variables $L(\beta_U)$ to the log likelihood of the constrained model with all variables $L(\beta_C)$ (Long, 1997). Wald chi-squared test only estimates the constraint model to test if the model parameters equal to zero (ibid.). Results of both tests are significant, so one can conclude that the hypothesis that effect of the variables is simultaneously equal to 0 is rejected at a 1% level (Wald test= 287.93, p<0.01; Likelihood test= 946.07, p<0.01). Thus, the model has at least one predictor that is significant and can help explain IR adoption.

The study tests for multicollinearity using the variance inflation factor (VIF) scores and correlation matrix. VIF shows how the variance of an estimator is inflated by the presence of multicollinearity (Gujarati and Porter, 2009, p. 328). It is suggested that a VIF cut off score of 10 means that the variable is highly correlated (Hair et al., 1995).[72] Table 2.16 shows that all variables in the regression are far below 10, and the maximum VIF is 2.38 for

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[70] Out of the 1,217 companies in the sample 2 companies from the US had negative equity values throughout their observations. The firm-year observations were originally 10,451 and became 10,337 after dropping the 114 observations with negative equity.

[71] Noteworthy, the number of observations in a balanced sample (where all firm-year observations are available) is 10,935 firm-year observations (1,215 companies x 9 years), which means that the unbalanced sample is missing 598 firm-year observations and is 0.5 observation less for each company (i.e. 9 year observations for each company- average observations per company 8.5).

[72] An article by O'Brien (2007) casts doubt on the use of VIF of 10 as a rule of thumb by the vast majority of researchers.

STAKELAWS. This suggests that the model variables are not highly correlated and therefore there are no multicollinearity issues.

Table 2.16: Random effects for panel data by (company)

	Variable	Pred. Sign	Coefficient	Odds ratio	Z-statistic
Mimetic:					
Organisational field	IRD	(+)	61.341***	4.37e^{+26}	10.37
Normative:	DJSIIN	(+)	1.599***	4.950	3.16
Organisational field					
	GRIAD	(+)	4.289***	72.914	7.26
Country level	NGOs	(+)	0.004***	1.004	2.73
	EPI	(+)	-5.747	0.003	-1.31
Regulative:	CSRLAW	(±)	-0.588	0.555	-1.59
Country level					
	STAKELAWS	(+)	10.220**	27459.98	2.21
Control Variables	LORIGIN-English	(±)	-1.348	0.260	-1.05
	LORIGIN-French	(±)	-1.033	0.356	-0.92
	LORIGIN-German	(±)	-2.746**	0.064	-2.36
	LORIGIN-Socialist	(±)	-6.722***	0.001	-2.77
	SIZE	(+)	-0.637***	0.529	-4.56
	PROFIT	(±)	0.234	1.264	0.48
	LEVERAGE	(±)	-0.026	0.975	-0.32
	Constant	(±)	-8.193**		-1.98
Industry control		Included			
	C. Goods	(±)	1.501	4.486	1.21
	C. Services	(±)	1.170	3.223	1.05
	Financials	(±)	0.213	1.237	0.27
	Health Care	(±)	-1.063	0.345	-0.88
	Industrials	(±)	-0.193	0.825	-0.25
	Oil and Gas	(±)	1.970*	7.172	1.69
	Technology	(±)	3.169*	23.783	1.91
	Telecomm.	(±)	-0.379	0.684	-0.31
	Utilities	(±)	1.639*	5.150	1.71
Likelihood-ratio test			946.07***		
Wald test			287.93***		
Max VIF			2.38		
Maximum no. of observations per company			9		
Average observations per company			8.5		
No. of Observations			10,337		
No. of companies			1,215		

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.
See Table 2.5 for variable definitions

Mimetic isomorphism tested using IRD as a proxy is positively associated with IRA at 1% level (coefficient= 61.341, p<0.01), suggesting that the likelihood of IR adoption increases as the proportion of within industry integrated reporters increase. Results are similar to findings of Nikolaeva and Bicho (2011) on GRI adoption. Hence, H1 is supported, where a small increase in the ratio of within industry integrated reporters induces a large increase of the

odds of within industry integrated reporters. The results articulate the importance of mimetic isomorphism as a factor of IR adoption.

Normative isomorphism is tested using DJSIIN and GRIAD at an organisational field level, and number of NGOs and EPI at a country level. At an organisational field level, DJSI inclusion is positively related to IRA at a 1% level (coefficient= 1.599, p<0.01). Odds ratio of DJSIIN is 4.950 ($e^{1.599}$). Thus, moving from a non-participant of DJSI to inclusion in the index increases the odds of IR adoption by 395% [(4.950-1.00) x 100]. The results support H2, in which DJSI inclusion increases the likelihood that participant moves towards producing an integrated report. Similarly, the coefficient of GRIAD is positive (4.289) at a 1% level, suggesting that the adoption of GRI guidelines increases the likelihood of IR adoption. The previous result provides evidence to support H3. Therefore, it can be indicated that the organisational level normative factors can help explaining IR adoption among the listed firms in the sample. Overall, normative factors on an organisational field level increase the likelihood of IR adoption.

At a country level, number of NGOs per million of population is positively associated with IRA at 1% level, with an odds ratio of about 1.004. This technically means that an increase in the NGOs from 300 to 310 per million of population in a country (10 NGOs increase), increases the odds of IR adoption by only 4.1% [$(1.004)^{10}$ - 1]; the results support H4. Conversely, country's EPI shows a negative coefficient (-5.747), but insignificantly associated with IRA, and therefore H5 cannot be accepted.

With respect to regulative factors, existence of CSR laws and existence of stakeholders' orientation laws were used as proxies, both at a macro level. Results show a negative but insignificant relationship between CSRLAW and IRA, thus, H6 is rejected. In contrast, results show that higher STAKELAWS is positively associated with IRA at 5% level.

However, STAKELAWS was only marginally significant at 10% or insignificantly related to IRA in other regression tests conducted. Therefore, there is limited evidence to support H7.

The study controls for legal origin (LORIGIN) at a country level and for size, profitability and leverage as firm characteristics. LORIGIN involved English, French, German, Scandinavian and Socialist origins, where Scandinavian LORIGIN (reference category) was omitted in the regression as a control group due to dummy variable trap. Compared to a Scandinavian LORIGIN, companies from all other categories are less likely to produce an integrated report. These results are significant at a 1% for Socialist and 5% for German origin categories, but insignificant for both English and French origin categories.

Size measured by total assets is negatively associated with IRA at 1% level, proposing that smaller listed companies in the sample are more likely to produce integrated reports. The odds ratio for total assets transformed using the natural log is less than one (0.53), which explains the negative relationship between IRA and firm size. Hence, an increase in natural log of total assets by a value of 1 decreases the odds of producing an integrated report by 47%. Profitability measured by ROE and Leverage measured by the debt-to-equity are both negative and insignificant, suggesting no statistically material relationship between both corporate profitability and leverage and IRA.

Only limited evidence is provided to support that particular industries were superior to others with regard to IR adoption. The results show that companies from Utilities, Oil and Gas and Technology industries are more likely to adopt IR than companies in the basic materials industry. All other industries were insignificantly different. Therefore, it can be tentatively suggested that due to the tendency of utilities and oil and gas companies to produce higher social and environmental disclosure levels (Bouten et al., 2012), they may benefit from integrating the information produced with financial and risk aspects.

To account for any outlier effects, the study runs two separate regressions. Firstly, a regression is conducted after winsorising the continuous independent variables at 1% (i.e. 1% at the higher and lower extremes) and, secondly after omitting influential observations.[73] The results for both cases are presented in Table 2.17, and the overall results did not change. For both regressions, Wald chi-square test and Likelihood-ratio test are significant at a 1% level suggesting that at least one explanatory variable is significant.

Table 2.17: Random effects for panel data by (company): 1. after winsorising variables (using p=1%) and 2. after excluding influential observations

		Pred. Sign	Winsorised at 1%	Odds ratio	Influential Observations	Odds ratio
Mimetic:						
Organisational field	IRD	(+)	61.652*** (10.42)	5.96e^{+26}	59.019*** (11.53)	4.28e^{+25}
Normative: *Organisational field*	DJSIIN	(+)	1.618*** (3.18)	5.044	1.732*** (3.26)	5.650
	GRIAD	(+)	4.283*** (7.26)	72.439	5.216*** (7.93)	184.106
Country level	NGOs	(+)	0.004*** (2.74)	1.004	0.004*** (2.71)	1.004
	EPI	(+)	-5.593 (-1.27)	0.004	-5.509 (-1.21)	0.004
Regulative: *Country level*	CSRLAW	(±)	-0.586 (-1.57)	0.556	-0.488 (-1.30)	0.614
	STAKELAWS	(+)	9.990** (2.14)	21809.60	9.929** (2.16)	20523.6
Controls	LORIGIN-English	(±)	-1.324 (-1.02)	0.266	-1.122 (-0.86)	0.326
	LORIGIN-French	(±)	-0.997 (-0.88)	0.369	-0.640 (-0.56)	0.527
	LORIGIN-German	(±)	-2.680** (-2.28)	0.069	-2.439** (-2.05)	0.087
	LORIGIN-Socialist	(±)	-6.759*** (-2.76)	0.001	-5.850*** (-2.70)	0.003
	SIZE	(+)	-0.657*** (-4.50)	0.518	-0.639*** (-4.44)	0.528
	PROFIT	(±)	0.579 (0.70)	1.784	0.027 (0.03)	1.027
	LEVERAGE	(±)	0.005 (0.04)	1.005	0.046 (0.41)	1.047
	Constant	(±)	-7.886* (-1.86)		-10.116** (-2.34)	
Industry control			Included		Included	
	C. Goods	(±)	1.359 (1.11)	3.894	1.010 (0.48)	2.746
	C. Services	(±)	1.074 (0.97)	2.926	0.975 (0.81)	2.650
	Financials	(±)	0.525	1.691	0.649	1.913

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[73] The derivation of the 11 omitted influential observations is shown in appendix 2.4

		(0.65)		(0.76)	
Health Care	(±)	-1.120	0.326	-0.990	0.372
		(-0.94)		(-0.78)	
Industrials	(±)	-0.207	0.813	-0.151	0.859
		(-0.27)		(-0.19)	
Oil and Gas	(±)	1.971*	7.179	2.083*	8.025
		(1.72)		(1.69)	
Technology	(±)	2.949*	19.081	0.194	1.214
		(1.77)		(0.10)	
Telecomm.	(±)	-0.190	0.827	-0.077	0.925
		(-0.15)		(-0.06)	
Utilities	(±)	1.711*	5.534	1.634*	5.126
		(1.83)		(1.65)	
Likelihood-ratio test		954.65***		960.30***	
Wald test		326.26***		271.13***	
Max VIF		2.46		2.45	
No. of Observations		10,337		10,326	
No. of companies		1,215		1,215	

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

See Table 2.5 for variable definitions

As with the results in Table 2.16, results of the winsorised model shows that IRD (mimetic isomorphism), DJSIIN and GRIAD (Normative isomorphism at meso level) and NGOs (Normative isomorphism at macro level) are positively related to the IRA at a 1% level. STAKELAWS is positively related at a 5%. EPI and CSRLAW are negatively and insignificantly related to IRA. Again, Scandinavian legal origin is significantly higher than Socialist legal origins at a 1% level, German at 5% level, but not statistically different than English and French legal origin. SIZE is negatively related to the IRA at a 1%. Additionally, both PROFIT and LEVERAGE are not statistically significant. Odds ratios for both regressions are fairly similar to the results presented earlier in the original model without winsorising or excluding influential observations.

Similar to Eng and Mak (2003), the study includes financial and non-financial companies in the sample, while also reporting regression results disentangling financial and non-financial companies as shown in Table 2.18. Such disentangling of financial and non-financial companies would resolve a number of issues with regard to the model variables. The study uses debt-to-equity to measure leverage, which could be expected to be higher in financial firms due to their tendency of having lower equity values. Although, the use of debt-to-assets

can mitigate this issue, financial companies heavily depend on debts (i.e. borrowings and deposits) to finance their assets compared to other industries. Therefore, they are expected to have higher debt-to-assets ratios compared to other industries. Another issue with both debt-to-equity and debt-to-assets is that firms with financial stress and huge losses from any other industry would have low equity and high debt values so they may similar ratios to financial companies. The same is expected with regard to profitability which is measured as the return on equity. In this case, the net income is divided by the lower equity value in financial companies resulting in higher profitability rates. ROA can mitigate the issue of unusual profitability ratios when using ROE, as it divides net income by total assets. Eng and Mak (2003), however, used the ROE in their main model which included both financial and non-financial firms and then applied ROA as a sensitivity check and found that both revealed the same results. Noteworthy, as such issues are existent whenever the sample includes financial companies in the sample; Bouten et al. (2012) used the ROE and debt-to-equity as measures for profit and leverage respectively. Due to the potential issues that can occur from using these ratios in samples including financial and non-financial companies, the alternative measures of profitability and leverage (i.e. ROA and debt-to-assets) are used as a sensitivity check in the subsection below.

There are 8,535 firm-year observations for non-financial companies and 1,802 observations for financials. Wald chi-square and Likelihood-ratio tests are significant at a 1% level for both regressions. Thus, the hypothesis that the exploratory variables are all together equal to zero is rejected. Results in both regressions show, as previous, that IRD, DJSIIN and GRIAD are all positively associated with IRA at a 1% level (5% level for DJSIIN). NGOs per million of population is also positively associated with IRA but at 10% level. In contrast, the regression excluding financials show that EPI is negatively associated with IRA at a 10% level. However, consistent with other regressions, EPI was insignificantly associated with IRA for the regression only for financials. CSRLAW is insignificantly associated with IRA in

both regressions. STAKELAWS is positively associated with IRA at 5% when excluding financials, but was insignificantly related to IRA for the regression only for financials. As for control variables, Scandinavian legal origin is insignificantly different to all other origins in the regression only for financials. Regression results excluding financials shows that a company from Scandinavian legal origin is significantly more likely to produce an integrated report than German and Socialist origins at 5% and 1% respectively. As previous, SIZE is negatively associated with IRA at 1% and 5% level for the regression excluding financials and only for financials respectively. PROFIT and LEVERAGE are insignificantly associated with IRA.

Table 2.18: Random effects for panel data by (company): 1. Excluding Financials and 2. Only for Financials

		Excluding financials	Odds ratio	Only financials	Odds ratio
Mimetic: *Organisational field*	IRD	76.789*** (6.73)	$2.23e^{+33}$	47.081*** (4.92)	$2.80e^{+20}$
Normative: *Organisational field*	DJSIIN	1.795** (2.22)	6.022	2.980** (2.21)	19.696
	GRIAD	4.819*** (6.54)	123.860	3.823*** (3.26)	45.723
Country level	NGOs	0.004* (1.78)	1.004	0.005* (1.56)	1.005
	EPI	-13.523* (-1.87)	$1.34e^{-06}$	17.354 (1.48)	$3.44e^{+07}$
Regulative: *Country level*	CSRLAW	-0.617 (-1.10)	0.540	-1.297 (-1.47)	0.273
	STAKELAWS	16.9263** (2.21)	$2.33e^{+07}$	3.258 (0.32)	25.986
Controls	LORIGIN-English	-1.402 (-0.71)	0.246	-0.757 (-0.25)	0.469
	LORIGIN-French	-1.035 (-0.65)	0.355	0.850 (0.30)	2.340
	LORIGIN-German	-3.841** (-2.13)	0.021	-2.720 (-0.96)	0.066
	LORIGIN-Socialist	-10.24*** (-3.13)	0.000	-30.992 (-0.01)	$3.47e^{-14}$
	SIZE	-0.785*** (-2.90)	0.456	-0.604** (-2.24)	0.546
	PROFIT	0.076 (0.11)	1.079	1.129 (0.70)	3.091
	LEVERAGE	-0.154 (-0.71)	0.857	0.008 (0.05)	1.008
	Constant	-7.054 (-1.03)		-17.625* (-1.85)	
Industry control		Included		**N/A**	

C. Goods	2.281*	9.786		
	(1.70)			
C. Services	1.551	4.717		
	(1.32)			
Financials	**N/A**	**N/A**		
Health Care	-1.062	0.346		
	(-0.85)			
Industrials	0.028	1.028		
	(0.03)			
Oil and Gas	2.592**	13.352		
	(2.12)			
Technology	3.805**	44.904		
	(2.20)			
Telecomm.	-0.200	0.818		
	(-0.15)			
Utilities	2.374**	10.736		
	(2.35)			
Likelihood-ratio test	737.32***		203.66***	
Wald test	119.79***		51.57***	
Max VIF	2.51		2.43	
No. of Observations	8,535		1,802	
No. of companies	1,000		215	

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

See Table 2.5 for variable definitions

Overcoming the limitations attributable to the uncertainty around whether companies producing an integrated report should not have other reports, the study reports regression results in Table 2.19. An integrated report produced as part of other filings (including sustainability report, CSR reports, Annual financial reports and the like) was not considered as an integrated report and given a score of 0. Only "one" integrated reports were given a score of one. Results of the one report regression are similar to the results from the main model (with or without winsorising). IRD, DJSIIN, GRIAD, NGOs are positively and significantly related to IRA. STAKELAWS is positively related to IRA at a 10% level. Likewise, results show that there is no relationship between both EPI and CSRLAW and IRA. SIZE is negatively related to the IRA at a 1% level. Additionally, the significant negative relationship for both German and Socialist legal origins suggest that companies from these legal origins are less likely to produce integrated reports as compared to the Scandinavian legal origin.

Table 2.19: Random effects for panel data by (company) giving a score of 1 for the production of a one report/ 0 otherwise.

		Coefficient	Odds	Z-statistic
Mimetic:				
Organisational field	IRD	43.046***	4.95e^{+18}	8.66
Normative: *Organisational*	DJSIIN	1.415***	4.118	2.82
field				
	GRIAD	4.024***	55.907	7.92
Country level	NGOs	0.003**	1.003	2.15
	EPI	-7.606	0.000	-1.60
Regulative:	CSRLAW	-0.602	0.548	-1.53
Country level				
	STAKELAWS	9.461*	12853.99	1.89
Control Variables	LORIGIN-English	-1.492	0.225	-1.09
	LORIGIN-French	-1.470	0.230	-1.26
	LORIGIN-German	-2.557**	0.078	-2.13
	LORIGIN-Socialist	-5.584**	0.004	-2.38
	SIZE	-0.542***	0.581	-3.68
	PROFIT	0.046	1.047	0.11
	LEVERAGE	-0.005	0.995	-0.14
	Constant	-5.079		-1.14
Industry control		Included		
	C. Goods	0.765	2.149	0.69
	C. Services	0.597	1.816	0.54
	Financials	0.388	1.473	0.49
	Health Care	-0.605	0.546	-0.52
	Industrials	-0.606	0.546	-0.80
	Oil and Gas	0.857	2.357	0.71
	Technology	2.768*	15.926	1.90
	Telecomm.	0.406	1.501	0.33
	Utilities	0.834	2.302	0.86
Likelihood-ratio test		703.55***		
Wald test		197.11***		
Max VIF		2.46		
No. of Observations		10,337		
No. of companies		1,215		

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

See Table 2.5 for variable definitions

In the sample, South Africa has the largest number of integrated reporters, and the USA has the largest number of observations. The case of South Africa is particularly interesting as King III report was introduced in 2009 (Solomon and Maroun, 2012), which partially explain the rise of the IR adoption in South Africa especially in 2009 and 2010. The guidance on IR in South Africa through King III report may serve as normative factor that leads to IR adoption. Hence, the study reports separate regressions excluding South Africa and the USA each at a time as shown in Table 2.20. The number of firm-year observations is 9,762 and

8,618 and the number of companies is 1,148 and 1,013 in the regression excluding South

Africa and USA respectively.

Table 2.20: Random effects for panel data by (company): 1. Excluding South Africa and 2. Excluding Unites States accordingly

		Excluding South Africa	Odds ratio	Excluding US	Odds ratio
Mimetic:					
Organisational field	IRD	61.527***	$5.26e^{+26}$	77.993***	$7.44e^{+33}$
		(9.86)		(9.97)	
Normative:	DJSIIN	2.188***	8.913	1.769***	5.866
Organisational field		(3.07)		(2.96)	
	GRIAD	5.408***	223.253	4.844***	126.93
		(7.08)		(6.66)	
Country level	NGOs	0.008***	1.007	0.001	1.001
		(3.67)		(0.73)	
	EPI	46.414***	$1.44e^{+20}$	1.505	4.502
		(4.23)		(0.29)	
Regulative:	CSRLAW	0.749	2.115	-1.088	0.336
Country level		(1.37)		(-1.42)	
	STAKELAWS	-9.088	0.000	8.134	3407.57
		(-1.40)		(1.59)	
Controls	LORIGIN-English	-3.971*	0.019	-1.050	0.350
		(-1.65)		(-0.75)	
	LORIGIN-French	7.045***	1147.516	-2.031	0.131
		(3.70)		(-1.61)	
	LORIGIN-German	-1.263	0.283	-3.634**	0.026
		(-0.79)		(-2.73)	
	LORIGIN-Socialist	1.222	3.393	-13.364***	0.000
		(0.34)		(-5.48)	
	SIZE	-0.527***	0.590	-0.394***	0.674
		(-2.77)		(-2.76)	
	PROFIT	0.010	1.010	0.249	1.283
		(0.02)		(0.40)	
	LEVERAGE	-0.007	0.993	-0.024	0.977
		(-0.12)		(-0.23)	
	Constant	-44.107***		-21.355***	
		(-5.12)		(-4.42)	
Industry control		Included		Included	
	C. Goods	2.038	7.676	1.766	5.847
		(1.15)		(1.25)	
	C. Services	-0.860	0.423	2.190	8.932
		(-0.36)		(1.59)	
	Financials	1.352	6.523	0.250	1.284
		(1.39)		(0.26)	
	Health Care	-0.139	0.870	0.417	1.517
		(-0.08)		(0.26)	
	Industrials	-0.039	0.962	0.348	1.417
		(-0.03)		(0.38)	
	Oil and Gas	2.710*	15.031	3.218**	24.978
		(1.66)		(2.39)	
	Technology	4.014**	55.391	5.712***	302.595
		(2.02)		(3.02)	
	Telecomm.	-0.334	0.716	-0.372	0.689
		(-0.18)		(-0.27)	

Utilities	2.690* (1.94)	14.726	2.198* (1.87)	9.01
Likelihood-ratio test	593.58***		914.35***	
Wald test	353.65***		134.96***	
Max VIF	2.35		2.51	
No. of Observations	9,762		8,618	
No. of companies	1,148		1,013	

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

See Table 2.5 for variable definitions

As previous, Wald-test and Likelihood-ratio test both are significant at a 1% level showing that at least one predictor variable is significant. As with previous findings, IRD, DJSIIN, GRIAD are positively related to IRA at a 1% for both regressions. Hence, although King III may stimulate IR adoption especially in South Africa, the results did not change to those presented earlier. Alternatively, EPI is positively associated with IRA at a 1% level when excluding South Africa, the variable becomes insignificant when excluding the USA. This may be attributable for the low EPI performance scores for South Africa. Additionally, STAKELAWS and CSRLAW are insignificant under both regressions. Size is negatively associated with IRA at a 1% level for both regressions. When excluding South Africa, English LORIGIN companies are less likely to adopt IR compared to Scandinavian LORIGIN. The reason is because the regression omits South Africa which is an English legal origin country. Conversely, results excluding the US show that there is a lower likelihood that a German and Socialist LORIGIN company will adopt IR as compared to companies with Scandinavian LORIGIN.

2.8.3 Sensitivity tests

Although every approach for collecting data comes with its limitations, the study tests for any effects from non-respondent companies and these responding adversely[74] to the query. Those companies were treated as non-integrated reporters (i.e. only GRI reporters) and were given a score of 0 in the main regression model. Provided that those companies have initially self-

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[74] Adversely responding to the query refers to the companies that have indicated not producing an integrated report or these who indicated producing an integrated report beyond 2010.

declared on the GRI report list to have produced an integrated report, but have not responded (non-respondents) or altered their fist-time IR adoption in the response to the query (adverse respondents), those companies were omitted in the sensitivity checks to ensure the results are robust. Hence, a total of 763 observations were omitted for these companies and results appear in Table 2.21 below. Additionally, the study tested for any effect from adverse respondents only in Table 2.21. In both instances, the results show that the existence of such observations did not affect the results presented in the main findings (i.e. the limitations attributable to the research approach used did not affect the outcome).

Table 2.21: Panel data random effects regression: 1. Excluding non-respondents and adverse respondents to the query, and 2. Only excluding adverse respondents.

		1.Excluding non-respondents and adverse respondents	Odds ratio	2.Only excluding adverse respondents	Odds ratio
Mimetic: *Organisational field*	IRD	63.924*** (9.98)	$5.78e^{+27}$	62.629*** (10.47)	$1.88e^{+28}$
Normative: *Organisational field*	DJSIIN	1.711*** (3.11)	5.533	1.611*** (3.11)	6.195
	GRIAD	4.367*** (7.11)	78.842	4.346*** (7.21)	127.642
Country level	NGOs	0.004*** (2.72)	1.004	0.004*** (2.69)	1.005
	EPI	-5.535 (-1.16)	0.004	-6.157 (-1.38)	0.002
Regulative: *Country level*	CSRLAW	-0.529 (-1.30)	0.589	-0.565 (-1.50)	0.601
	STAKELAWS	9.349* (1.87)	11486.40	9.976** (2.15)	42183.9
Controls	LORIGIN-English	-1.676 (-1.19)	0.187	-1.349 (-1.03)	0.320
	LORIGIN-French	-1.099 (-0.87)	0.333	-1.123 (-0.97)	0.772
	LORIGIN-German	-2.983** (-2.32)	0.051	-2.780** (-2.32)	0.072
	LORIGIN-Socialist	-10.352*** (-3.62)	0.000	-6.809*** (-2.91)	0.000
	SIZE	-0.678*** (-4.30)	0.508	-0.635*** (-4.47)	0.515
	PROFIT	0.283 (0.55)	1.327	0.239 (0.48)	1.414
	LEVERAGE	-0.045 (-0.47)	0.956	-0.028 (-0.33)	0.993
	Constant	-6.946 (-1.55)		-8.283** (-1.98)	
Industry control		Included		Included	

C. Goods	1.388	4.007	1.565	4.784
	(0.99)		(1.26)	
C. Services	1.201	3.325	1.203	3.331
	(1.01)		(1.06)	
Financials	0.865	2.374	0.524	1.688
	(0.99)		(0.65)	
Health Care	-1.233	0.291	-1.183	0.306
	(-0.95)		(-0.97)	
Industrials	-0.090	0.914	-0.095	0.909
	(-0.11)		(-0.12)	
Oil and Gas	2.267*	9.650	2.045*	7.728
	(1.87)		(1.76)	
Technology	3.104	22.279	3.141*	23.125
	(1.62)		(1.86)	
Telecomm.	-0.594	0.552	-0.329	0.720
	(-0.44)		(-0.26)	
Utilities	1.737*	5.679	1.718*	5.573
	(1.73)		(1.81)	
Likelihood-ratio test	952.65***		932.86***	
Wald test	261.95***		103.51***	
Max VIF	2.47		2.45	
No. of Observations	9,574		10,125	
No. of companies	1,125		1,191	

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

See Table 2.5 for variable definitions

To ensure the robustness of the logit output, the study conducts a panel data random effects regression using the probit model as in Table 2.22. This is to ensure that both models produce similar findings, as this is the general case. Probit model findings reported are similar to the findings obtained under the logit model.

Table 2.22: Panel data random effects probit regression model using winsorised data at (1%)

		Coefficient	Z-Statistic
Mimetic: *Organisational field*	IRD	28.916***	10.94
Normative: *Organisational field*	DJSIIN	0.867***	3.14
	GRIAD	2.115***	8.07
Country level	NGOs	0.002***	2.70
	EPI	-3.213	-1.27
Regulative: *Country level*	CSRLAW	-0.309	-1.45
	STAKELAWS	5.759**	2.17
Controls	LORIGIN-English	-0.754	-1.00
	LORIGIN-French	-0.611	-0.93
	LORIGIN-German	-1.553**	-2.32
	LORIGIN-Socialist	-3.621**	-2.01
	SIZE	-0.342***	-4.28
	PROFIT	0.100	0.40
	LEVERAGE	-0.014	-0.30

	Constant	-3.428	-1.43
Industry control		Included	
	C. Goods	0.765	0.69
	C. Services	0.597	0.54
	Financials	0.388	0.49
	Health Care	-0.605	-0.52
	Industrials	-0.606	-0.80
	Oil and Gas	0.857	0.71
	Technology	2.768*	1.90
	Telecomm.	0.406	0.33
	Utilities	0.834	0.86
Wald test	278.23***		
Max VIF	2.46		
No. of Observations	10,337		
No. of companies	1,215		

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.
See Table 2.5 for variable definitions

Endogeneity occurs when one or more of the parameters (independent variables) are correlated with the error term (Wooldridge, 2009; 2010). Endogeneity may also be the result of an omitted variable bias or simultaneity (Wooldridge, 2009; 2010). Simultaneity is a situation in which there is a bi-directional causality between the dependent and independent variables (Heckman, 1978). Nikolaeva and Bicho (2011) found that DJSI inclusion is a strong determinant for GRI adoption. However, the study did not test for reverse causality (i.e. GRI adoption leads to DJSI inclusion). Since these organisations focus on similar issues related to corporate sustainability, factors affecting the joining GRI or DJSI may be similar. Peel (2014) asserts that such unobserved effects that are correlated with endogenous explanatory variable(s) and also the outcome variable would create biased causal inferences. Given that IRA, GRIAD and DJSIIN are all dummy variables, Heckman (1978) and Peel (2014) report that the bivariate probit model is appropriate to test endogeneity in this case. Results of the bivariate probit model are shown in appendix 2.5. The coefficient of athrho (ρ) is insignificant (Coefficient=-0.029, p-value=0.799) when testing for the endogenous variable GRIAD. Thus, suggesting that there are no endogeneity issues in the model. Conversely, athrho (ρ) is insignificant (Coefficient=-0.321, p-value=0.094) when testing for the endogenous variable DJSIIN using a conservative two-tailed test. Although this result may suggest that DJSIIN might be regarded as an endogenous variable in the model, the

significance is very weak. Hence, it would be beneficial to study the factors affecting DJSIIN using a large scale study in the future to examine the causality issues by introducing strong instrumental variables (e.g., competitive advantage, firm visibility…etc.).

Similar to Nikolaeva and Bicho (2011), the study runs a discrete hazard logit model as a sensitivity test following Allison (1995) and Jenkins (1995). The model is useful with the existence of binary predictor variable, time-varying predictor variables and adoption-timing ties as data is captured on a yearly interval (Nikolaeva and Bicho, 2011). Hazard models explicitly accounting for time and therefore resolve the issues of static models (Jenkins, 1995). Hence, it would correct for any issues that may arise from the IRA and IRD ties. More specifically, as the adoption of IR happens in on yearly interval the new companies deciding to adopt IR at any point in year t will cause IRD and IRA to increase in the same period, creating such adoption-timing issue. The hazard model corrects for such issue by introducing a time-varying base hazard rate (Nikolaeva and Bicho, 2011). The hazard rate is the likelihood of adoption in next year conditional on non-adoption until that time (Jenkins, 1995; Nikolaeva and Bicho, 2011). The results of the discrete hazard logit model are provided in appendix 2.6, which produces similar results to the logit model used in the main findings.

Finally, the study replaces variables ROE (measure of profit), debt-to-equity (measure of leverage) and NGOs by ROA, debt-to-assets and logged NGOs to check for result consistency as shown in Appendix 2.7. Overall, there are no significant variations to the results in the main model.

2.9 Discussion and conclusions

The purpose of the study is to explore institutional factors (at meso and macro level) affecting IR adoption using a panel data logit regression. The study also provides a portrayal for the emergence of integrated reports till 2010.

The graphs contributed to showing the patterns and the geographical locations in which IR practices were developing. Although IR was only adopted by a limited number of companies over the period studied, it moved from being applied by 7 companies in 4 European countries and Brazil in 2002 to being applied by 157 companies in all continents and by 30 countries in 2010. The spread of IR in a large number of countries may help adoption by more companies and contribute to developing and reforming the concept and practice of IR. Nevertheless, the quantity and spread of IR is fractional when compared to other well-established initiatives as the GRI, which in 2010 was reported by over 1,360 listed firms from 53 countries.[75]

Around half of the integrated reporters in 2010 were European firms. A similar trend was observed by Wright and Rwabizambuga (2006), whereby Equator Principles adoption was dominated by European firms. Such domination of European firms IR adoption and sustainability practices may be explained by the strong explicit tradition of these countries concerning the promotion of environmental and social aspects in their policies and norms (Matten and Moon, 2008; Doh and Guay, 2006; Sotorrío and Sánchez, 2008; Wright and Rwabizambuga, 2006).

Eccles and Krzus, (2010) mentioned that there is a rising attention to the concept and practice of IR, which at the moment seems rather fragile and newly emerging. They postulate that an integrated report ought to be the only annual report produced by a company (i.e. one report). In practice, companies were inconsistent and some of them produced 1 or 2 other annual documents. The present longitudinal study shows that there is a decrease in the integrated reporters producing a one report in the last two years (2009-10); raising the concern about the reasons why companies are recently producing more than one report in their mainstream reporting.

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[75] 46 countries included in the regression model, while 7 were excluded due to missing data.

The study looks at the effect of mimetic, normative and regulative institutional factors on IR adoption. Overall, results show that while mimetic and normative factors at a meso level drive IR adoption, normative and regulative factors at a macro level have limited impact on IR adoption. Thus, the results are in agreement with Jones (1999) who postulated that while the factors driving responsible reporting may exist, they may not be sufficient to induce corporate change. Additionally, the results are in line with the argument that the different levels of institutional pressures may not have an equivalent effect (Jones, 1999; Campbell, 2007).

Palenberg et al. (2006) found that mimetic pressures stemming from competitors form the second most important reason explaining corporate uptake of non-financial disclosures. In this study, the largest impact stems from mimetic isomorphism as shown in the regression findings. This suggests that new corporate practices are screened and may be adopted by their rivals. Thus, it can be argued that corporations are significantly affected by the diffusion of IR within an industry. Results are in line with Jennings and Zanderbergen (1995) who postulated that mimicry may drive corporate adoption of newly formed responsible practices more than normative and regulative factors.

Results show that even without direct requirements for producing integrated reports, the new reporting practice was diffusing. However, the high uptake in 2009 and 2010, especially by South African firms, may be the result of the announcement of having IR as a listing requirement at JSE listings. The development of IR guidance (such as A4S, 2007) may also have advanced the uptake of IR especially from 2008.

IR is considered to be a communication tool to present the corporate business model, strategic, operational and governance aspects (Lodhia, 2104). However, as mimicry is the main driver of such behaviour and reporting pattern, it may be driven by symbolic isomorphism (Long and Driscoll, 2008). This is because mimetic isomorphism stems from

the need to model the rivals (Scott, 2008; Jennings and Zanderbergen, 1995) to be perceived as compliant to such practices (Zucker, 1987). Hence, this elevates the chances that IR may be symbolically adopted without concrete changes in reporting or behaviour. Solomon and Maroun (2012) and Burritt (2012) assert that integrated report has to embed sustainability reporting into the heart of mainstream corporate reporting and develop behavioural changes. However, in practice, corporations may only provide a ceremonial state without altering its practices. Hence, this will result in empty rhetoric (Solomon and Maroun, 2012, p. 5).[76]

Normative organisational field factors also highly influence IR adoption in the companies studied. Both corporate inclusion in DJSI and adoption of GRI guidelines are positively and significantly associated with IR adoption. Thus, results indicate that if a company belongs to DJSI and/or adopted GRI principles the likelihood of adopting IR increases. These results are consistent with institutional theory, where business associations set the normative institutional environment at an organisational field to facilitate responsible corporate behaviour (Galaskiewicz, 1991).

Ricart et al. (2005) showed that DJSI leading companies consider innovations that are driven by sustainability as a core value. Therefore, being included in DJSI builds a normative paradigm for motivating innovative sustainable reporting and practices and aligning corporate financial to non-financial aspects (Eccles and Krzus, 2010; Lopez et al., 2007). Cho et al. (2012), however, found that DJSI inclusion is positively related to both corporate reputation and corporate sustainability disclosures. Conversely, they found a negative association between DJSI and environmental performance. The latter result only holds with one measure of performance ("Environmental Impact Score'' reported by Newsweek) and not the other (KLD Scores). Their sample included only US firms as compared to this empirical study

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[76] The next chapters tries to flesh out corporate sustainability embeddedness as reflected in their integrated reports and explore the postulate that corporations tries to produce integrated reports ceremonially (i.e. exploring the notion of decoupling).

applying a large number of firms in 46 countries. Additionally, Hartman et al. (2007) noted that the Anglo-American model of reporting is more investor oriented and firms seek to show economic justifications for CSR engagement. While excluding the US from the sample, the regression results still hold.

Moving to GRI adoption, the results in all regressions show that GRI adoption increases the likelihood of IR adoption. GRI guidelines are known to be using the TBL in a soloed manner (Nikolaeva and Bicho, 2011). IR also stems from TBL, but demonstrates links between the three bottom lines (Eccles and Serafeim, 2011; Eccles and Krzus, 2010). In this regard, Brown et al. (2009) reported that some GRI reporters' casts doubt on the value of the current reporting structure to stakeholders, whereby they are considering alterations to the GRI template. Hence, corporations experiencing the limitations occurring from reporting under GRI may have adopted IR by exploring the interconnections between economic, social and environmental aspects. To ensure the results are robust endogeneity was tested and results also showed that GRI adoption is not an endogenous variable in the model.

Normative factors on a macro level had limited impact on IR adoption. Although NGOs was positively and significantly related to IRA in most regressions, the odds ratio was fractionally greater than 1. Thus, the results indicate that a large increase in the NGO density in a country would be required to increase the likelihood of integrated reports production in that country. Therefore, the change in the NGO density seemed not to highly influence IR adoption in such, but instead to drive CSR disclosure and practices in general. NGOs seek to emphasise the necessity of environmental and social wider concerns rather than stressing the need to develop integrated reports per se (van Bommel, 2014). Hence, the results provide support to Arenas et al. (2009) and Campbell (2007), as higher concentration of NGOs per population is positively related to CSR.

Results show that NGOs are yet to have a crucial role in the development of IR practices in many ways. As NGOs view themselves as collaborators of companies and organisations (Arenas et al., 2009), they may collaborate with the organisations promoting IR (as IIRC and GRI) in order contribute and enhance the guidelines development (Eccles and Saltzman, 2011). NGOs can also perform the roles as judges to corporate reporting (Arenas et al., 2009) by monitoring corporate IR practices. Finally, NGOs may also start adopting IR as their reporting vehicle (Eccles and Saltzman, 2011).

Results show that different national environmental norms, using EPI as a proxy, has no influence on IRA. However, when excluding South Africa, EPI was positively and significantly associated with IRA. The results may be explained by Matten and Moon (2008), where companies in countries with weaker environmental performance may explicitly become involved into CSR practices to respond to other pressures. Thus, it can be argued that in the IR context, integrated reporters in countries with lower environmental performance (especially in South Africa) practice explicit responsibility driven by other institutional factors, like mimicry or potential introduction of new regulations.

Regulative factors have limited effect on IR adoption in the period studied. Results provide limited support for a positive relationship between STAKELAWS and IRA. Furthermore, CSRLAW was insignificantly associated with IRA. CSR laws mainly enforce companies to provide more disclosures (Dhaliwal et al., 2012), which may lead to better responsible reporting behaviour (Campbell, 2007). However, the voluntary nature of IR and the nonexistence of sanctions for not producing these reports make CSR laws, at this stage, less likely to drive the production of integrated reports. The results related to IR are largely similar to that of Delmas and Montes-Sancho (2011) on ISO standards. Delmas and Montes-Sancho (2011) reported that at the early stages of diffusion regulative factors are less explaining such diffusion and normative factors are more important. However, at later stages

regulation becomes very important. Reflecting on IR, there is currently a move towards developing listing requirements in different countries, which would stimulate IR adoption (Eccles and Serafeim, 2011).

In conclusion, the limited regulative pressure gives support to Gray and Milne (2002) argument that sustainability reporting for large organisations still requires substantive legislation. Thus, benchmark for governmental CSR regulation is yet to emerge (Haigh and Jones, 2006). Such gap has practical implications as highlighted below.

The study, however, found a negative and significant relationship between corporate size and IRA. This suggests that smaller listed firms are more oriented to publish an integrated report to large firms. The results differ from Frias-Aceituno et al. (2012; 2013a; 2013b), who found a positive association between IRA and size. One explanation may be related to the different samples used in this study as compared to both studies (GRI report list and Forbes 2,000). Another may be related to the measurement of the dependent variable (0/1 for non-integrated/integrated reporters, and 0/1/2 for financial only/sustainability/IR). Arguably, most companies produce at least some CSR related disclosures and, therefore, companies with only financial reports may be smaller and weaker companies. Hence, these companies may have driven the results in Frias-Aceituno et al. (2012; 2013a; 2013b) study. Finally, Frias-Aceituno et al. (2012; 2013a; 2013b) used a checklist which identified integrated reports mainly based on reporting on risk, governance and remuneration, future outlook, market and product description and financial and non-financial performance. The list was compiled through the recommendations of IIRC which targets the IR adoption by large firms, and therefore only shows IIRC's prospective on IR. Therefore, using such checklist would considerably include larger companies as integrated reporters.

High visibility and pressure on large firms due to expected commitment to CSR, makes them more motivated to commit to prominent CSR initiatives (Udayasankar, 2008). Reverte (2009)

finds that large firms are more inclined to pursue legitimacy when responding to public pressure by constructing symbolic impression, to help maintain their political and economic stance (Neu et al., 1998). In contrast, smaller firms are more motivated on the basis of a differentiation policy to enhance access and promote efficiency in using resources and to gain higher visibility (Udayasankar, 2008; Jones, 1999). Higgins et al. (2014) assert that IR can essentially lead to differentiation. These arguments would imply that larger firms would seek legitimacy and manage their reputation by reporting under well-established CSR guidelines as GRI[77] (Bebbington et al., 2008). Jones (1999, p. 170) explains that smaller firms are more likely to be stakeholder oriented as they face less financial hegemony and less bureaucratic control.

Smaller firms have less complex and more centralised activities (Udayasankar, 2008). These attributes seems to provide an advantage for small companies than large companies to adopt IR. This is because IR requires a coherent communication among various units in order to provide a holistic view of the corporation's values (Stubbs and Higgins, 2014).

The relationship between CSR and country's legal origin was tested in several studies (e.g., Chih et al., 2010; Collison et al., 2012). In this study, the regression model includes legal origin as a country level control variable for IR adoption. Results show that companies from Scandinavian LORIGIN countries are more likely to produce integrated reports compared to companies from German or Socialist LORIGIN, but insignificantly different from English or French LORIGIN. Appendix 2.2 also descriptively showed that IR firstly emerged in Norway, Sweden (both Scandinavian countries) and Brazil. Hence, Scandinavian countries were among the leading countries with regard to IR practices by companies. Moreover, Scandinavian countries are also in a leading position in social and environmental corporate practices (Yongvanich and Guthrie, 2006).

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[77] GRI is argued to be the most influential CSR initiative with an international stand (Nikolaeva and Bicho, 2011, p. 136; Brown et al., 2009; see also: Adams, 2004).

Garcia-Sánchez et al. (2013) reported that countries with high feminism based on Hofstede's cultural dimensions were more likely to produce integrated reports. The study results give support to Garcia-Sánchez et al. (2013) as Scandinavian legal origin countries have high feminism based on Hofstede's scores.

Collison et al. (2012, p. 407) pointed out that common law countries "referring to English legal origin countries" are less prone to balance the interests of various societal groups, and was described as seeking to defend "men in their own" as compared to the civil law countries "referring to Scandinavian, French and German legal origin countries" which were more successful in that respect. When excluding South Africa –an English LORIGIN country- Scandinavian legal origin was significantly higher than English legal origin countries in terms of IR adoption at a 10% level. These results are to a large extent consistent with Chih et al. (2010) who found that companies from Scandinavian legal origin countries engage more in CSR activities to other origins (English, French and German).

2.10 Contributions and implications

2.10.1 Contributions

There are a number of theoretical contributions for the study. Lee (2008) asserts that based on the limitations in current CSR research, future research is urged to unpack the basic conceptual and theoretical mechanisms to explain corporate behaviour and reporting from a broader societal angle. The study explores the development of new corporate reporting practices using a theoretical framework that explores both the societal (macro) and organisational field (meso) levels. Additionally, Sotorrío and Sánchez (2008) assert that the analysis of country level factors is a new area that needs to be explored to expand the knowledge about factors explaining CSR. The study also fulfils calls by Husted and Allen (2006) who stated that more research is needed to pinpoint the regulative, normative, mimetic isomorphism that explain the adoption of CSR practices.

The research also contributes to institutional theory, by not only looking at a single country as in many other studies (see: Amran and Haniffa, 2011; Bansal, 2005). The research uses a considerably large sample from more than 40 countries over a fairly long panel, as compared to Sotorrío and Sánchez (2008), who studied CSR in a sample of 40 top European and North American firms in 2003-2004. Dhaliwal et al. (2011) suggested that due to the diverse legal and institutional national settings, an international study in CSR reporting arena would be highly beneficial.

The study contributes towards empirically testing some of the propositions of the conceptual studies on CSR utilising institutional theory in the specific case of IR adoption. For instance, Campbell (2007) proposed that corporations are more likely to act in more socially responsible manner if there are NGOs in their environment that can monitor and change the corporate behaviour. Corporations are more likely to behave in socially responsible ways if they belong to associations that promote such responsible behaviour (Campbell, 2007). Such normative factors and other mimetic and regulative factors were tested empirically in this research.

The study contributes by using a different and arguably a better means for collecting data on IR adoption. This study uses corporate self-declaration, which despite having certain limitations as described in the limitation section below, still overcomes numerous limitations to previous studies. Frias-Aceituno et al. (2012, 2013a, 2013b) identified integrated reporters using a checklist extrapolated from the IIRC discussion paper in 2011 and AECA's IR scoreboard in 2011. Applying the checklist retroactively in the sample's period 2008-2010 would be problematic due to time variation. Additionally, these working papers look at only one form of integration, where it is known that at the current stage there is no one known form for the integrated report (Eccles and Krzus, 2010). IIRC discussion paper is one of the various inputs (including the pilot study) IIRC used to develop its consultation paper in 2013

(IIRC, 2013a). Thus, the discussion paper can be considered a first attempt towards formulating the <IR> framework and cannot be considered as a measure per se. Finally, these studies employed a sample drawn from the Forbes Global 2,000 companies, which lists publicly listed companies worldwide based on: sales, profit, assets and market value (Patig et al., 2010), while not including CSR disclosure and performance. This study includes listed companies using GRI initiatives to produce their reports. Thus, all companies with their different sizes would have a level of CSR participation.

Jensen and Berg (2012) used a sample of 204 integrated reporters mainly driven from GRI report list[78] (listed and non-listed) and compared them to a control group of 105 companies which were the best sustainability reporters in 2009. The study did not describe the nature of the control sample as to what proportions of companies included were listed or non-listed and whether the characteristics of both groups were different in terms of which countries they are located. Additionally, due to including listed and non-listed firms corporate characteristics were not included which makes it harder to understand the nature of both groups.

This study used the corporate self-discretion as to explore when they started IR to overcome the current limitation regarding lack of research on IR practice emergence. Hence, the study contributes by carefully selecting the sample, period and method to best explore IR adoption.

2.10.2 Implications

The study also provides some practical implications in IR adoption. One of the practical considerations relates to the future of IR. IIRC framework draft stated that IR is primarily aimed towards investor needs, but will also be of benefit to other stakeholders (IIRC, 2011, p. 5). Hence, such rhetoric makes it more likely that the IIRC's framework was initially intended to be driven by an Anglo-American perspective to investor protection rather than

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[78] 30 companies from the 204 integrated reporters were generated from examples provided by Eccles and Krzus (2010), the entrants of CRRA Reporting Awards 2010, and examples provided by A4S.

balancing the needs of different groups. In contrast, results show that IR is mainly adopted by European companies. Additionally, IR may be diverted from its initial development conception to a more symbolic reporting formation. Interestingly, Novo Nordisk- a Danish company that produced its first integrated report in 2004- reported that its approach differed from IIRC's discussion paper which sees IR as a communication process (Novo Nordisk, 2011a). The company states that IR involves developing the accounting systems to be able to better capture social value and environmental externalities. Although IIRC's framework in December 2013 seemingly altered the rhetoric to state that IR benefits all stakeholders (IIRC, 2013b, p. 7), it still reported that the primary purpose of an IR is to explain to "providers of financial capital" how an organisation creates value overtime (IIRC, 2013b, p. 4). This raises concerns about the intentions of the IIRC and the level of input from early integrated reporters into the framework. Same was found under GRI G4 which stated that the aim of IR is to primarily offer the providers of financial capital an integrated representation of material aspect to value creation (GRI, 2013a, p. 85)

Another practical consideration hangs around the inconsistency of corporate reporting. There is an increasing level of IR adoption, but also there are a proportion of integrated reporters that produce 2 or 3 reports and not a single report. Other reporting channels- such as corporate websites or meetings- may well be employed to disseminate supporting corporate information, while collating and showing the different corporate values in an integrated report (Eccles and Serafeim, 2011).

In the current stage, the results show no effect of CSR laws on IR adoption. Governments need to enhance their role not by legislating new laws, but by working closely with corporations and NGOs to develop norm like corporate expectations while penalising poor behaviours. Governments may also endorse IR practices and provide the technical information to corporations on how to produce integrated reports (Delmas and Toffel, 2004).

South Africa is the first country to embrace such approach. However, regulatory enforcement by applying IR came on an earlier stage to providing sufficient technical assistance on IR.

The diffusion of IR is still increasing and has not reached to a saturation stage; this is evidenced as IR adoption rates are not dropping down. At this limited diffusion stage (Haberberg et al., 2008); early adopters of organisational innovations are commonly driven by a desire to improve performance (DiMaggio and Powell, 1991b, p. 65). Thus, a successful diffusion of IR practices is more likely to occur if there are various different practices based on management intent (De Villiers and Alexander, 2010). The varying practices would then condense and only successful practices will then become more institutionalised. However, in the meantime influential institutional actors including IIRC and GRI are pushing towards harmonising or perhaps unifying corporate practices by developing a unified framework and supporting guidelines. Hence, such harmonisation may in fact promote corporate systemised IR behaviour rather than attaining corporate change (De Villiers and Alexander, 2010).

2.11 Limitations, interesting insights and future research

This section highlights the limitations and interesting insights mainly related to the data collection process. The section then provides future research propositions.

2.11.1 Limitations and interesting insights

As GRI is in a position of jointly leading IR developments, this on itself gives an advantage of using the self-declared data on the GRI report list. However, relying on self-declaration by companies comes with its limitations. Although companies are divided into integrated or non-integrated reporters, some companies declaring to GRI that they produced an integrated report were cautious and reserved when answering the study's query. Hence, the query set a second tier and a more sensible manner for including/excluding companies from being integrated reporters and to obtain data on first integrated report produced. Responses giving a

clear cut to when the company had its first integrated report were included as integrated reporters. For example, an industrial company from the Netherlands stated that "we first published our integrated financial, social and environmental report in February 2009. This report covered the fiscal year 2008." Also an industrial firm from Italy gave this response "Our first Integrated Annual Report was published in 2006, related to FY 2005". Additionally, a Japanese technology firm responded "we started publishing our integrated report from "Annual Report 2010", so 2010 is the first integrated report." A German basic materials company responded:

... has been publishing an integrated report on our financial and sustainability reporting in one publication since 2007. We document our economic, environmental and social performance and provide specific examples to demonstrate how sustainability contributes to the success of our company.

Conversely, while accumulating data from companies responding on the query, several interesting responses appeared on the surface. For instance, a German consumer goods company provided the following response that shows that the company is undergoing some progress on integration, but there seems to be no factual intention to move towards producing an integrated report:

So far, "the company" has issued separate reports and will continue to do so for some time to come. This is mostly due to the rather complex reporting structure regarding CR[79] on an international basis whereas our financial reporting has been tried and tested for a very long time. We shall, however, integrate sections of the financial report into our sustainability report and vice versa. Eventually, reporting may very well merge but, again, this is farther down the road.

Similarly, a Finnish oil and gas company showed its unwillingness in the meantime to produce an integrated report:

Please be advised that "the company" is currently not producing a fully integrated report and has no immediate plans to do so. A Sustainability Report is published annually as part of the Annual Report, and supplementary information is published on the web site. ... Our plan

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[79] CR here refers to "Corporate Responsibility", so as not to be confused with the same abbreviation used in the study to refer to Corporate Register.

is to continue publishing the Sustainability Report as one section of the Annual Report at least for the year 2012.

The same for a German basic materials company which indicated that "so far we have not published a fully integrated report. We have a chapter on "important non-financial matters.""

Other companies showed plans towards producing an integrated report. For instance, a financial firm from Canada stated:

With reference to your question regarding integrated reporting, "the company" does in fact include a limited amount of ESG information within our Annual Report. This information is primarily related to environmental risk, employee compensation and benefits and governance structure. This information has been included in our annual report for several years.

In terms of a truly 'integrated report', this is something that we are currently reviewing, though in practice we have not produced such a report. We continue to follow the IIRC, and evaluate best practice in this area, and will integrate our findings into our reporting plans going forward.

The response shows the company's plan towards producing an integrated report by tracking IIRC's work and the companies' practices in order to initiate such practices. The plan shows that IR for this company is driven by both firm willingness and rivals practices. In addition, it shows the emergence of a new actor (the IIRC) as a key actor promoting the development of integrated reports. IIRC has been used by the company to channel the best practices in producing integrated reports, which may show the importance of such institutional actor in driving IR. It may be interesting to longitudinally study the change in this company's reporting over a period of time to view whether it came to be aligned to the IIRC's framework or followed a different path. This can be triangulated by interviews with its key personnel.

Likewise, GRI G4 guidelines were also identified as a basis for a company's integrated reports future plans. A consumer goods company in Peru stated:

Our aim is to publish our first integrated report by 2014 aligned with the G4 GRI guidelines which will be launched by May 2013. So far, we publish our annual and sustainability report individually nevertheless in both documents there is a strong connection regarding corporate governance, environmental performance and social development.

Additionally, some companies stated that they started/ will start publishing an integrated report beyond 2010. For instance, a South African industrial firm mentioned: "Our first Annual Integrated Report was published in 2011". Likewise, a South African consumer services company provided the following response: "The Company produced its first integrated report for the year ending 31 August 2011, in line with the requirements of the King III Code of Corporate Governance, which introduced the concept in South Africa with effect from 2011 financial years."

Like other IR studies reviewed, there is a probability of having a sample selection bias. This is because the sample of companies is drawn from a particular source. Despite this limitation, it is still arguable that the GRI list is still the richest source for identifying integrated reporters. The sample bias was partially accounted for by running regressions for countries with the highest representations to observe any change in the results. Another potential limitation is that the companies included in the study were on GRI list, this would limit the generalisability of findings to companies that already have interest in sustainability related issues. Hence, the results does not generalise to companies that might have produced an integrated report while being interested only in producing financial related information previously.

2.11.2 Future research

The study opens up further gaps and questions that are of genuine need to be addressed. The results show that mimetic isomorphism is positively and significantly related to IR adoption. However, there is no evidence whether the more recent adopters are reporting and understanding IR in a similar fashion to the earlier adopters. Thus, to what extent such new practices are submerged into the new adopters' actions and whether this is shown by their reporting is not picked by the study. Additionally, this gap opens up the speculation around the motives behind each group to encompass IR. Future research may use qualitative

techniques and case studies to explore the specific corporate motives both internally and externally to produce integrated reports.

As attributable to other large scale quantitative studies, this study gives indicators on the factors driving companies to adopt IR. Thus, corporate IR practices needs to be explored in future research as it can hardly be covered using the current study setting. Hence, the following chapter explores the SE within the integrated reports.

Future studies may track the development of IR reporting for companies included in the IIRC's pilot programme over time. These studies may enable showing the alterations in corporate reporting before joining the pilot programme and till current.

Chapter 3 Sustainability embeddedness in integrated reports: index development and corporate reporting

3.1 Preamble

Embeddedness of sustainability within corporate culture and activities ought to be reflected into the corporate sustainability disclosure (Adams and McNicholas, 2007; Adams, 2013; Solomon and Maroun, 2012). Arguably, the better the embeddedness of sustainability within corporate activities 'integrated thinking', the better the integration of information system for corporate reports and decision-making (Druckman, 2013). Hence, Sustainability Embeddedness (SE) forms a key cornerstone for building an integrated report (A4S, 2007; Solomon and Maroun, 2012). SE and integrated thinking may help the company to think more broadly beyond the financial 'bottom line' (IIRC, 2013b). An integrated report needs not to be merely a combination of various reports, but is expected to be a tool that aids to embed integrated thinking throughout the organisation (IIRC, 2013b; KPMG, 2011a). Therefore, SE is a key factor to gauge the integration of corporate reports. While KPMG (2011b) showed that the desire to integrate sustainability into the core business was the most commonly claimed driver for IR adoption, only 9% of the reporters indicated that the adoption was to follow the IR trend.[80] Therefore, it seems only a few integrated reporters have symbolically adopted IR, with the majority at least claiming to want to embed sustainability within the business and reporting.

Despite its importance, especially with regard to IR, SE has received relatively little attention in research studies (NBS, 2010). Therefore, the purpose of the study is to develop a SE index in order to capture SE in the integrated reports. The study also provides a portrayal of the state of SE in a sample of integrated reports and compares the SE index to GRI G3.1 and G4 *de facto* sustainability reporting measures.

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[80] KPMG's survey was conducted for the Global Fortune 250 largest companies.

The study potentially contributes to relevant literature and practice in three ways. Firstly, it provides a new metric for capturing SE in corporate reports. By so doing, the study is in line with calls from De Villiers et al. (2011a) concerning the need for studies to develop tools to assess levels of integration. It also partially responds to calls from De Villiers et al. (2014) regarding the need to develop metrics to detect good integrated reports from others. In addition to this methodological contribution, the study contributes to standard and guidance setters by comparing current reporting templates to the SE index. Such comparison would aid in further developments of standards/guidelines that shall lead to better SE and integration. The study also shows the content of integrated reports by focusing on SE disclosures. Hence, the study responds to calls from Hahn and Kühnen (2013, p. 17) concerning the need to look into the content of integrated reports and whether they balance social, ecological and financial aspects. Finally, the study also show exemplars from the SE disclosures in the integrated reports, which can be potentially useful for corporations in embedding sustainability into their reporting and also to standard/guidance setters to assist them in developing their guidance to better address SE. The latter contribution is linked to calls from De Villiers et al. (2011a) to carry out studies showing innovative reporting by integrated reporters.

The remaining parts of the chapter are outlined as follows. Section 3.2 reviews the literature on SE. Section 3.3 provides the process followed for the development of the SE index. Section 3.4 demonstrates the index validity and the pilot testing to ensure its reliability. The sample used is shown in section 3.5, followed by showing the descriptive results of the SE index in section 3.6. Section 3.7 discusses the SE disclosures in the integrated reports using exemplars. Research discussions and conclusions are provided in section 3.8, and limitations and future research are then presented in section 3.9.

3.2 Literature review on sustainability embeddedness

The section, firstly, defines SE and then summaries the academic literature discussing it.

3.2.1 Defining sustainability embeddedness

As a starting point, the study sheds light on what corporate sustainability (also sustainability accounting) would look like and attempts to define SE. The word "sustainability" is often used interchangeably to terms as CSR and environmental management (Milne et al., 2006). The Brundtland report defined the concept of sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (UNWCED, 1987, p. 8). However, Gray (2010) contested that the definition of sustainability on these grounds leaves the impression that business will continue operating "as usual" for a foreseeable future which he regards as rather doubtful and fairly unrealistic. Consequently, Gray (2010) proposes four detached categories that collectively denote to "sustainability accounts" that address a wider scope than corporate sustainability. The first includes the discourse in or within the business field, and secondly, the corporate reports on social and environmental accountability. The third encompasses organisation(s) initiatives built to motivate and guide towards environmental and social responsibility and/or accountability. Finally, the fourth category includes the work of academics and experts that defines sustainability at an organisational level.

Bebbington (1997, p. 377) stated that sustainability pertains to the core of relationships between economy, environment and society. Lamberton (2005) advocated that sustainability is commonly identified as a three dimensional concept, an accounting framework shall incorporate a holistic portrayal of corporate performance by reporting on these three dimensions, ecological, social and economic perspective. Likewise, Schaltegger and Burritt

(2010, p. 377) describe sustainability accounting as a subset of accounting dealing with activities, methods and systems to record, analyse and report:

1. Environmentally and socially induced financial impacts,

2. Ecological and social impacts of a defined economic system (e.g., the company, production site, nation, etc.), and

3. Most importantly, the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability.

Thus, to sum up, it can be noted that sustainability can be understood based on a three dimensional definition to measure ecological, social and economic performance and more importantly to show the links between these dimensions.

Given the above, it is evident that the concept of sustainability remains unsettled in the academic arena. Accordingly, Schaltegger and Burritt (2010) contend that firms may use the term sustainability to frame their struggle with the complexities around the issues and goals attributable to corporate sustainable development, and not because it is driven by their understanding to the concept of sustainability. Therefore, a diligent understanding of sustainability, especially by linking the three dimensional concept, is important to avoid its "misuse" (Schaltegger and Burritt, 2010, p. 380), and to aid in embedding sustainability into business and reporting practices (Fries et al., 2010).

The so-called SE, which is an emerging concept, needs to be unpacked and explored in a greater depth. As previously demonstrated, the social and environmental dimensions are interrelated, however, the discussions in the literature draws borders between them. GRI (2013b, p. 17) oversimplifies reporting on SE by stating that a report with clear evidence on inter-linkage between sustainability and financial reporting is referred to as an embedded structure report.

The first dimension of SE is social embeddedness which is defined by Uzzi (1999, p. 482) as "the degree to which commercial transactions take place through social relations and networks of relations that use exchange protocols associated with social, non-commercial attachments to govern business dealings". Additionally, such exchange of relationships and social attachments (links) are factored and shaped by the level or degree of organisational social embeddedness (Uzzi, 1999). Thus, the level of corporate social embeddedness defines how corporations interact with varying groups, individuals and whether they can secure and enlarge the benefits and resources resulting from such ties (ibid.).

The second dimension of SE is ecological (environmental) embeddedness. Whiteman and Cooper (2000, p. 1267, emphasis added) provided a simple definition to ecological sustainability as "the degree to which a manager *or more generally a company* is rooted in the land- that is, the extent to which managers *or corporations* are on the land and learns from the land in an experimental way. Whiteman and Cooper (2000) suggested that corporations may differ in the extent of ecological embeddedness, as prior evidence suggests they do differ in social embeddedness. They argue that corporations gain an ecological knowledge while they interact with the surrounding ecosystem, which in turn have implications to the corporate sustainability and accountability. The study specified that corporations with strong identifications with local ecosystems, gather more ecological information, and adhere to ecological beliefs of respect, reciprocity, and caretaking are more committed to sustainable practices than other companies not having similar characteristics. In other terms, embedding ecological concerns and culture within the corporate strategy, operations, processes and practices reflects a more sustainable corporate identity (Schaltegger and Burritt, 2010).

The third dimension of embeddedness refers to the interactions between social, ecological and economic sustainability; such interaction builds up the business case of sustainability

(Hopwood et al., 2010a). Thus, SE may be referred to as the instrumentation of social and ecological embeddedness while demonstrating linkages with the economic sustainability practices. Moreover, SE has to occur at both strategic and operational levels as well as within corporate actions and practices and reflected by corporate reporting and communications (Fries et al., 2010; Schaltegger and Burritt, 2010; Gray and Bebbington, 2007). Additionally, it is vital that both corporate management and employees have awareness regarding sustainable development beyond the field of their work to enhance SE across the corporation (Haugh and Talwar, 2010). Thus, an understanding of sustainability and spread of sustainable development beyond the boundaries of workplace would aid in reinforcing corporate SE among all business facets.

3.2.2 Sustainability embeddedness studies

Despite the fact that the conception of SE is of substantial importance to business conduct and to sustainability at the global level, it has received comparatively little attention by academics. Additionally, the attention was on various aspects related to but not necessarily directly addressing SE.

Haugh and Talwar (2010) offer a view towards SE that centres on expanding employee knowledge about sustainability. They contend that the diffusion of sustainability information has to happen at all company levels, while not restricting it to a small group of employees. Equally, Aldama et al. (2009) assert that top level management and board involvement in CSR issues help in embedding sustainability within corporate functions. Bell et al. (2012) proposed that CFO and other top board members may engage in developing metrics to measure and report sustainability performance in order to enhance SE within operations. Haugh and Talwar (2010) proposed an action plan for spreading and embedding sustainability among the corporation which included several issues. Firstly, they suggested that collaborative sustainability training for employees at various business units (production,

supply chains, selling, marketing, distribution, and finance and management control) shall be included to help embed sustainability into corporate cultural values. Secondly, training has to come as part of a long-term learning strategy that aims to expand and continually update the company knowledge system. Finally, employee training and volunteering will help build an interest and commitment to sustainability. In conclusion, both board commitment and employee engagement, training and volunteering are required to embed sustainability in corporate functions.

Banerjee (2011) argues that Haugh and Talwar (2010) take an internal view about SE and that the term needs to include a wider focus. He claims that corporations have to embed sustainability externally by incorporating the interests of stakeholders and marginalised voices. The study also contends that lobbying with various groups including governments has to be embedded into corporate reporting. Additionally, Slack et al. (2014) show that other issues such as corporate communication, culture and embeddedness of CSR within corporate strategy and other organisational facets may all together frame effective employee engagement.

Individuals from diverse cultures pursue corporate sustainability by placing importance on different aspects as staff sustainability training and development, resource efficiency, engagements with stakeholders or ecological protection (Linnenluecke and Griffiths, 2010). The existence of diverse cultures in a company that are of equivalent power results in reinforced and better environmental strategies (Howard-Grenville, 2006). Valente (2012b) posits that community relations and environmental activities have to form part and be embedded into corporate strategy and operations. Valente (2012a) asserts that the intangible resource capital (i.e. human capital, employee knowledge, and social capital) influence the implementation of the CSR strategy and indirectly influence the strategy formation. In addition, Adams and McNicholas (2007) explain that raising employee awareness on

sustainability and linking employee performance appraisal to sustainability principles are ways to embed sustainability principles. Lodhia (2014) explains that sustainability has to be embedded into all organisational divisions and not the responsibility of a small group of employees. Thus, involvement and commitment of employees at various levels as well as involvement of other stakeholders would help embed a balanced form of sustainability at the strategic and operational levels.

Buysse and Verbeke (2003) studied the relationship between corporate environmental strategy and stakeholder management. The study used data from questionnaire responses on environmental practices from 197 Belgian companies in 1999. They classified corporate environmental strategies as suggested by Hart (1995) into three strategies: (1) reactive, (2) pollution prevention, and (3) environmental leadership. They found that firms with a pollution prevention strategy place the highest importance on addressing regulatory stakeholders' needs. Adversely, environmental leaderships place minimal attention to managing regulatory stakeholders.[81] Moreover, companies with environmental leadership strategy (i.e. more proactive environmental strategies) allies with having a broader coverage of stakeholders. In particular, proactive environmental strategies are positively associated with primary internal stakeholders (employees and financial institutions). However, neither of the strategies seemed to be related to the external primary stakeholders (Domestic and international customers and suppliers). Therefore, Buysse and Verbeke (2003) concluded that corporate key stakeholders may differ based on the environmental strategy it adheres to. However, corporations with sound environmental strategies incorporate more stakeholders. Moving to a more proactive environmental strategy requires allocating resources on multiple facets including investments in greener technologies and products, enhancing employee skills, management systems and strategic planning process. Buysse and Verbeke (2003)

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[81] Regulatory stakeholders involve: national governments and local public agencies.

reported that MNCs in the sample incorporated greener environmental strategies to domestic ones.

Cramer et al. (2004), however, postulate that corporations need to embed sustainability by establishing monitoring system to CSR activities and formulating a vision, mission and code of conduct on CSR. Vilanova et al. (2009) argue that as sustainability becomes embedded internally, companies would include sustainability within the corporate mission.

Dao et al. (2011) developed an integrated sustainability framework using triple bottom line reporting which aims to provide benefits for both the company and stakeholders. The framework was divided into four quadrants showing internal and external strategy of sustainability, at present and in the future. At present, there is a need to prevent pollution by enhancing the operations of the company and the supply chain to reduce the costs and environmental impacts. Additionally, there is a need to create a culture of sustainability and engage internal and external stakeholders to enhance corporate competitive advantage. As a future strategy, there is a need to use clean technologies in products processes and supply chain as well as opening dialogue with stakeholders previously marginalised. Owen et al. (2001) postulate that companies have to incorporate stakeholder views into their decision making process.

Ballou et al. (2012) conducted a survey for 178 CSR officers who are members of CROA in 2009.[82] Of interest, the study asked the participants to answer a questionnaire covering various issues including IR and SE. Findings show that 11.2% of respondents perceive that their organisations *fully* embed sustainability into strategic and decision making processes. The study, however, did not attempt to define SE or the term "Sustainability". Provided that

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[82] CROA denotes to the Corporate Responsibility Officer Association, which is a non-for-profit society aiming to develop the CSR officer community. CROA had about 1,750 registered members on its directory in 2009 (Ballou et al., 2012). For more details, see: http://www.croassociation.org/content/vision-mission-objectives (accessed: 20/08/2014).

SE is still in its development and a full coverage of its components is immature, it seems highly unlikely that there would be organisations fully embedding sustainability. Additionally, the study found that 72% of corporate boards place sustainability as a priority. Respondents indicated that in 16.7% of corporations, sustainability reporting is integrated with financial reporting.

Stubbs and Higgins (2014) investigated the internal processes and mechanisms utilised by 15 Australian organisations from various sources showing their commitment to IR.[83] The study approached a number of participants from finance, sustainability and communication departments in these organisations and used Nvivo software to show the key themes. Results reveal that IR did not induce fundamental change, which was suggested to be the result of its new emergence stage in the organisations. Adversely, some patterns of transformation in internal processes were discovered that were found to bring a more holistic approach. They found that some organisations formulated the corporate strategy through cross-transitional groups by involving finance, sustainability, risk, strategy and investor relations personnel (i.e. involving wider internal stakeholder engagement). All the organisations have been utilising GRI guidelines and all studied materiality issues. Organisations, however, wanted guidelines that alter GRI to become better integrated. Some companies devote integrated report "ownership" to key personnel in the organisation (operations executive, finance director or communications division). Few were found to develop measures to integrate financial and non-financial strategic outcomes.

Finally, instead of developing metrics for capturing SE, Lozano (2012) reviewed different sustainability related initiatives[84] in order to explore their benefits for the organisation. He

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[83] Sources included companies showing commitment to IR on ASX50 index, ACCA (2011), NetBalance Foundation and the Business Reporting Leaders Forum (BRLF).

[84] The study reviewed 16 initiatives including: TBL, The Natural Step, ISO 26000, Green engineering, Eco-labelling, Sustainability Balanced Scorecard and Eco-efficiency.

found that although each initiative has some advantages, grouping various sustainability initiatives together can help build a more holistic image of corporate sustainability and may embed sustainability within the corporate system. Therefore, this study tries to review discussions on SE in the literature and the SE measures developed by organisations in order to build a comprehensive SE index that can be applied to corporate reporting.

Most of the previous studies in this area used interviews or questionnaires with organisations (Buysse and Verbeke, 2003; Aldama et al., 2009; Valente, 2012a; Valente, 2012b; Cramer et al., 2004; Stubbs and Higgins, 2014), concentrated on company case studying (Haugh and Talwar 2010; Howard-Grenville, 2006; Adams and McNicholas; 2007) or used other studies to build specific frameworks (Dao et al., 2011; Vilanova et al., 2009; Linnenluecke and Griffiths, 2010).

It appears explicit that each study reviewed had a specific focus, and in general, gave some guidance on how to capture SE. The topics discussed on SE studies included: SE in corporate and supply chain operations (Dao et al., 2011), strategy (Buysse and Verbeke, 2003; Valente, 2012a; Bell et al., 2012; Stubbs and Higgins, 2014), vision and mission (Cramer et al., 2004; Vilanova et al., 2009), employee training and volunteering (Haugh and Talwar, 2010; Linnenluecke and Griffiths, 2010), employee empowerment and engagement (Haugh and Talwar, 2010; Lodhia, 2014; Stubbs and Higgins, 2014), top management involvement (Aldama et al., 2009; Bell et al., 2012), sustainability part of performance appraisal (Adams and McNicholas, 2007), innovations and greener products, preventing pollution (Dao et al., 2011; Linnenluecke and Griffiths, 2010), and stakeholder and community relations (Valente, 2012b; Dao et al. 2011; Linnenluecke and Griffiths, 2010; Banerjee 2011; Owen et al., 2001; Stubbs and Higgins, 2014). Alternatively, some organisations are involved in promoting IR provided more comprehensive guidance on SE.

3.3 SE index development

This section starts by drawing upon available published guidelines to develop a comprehensive SE index to capture SE in integrated reports. It is followed by explaining in detail the index development process. Finally it compares the index developed to other *de facto* guidelines on sustainability reporting.

3.3.1 Guidelines available for developing the SE index

Although prior research discussed various aspects of SE, the studies did not take an aggregate view of SE and its components. There are, however, documents that claim to take a more holistic view of SE published by organisations directly linked with developing IR. A4S (2007) is one main document on SE.[85] The guidance was particularly cited by the Integrated Reporting Committee (IRC) South Africa to help firms embed sustainability matters into their practices and emphasise that when reporting.[86] The first part of the guidance specified 10 elements to embed sustainability in the corporation (A4S, 2007), while the second provided show cases on the disclosure of the SE aspects in corporate reporting (ibid.).

Secondly, IFAC's (2011) document "Sustainability Framework 2.0" was devoted to explaining the integration of sustainability matters from three angles: strategy, operations and reporting. Additionally, the document helped tackling the issue of SE within the corporate DNA (IFAC, 2011, p. 10).

Thirdly, CERES (2010) document "The 21st Century Corporation: the Ceres Roadmap for Sustainability" presents an integrated approach to SE within the corporate DNA (CERES, 2010, p. 11). The document typified sustainability concerns that are expected to be addressed

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[85] A4S is one of the early organisations that were working in the area of promoting corporate integrated practices including SE. More details were given in chapter 2 in the section IR: a historical development.
[86] The A4S publication and book referred to as sources of guidance on SE: http://www.sustainabilitysa.org/IntegratedReporting/ReferenceSourcesonIntegratedReporting.aspx (accessed 13/08/2013).

by corporations into four key areas, namely: governance for sustainability, stakeholder engagement, disclosure and performance. The report also has a practical reach by giving practical examples from over 200 companies in different sectors.

More recently, Black Sun published two documents in 2011. Black Sun (2011a) showcases companies who have made steps towards producing integrated reports. The document also illustrated an IR framework that involved 8 areas, namely: 1- business description, 2- overall vision, 3- leadership commitment, 4- strategy and objectives, 5- performance, 6- risk and opportunities, 7- governance and 8- future outlook. Although the sections were illustrated in separate parts, the document reported that these elements have to be taken connectedly. The aim of this publication was to generally shed light and provide some guidance on IR (Black Sun, 2011a). Black Sun (2011b) shows the progress made by some companies in the IR journey. Hence, it sheds light on what approaches they undertook and the strategies they implemented. Both documents provided practical insights that may be more directed towards familiarising other companies with the emerging concept of IR. However, none of them provided practical guidance on reporting on SE.

Network for Business Sustainability (NBS) published a report on embedding sustainability in organisational culture (NBS, 2010).[87] The report was compiled to help answer the question: how to ensure that sustainability remains embedded into the organisation after key personnel as the CEO or the sustainability director leaves? It discussed the effective sustainability practices and showed how to embed the practices into the organisational levels. Furthermore, the report addressed the question from a managerial perspective more than explaining these

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[87] Network for Business Sustainability is a Canadian non-profit organisation that was established in 2005 with the purpose of providing resources on important sustainability matters to aid in management practice and research. More about the Network for Business Sustainability can be found at: http://nbs.net/about/ (accessed 10/08/2013).

practices from an accounting and reporting manner.[88] Hence, the report's emphasis on the embeddedness of the sustainability culture within the corporation makes it more tailed to in-depth comparative studies using a small number of organisations. In turn, it provides a richer emphasis on the cultural and informal practices that will occur inside the corporation. Conversely, the report hardly emphasised the accounting and reporting of these managerial practices.

In summary, three documents (by A4S, CERES and IFAC) gave guidance on SE elements and how to provide disclosures on them. A4S provided a specific set of elements for SE in particular and gave directions to their applicability in reporting by inducing corporate examples of reporting on these matters. CERES report also provided an integrated approach to SE matters. IFAC's sustainability framework is a third relevant source, as it discusses SE within the framework. Conversely, Black Sun did not provide practical guidance on reporting on SE, and NBS focused more on organisational sustainability culture over the reporting aspect. Therefore, the study used the three documents from A4S, CERES and IFAC to develop the SE index as would be shown in the subsection to follow.

3.3.2 Development process of the SE index

In order to build the SE index, two main steps were involved. Firstly, the study employed the 10 elements on SE that were developed by the A4S as the main categories for the index as

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[88] The report typified practices as a combination of these two main dimensions: 1) Intent and 2) approach. The first dimension "intent" corresponds to the sustainability goals firms have, which may be either on the one hand making changes that aid in improving sustainability in the long-term (innovation), or conversely, ensuring that sustainability commitments are attained (fulfilment). As per the second dimension "approach", corporate practices for attaining goals may be formal or informal. Informal approach refers to the practices that aim at strengthening corporate shared values and norms. In contrast, formal approach connotes to guiding the behaviour using rules, procedures and systems. The sustainability embeddedness framework is the combination of the elements of the two dimensions. Thus, there are four combinations of sustainability practices, which are 1) Formal and the intent is fulfilment "Clarifying Expectations", 2) Informal and the intent is fulfilment "Fostering Commitment", 3) Formal and the intent is innovation "Instilling Capacity for Change", or 4) Informal and the intent is innovation "Building Momentum for Change". Consequently, the report went through each combination and the practices it may involve.

shown in Figure 3-1. The reason to that is because as compared to all other documents, A4S clearly specifies the elements of SE in its guidance.

Figure 3-1: The ten main elements to embed sustainability

1. Board and senior management commitment
2. Understanding and analysing the key sustainability drivers for the organisation
3. Integrating the key sustainability drivers into the organisation's strategy
4. Ensuring that sustainability is the responsibility of everyone in the organisation
5. Breaking-down sustainability targets and objectives for the organisation as a whole into targets and objectives which are meaningful for individual subsidiaries, divisions and departments
6. Processes that enable sustainability issues to be taken into account clearly and consistently in day-to-day decision-making
7. Extensive and effective sustainability training
8. Including sustainability targets and objectives in performance appraisal
9. Champions to promote sustainability and celebrate success
10. Monitoring and reporting sustainability performance

Source: The Prince's Accounting for Sustainability Project (2007)

A4S provided a description of few short paragraphs for each of the 10 elements followed by an illustrative example (A4S, 2007). Thus, the first layer of the second step was to extract the indicators of the SE for each category by unpacking the description provided by A4S. For some elements, the A4S description came clear and adequate and was easily extracted into indicators. Conversely, description for other elements came either fairly abstract or could hardly be extracted into indicators. Hence, the latter case, the second layer of the step was implemented. The study used CERES and IFAC documents to be able to extract the indicators that were not clearly mentioned in the A4S document.

An example of the first case would be category 8. Including sustainability targets and objectives in performance appraisal, whereby the description for it was as follows:

A range of techniques can be used to influence behaviour, including training, awareness raising, objective setting, remuneration, promotion and other incentives.

It is essential that sustainability issues are reflected fully when setting objectives, assessing and remunerating staff and considering promotions (A4S, 2007, p. 12).

As category 7 discussed employee training and awareness rising intensively, and to be avoiding double counting, only the incremental points discussed were added. There are two indicators here, 1- sustainability is part of assessment and staff remuneration, and 2- sustainability is part of employee assessment and promoting. The previous points then represented indicators 8.1 and 8.2 on the index.

In contrast, category 6 came less precise and cutting its contents into indicators was less straight forward. Category 6 discusses processes that enable sustainability issues to be taken into account clearly and consistently in day-to-day decision-making. The description was given:

Sustainability factors will not be taken into account by middle-managers and others unless they are given the authority, processes and information to be able to do so. For example, in setting a target for the reduction of greenhouse gas emissions during the production and use of a particular product, the manager concerned will not be able to respond meaningfully unless information about greenhouse gas emissions at each life-cycle stage is given and unless he or she is able to balance the cost of reducing emissions with other factors such as pricing, quality and availability of raw material supply. Equally if he or she does not have the authority to take action then action will be inhibited. There is often confusion about the pros and cons of sustainability approaches even in relatively simple areas.

For example, is more energy saved by using paper towels or electric hand-driers or by flying in fruit from Southern countries or by growing it in the UK in heated greenhouses? It is therefore important to ensure that the relevant information and decision-making processes are available to those having to take sustainability issues into account. It is the process of connecting sustainability related issues and conventional financial criteria that is critical (A4S, 2007, p. 10).

Although the description given was not made in clear points, there were two main aspects that were raised. The first, relates to middle management and employee commitment and empowerment which was discussed in category 4. The second relates to the review and improvement of product and service sustainability. These points were then included as

indicators in the index. Category 6 in A4S was elaborated in IFAC's document by clearly discussing corporate reporting on products sustainability performance and suppliers' sustainability management practices. In turn, they were added as indicators in the index. Same was the case with CERES which stated in a clear cut matter the engagement levels, types and processes. The engagement was mentioned in A4S document in category 2. However, it was discussed in more general and not in distinct points. Hence, the previous process resulted in producing the first endeavour to develop the SE index. The index at this stage consisted of 35 indicators among 10 main categories.

The detailed description for each of the 35 indicator was compiled. Provided that the sample is made up from companies that report under an international guidance (GRI), indicator "reporting in accordance to an international or national framework (guidance) for sustainability" would be scored by all the companies in the sample. Thus, the indicator was omitted as it is indifferent for all companies in the sample. In turn, 34 indicators remained as shown in appendix 3.1.

The indicators were then discussed between the researcher and the two supervisors to ensure the validity of the index and ensure that explanations of the indicators are clearly and distinctly outlined. For example, the previous Indicator 2.7 stakeholder dialogue regarding sustainability was repositioned and rephrased to be 2.9 other stakeholder dialogue. The reason was that the index specifies indicators for many groups of stakeholders and there would be an overlap to include them again in this indicator. The discussion resulted in alterations and expansions to the indicator explanations. For instance, an emphasis for C-level directors in 2.7 and an example to explain indicator 3.2: sustainability as a business case were added. The detailed index explanations are provided in appendix 3.2. After the consultation, the final structure of the binary index is given in Table 3.1. The first column of the index refers to the 10 main categories of SE as covered in A4S. The second column lists the

indicators for each of the 10 main categories. The third column designates the source of the indicator from the three sources A4S, IFAC and CERES used in building the index. In total, the index consists of 34 indicator points from the 10 main index items.

Table 3.1: SE index

	Indicator	Source
1. Board and senior management commitment to sustainability issues	1.1. Board's (CEO/Chairman/CFO or other directors) message on commitment to sustainability	A4S/CERES/IFAC
	1.2. Existence of a sustainability committee/ or audit committee commitment	A4S/CERES/IFAC
	1.3 Identifying sustainability issues in organisation's vision and mission.	IFAC
2. Understanding and analysing key sustainability drivers for the organisation	2.1 Identifying materiality issues in reporting sustainability	A4S
	2.2 Reporting on the financial and operating implication of sustainability	A4S/IFAC
	2.3 Defining and clarifying the terminology the organisation uses (sustainability, corporate responsibility, or CSR) and what it means in relation to the organisation.	IFAC
	2.4 Incorporating environmental and social opportunities and risks into strategy, operations and policies.	IFAC/CERES
	2.5 Identifying organisation's stakeholders and engagement process	IFAC/CERES
	2.6 Investor engagement	CERES
	2.7 C-level engagement	CERES
	2.8 Engaging with suppliers	IFAC/CERES
	2.9 Other stakeholder dialogue	CERES/IFAC
3. Integrating the key sustainability drivers into the organisation's strategy	3.1 Key sustainability drivers incorporated and reflected in the organisation's strategy	A4S
	3.2 Linking sustainability to business case	IFAC
	3.3 Setting qualitative and quantitative goals and targets	IFAC/A4S
	3.4 Commitment to public policy sustainability issues	CERES
4. Ensuring that sustainability is the responsibility of everyone in the organisation	4.1 Employee involvement in sustainability issues	A4S
	4.2 Management commitment to achieving sustainability goals	CERES
5. Breaking-down sustainability targets of the organisation as a whole to subsidiaries, departments and divisions	5.1 Breaking-down sustainability targets of the organisation to its individual subsidiaries and departments.	A4S/CERES
6. Processes enabling sustainability issues to be taken on a day-to-day decision making	6.1 Review products sustainability standards	A4S/IFAC
	6.2 Review products sustainability performance	IFAC
	6.3 Review suppliers' sustainability management practices	IFAC
	6.4 Improve the sustainability performance of products.	A4S/IFAC
7. Extensive and effective sustainability training	7.1 Training employees on sustainability (from inside the company or proving training by a party outside the company)	A4S/CERES
	7.2 Raising awareness of employees	A4S/CERES

8. Including sustainability targets and objectives in performance appraisal	8.1 Sustainability is part of assessment and staff remuneration	A4S/CERES/IFAC
	8.2 Sustainability is part of employee promotion	A4S
9. Champions to promote sustainability and celebrate success	9.1 showcasing of good sustainability practices to encourage future practices and innovation	A4S
10. Monitoring and reporting sustainability performance	10.1 Connecting sustainability performance measures to key financial and general measures (KPIs)	A4S/IFAC
	10.2 Reporting on emissions and energy efficiency	A4S/CERES/IFAC
	10.3 Reporting on wastes	
	10.4 Reporting on water usage	A4S/CERES/IFAC
	10.5 Reporting on finite resource usage	A4S/CERES/IFAC
	10.6 Reporting on the progress made on	A4S/IFAC
	sustainability targets.	A4S/IFAC

Furthermore, another aspect from the discussion was whether the SE index is comparable to the other *de facto* measures of sustainability reporting like GRI guidelines. Hence, the next subsection is devoted to flesh out the similarities and differences that may exist between the SE index and current GRI guidelines.

3.3.2.1 SE index measurement

There are several ways that can be used to weight index indicators. Accounting studies most commonly used two ways of scoring to analyse annual report narratives, which are either nominal (Present/Absent) or categorical scoring (Beattie et al., 2004). In a nominal scoring, an indicator (unit of coding) is assigned a value of 1 if present and 0 if not reported (Beattie et al., 2004) and was used in many CSR related studies (e.g., Haniffa and Cooke, 2002; 2005; Bouten et al., 2011). Ordinal scoring captures the degree of specificity of the item (Beattie et al., 2004) and was also used in prior CSR studies (e.g., Al-Tuwaijri et al., 2004; Cormier et al., 2005). The studies using ordinal weightings and others were mainly in line with an earlier study by Wiseman (1982), whereby a score of +3 was assigned if the item was disclosed quantitatively; +2 if non-quantitative but specific disclosures provided and +1 if the item was covered by general qualitative disclosures (Bouten et al., 2011). Alternatively, Clarkson et al. (2008) used the nominal scoring for part of the index, while using ordinal scores (0-6) for other index points.

Boyatzis (1998) illustrated other ways of scoring are available and applied more broadly in social sciences. The first, frequency scoring, uses the "presence" of the main theme in the first place for the coding of its subthemes. For instance, if the main theme was sustainability forming part of the strategy and was found to be "present" its subthemes as environmental, employee and outside stakeholders may be coded. Hence, the initial presence of the main theme is a key driver for the overall score for the unit of analysis (i.e. company). The second, intensity scoring, captures the frequency of the coding themes within intervals. For example, an intensity scoring will capture the frequency of a theme as quantitative environmental aspects within an interval of 10 pages of an integrated report. The results are expected to show the prevalence of the theme within the set intervals. Intensity scoring is more prevalent in speeches and meetings, whereby frequency of a theme is captured within intervals of a specified number of minutes.

It was suggested that different weighting and the unweighted (nominal in this case) scores may give similar results with a large number of indicators (Beattie et al., 2004). The number of indicators in this study cannot be considered as large when compared to the 46 and 45 items included in Bouten et al. (2011) and Clarkson et al. (2008) respectively. Hence, it can be argued that the choice of a particular scoring type would have an effect on the overall scoring of each integrated report.

The choice of weightings may vary depending upon the reporting company characteristics and decision context (Beattie et al., 2004). Beattie et al. (2004) argue that due to the subjectivity of allocating different scores to the indicators, it is essential to conduct surveys among user groups to assess the importance of each indicator. In fact, Clarkson et al. (2008) engaged an expert in environmental reporting to assist them to develop their content analysis and scoring. Providing varying weights based on the importance of each indicator would inevitably increase the subjectivity of the index as tool used, especially when the area of

research is new with limited prior research (Linsley and Shrives, 2006). This is especially the case with SE and IR, as there is no clear acceptance to the elements included and controversies about levels of importance of different economic, social and environmental elements and their integration (De Villiers et al., 2014). This would result in different individualistic views on indicator importance. Hence, it would be more objective to treat the indicators equally.

The study includes companies from different environmentally sensitive and non-sensitive industries, which would place different emphasis on the indicators resulting in variations in coverage of these indicators across industries. Therefore, Indicators 10.2-10.5 on showing energy efficiency, emissions, wastes, water usage and finite resource use may be more likely to be covered by the environmentally sensitive industries. Having said that, the A4S (2009) provided examples on SE using resources from their participants which were two financial companies and a telecommunication company and one environmentally sensitive utilities company. Additionally, Dao et al. (2011) assert that companies seeking integration in their strategy have to understand and show the environmental and social impacts of their products or services. Therefore, it can be argued that service companies with sustainability thinking would cover the environmental and social aspects to continuously improve on their way of conducting business. Therefore, a nominal (presence/absence) scoring was chosen in this study as a more objective way of studying SE in integrated reports.

3.3.3 Comparing the index developed with well-established *de facto* measures of sustainability reporting (GRI G3.1 and G4)

The study compares and contrasts the SE index to both GRI G3.1 and the most recent G4 guidelines (published may 2013). The reason behind the comparison is to explore how these

indicators are equivalent or dissimilar to the SE index. In so doing, the study provides early insights into showing the SE criteria available in GRI guidelines.

To compare the SE index, the study extracted from G3.1 and G4 the indicators that resembles the indicators included in the SE index developed. Consequently, the study compares the underpinnings of each item under the SE index and each of G3.1 and G4 to demonstrate the similarities and differences between them. An overview of G3.1 and G4 is presented followed by the comparison of SE index to GRI guidelines.

According to G3.1, corporate reports may have an application level of A, B, or C depending on the indicators utilised in the report (GRI, 2011). Additionally, reports that are externally assured are given a plus (+) to the application level. GRI disclosure guidance involves three facets, 1) profile disclosures, 2) performance indicators, and 3) management approach. Profile disclosures, includes disclosure on strategy, report scope, governance, commitments and stakeholder engagement. The second, performance indicators, addresses disclosures on economic, environmental, labour practices and work conditions, human rights, society and product responsibility. It includes core indicators and additional indicators that may be material for some organisations but not others. Disclosures on management approach (DMA hereafter) embraces the organisation's goals, policy, organisational responsibility, employee training and awareness, monitoring and performance follow up.

To obtain a "C level", companies/organisations have to disclose certain profile disclosure indicators. Moreover, the report has to cover any 10 performance indicators from social, economic and environmental aspects. DMA is not required at this application level. For a "B level", organisations cover the remaining profile disclosure indicators, minimum of 20 performance indicator disclosures with at least one indicator covering social, economic, environmental, human rights, labour practices and product responsibility. DMA has to be

reported and it includes disclosures on policy, responsibility, goals, performance monitoring activities and employee training and awareness. For "A Level", organisations are required to report on each of the core performance indicators and any sector required performance indicator. Organisations can specify the reasons for omitting performance indicators with due regard to the materiality.

The application levels on G3.1 were entirely altered in G4 guidelines. Organisations may cover the core GRI requirements, or further disclose the comprehensive G4 requirements, or in fact provide lesser disclosures to the core requirements and state that the report contains standard disclosures from the G4 guidelines. GRI (2013a) explains that the "in accordance" with core option includes the necessary elements that comprise the sustainability report. The comprehensive option builds upon the previous and includes additional disclosures. The guidance included two areas of reporting: 1) general standard disclosures, and 2) specific disclosures. General standard disclosures, as previous, includes reporting on strategy and analysis, organisational profile, material aspects and boundaries, stakeholder engagement, report profile, governance, ethics and integrity. The latter, specific disclosures, includes both DMA and performance indicators. Performance indicators include disclosures on economic, environmental and social (labour practices and decent work, human rights, society and product responsibility). DMA is intended to provide narratives on how the organisation identifies, analyses and responds to the material actual and probable social economic and environmental aspects (GRI, 2013a, p. 45).

To provide a report that is "in accordance" with core G4 disclosures, organisations have to fully cover certain general disclosures, which are organisational profile, material aspects and boundaries, stakeholder engagement, and report profile. Additionally, organisations have to partially cover items from strategy and analysis, governance and ethics and integrity on the general standard disclosures. DMA on material aspects has to be reported. Moreover, at least

one indicator has to be disclosed from each of the economic, environmental, labour practices and decent work, human rights, society and product responsibility. Reporting "in accordance" to the comprehensive option requires fully covering the general disclosures. Moreover, organisations have to report on all performance indicators that are material to them. As in the core option, material DMA is disclosed.

From the above discussion, reporting in accordance with the core option on G4 is to a large extent similar to a B application level on G3.1. Additionally, reporting in accordance to the comprehensive option on G4 is more like an A level of application on G3.1. Thus, it can be noted that the level of disclosure on the G4 has been intensified.

The points extracted from G3.1 and on a later stage G4 that resonate with the indicators of the SE index is given in appendix 3.1. Detailed indicator comparison between the SE index and the GRI guidelines G3.1 and G4 are given in appendix 3.2. Highlights and insights from the comparison of both indexes are given in the paragraphs to follow.

It was found that some SE indicators have no corresponding indicator under GRI guidelines. On the surface, indicator 2.3 about "defining and clarifying the terminology the organisation uses (sustainability, corporate responsibility, or CSR) and what it means in relation to the organisation" did not exist under both GRI guidelines. Additionally, GRI guidance lacks indicators clearly linking sustainability aspects to the business case as on indicator 3.2 on the SE index. A reason could be that GRI is oriented towards being adopted by a wide range of organisations (including: public agencies, universities, other non-for-profits). Moreover, there seems to be no specification to ensure the report shows management commitment to maintaining and achieving sustainability goals as in indicator 4.2 on the SE index. Likewise, there was no stress on requiring sustainability to be part of employee promoting as made in indicator 8.2. The showcasing of corporate good sustainability practices in the report on

indicator 9.1 was not existent under G3.1 or the recent G4 guidelines. Finally, demonstrating connections between sustainability performance and key financial and general indicators on indicator 10.1 was not present under both G3.1 and G4.

Some of the indicators of the SE index were to an extent existent under G4 but not under G3.1. Hence, an improvement concerning SE was recognised in G4 over its predecessor. Indicator 2.7 "C-level directors (CEO/Chairman/CFO) engagement with various stakeholders" was not existent under G3.1. Conversely, indicator G4-37 on G4 covers this issue. One difference between indicator 2.7 and G4-37 on G4 is that the first demonstrates the requisite of top level directorship to engage with stakeholders, while the latter gives the option of delegation of such engagement activity while stating to whom it was handed and whether the stakeholder consultation feedback is reported to the top level directors (GRI, 2013a). Furthermore, indicator 4.1 "reporting on the involvement of employees in sustainability issues" is considered under G4 (item G4-35) but not under G3.1. However, indicator 4.1 views it as part of setting a bottom-up approach to attaining sustainability goals. Conversely, G4-35 establishes employee participation as a top-down approach by putting undue weight on top executives' delegation of authority. Indicator 6.1 on the review of products sustainability standards and indicator 6.3 on the review of suppliers' management practices were non-existent in G3.1 and referred to under G4. Indicator 6.1 was addressed under G4-PR1 which explains reporting on product and service health and safety. Additionally, indicator 6.3 was collectively covered by several items under G4 as shown in appendix 3.2.

Other SE indicators were included under both GRI guidelines, but were treated differently to the SE index. Indicator 1.1 states explicitly that top board members should state their commitment and accountability to sustainability issues, while GRI guidelines ask board members to show the relevance of sustainability to their organisation. Indicator 1.2 required

the existence of a CSR committee or audit committee commitment to sustainability issues, where GRI guidelines are concerned about the disclosing the governance structure (committees, independent directors…etc.) without requiring the establishment of a CSR committee. Indicator 1.3 required the inclusion of sustainability issues in organisation vision and mission, while GRI guidelines ask corporations to disclose their sustainability vision in the board statement. Although GRI guidelines included indicators on stakeholder engagement, they did not specify the aspect of investors' sustainability engagement as covered in SE indicator 2.6. Additionally, indicator 3.1 emphasised the need to show the key environmental, social and economic sustainability drivers in the corporate strategy in an integrated manner, where GRI guidelines did not require such integrated strategic view. Limited guidance was provided on setting quantitative targets as compared to SE indicator 3.3. Likewise, although GRI guidelines emphasise the need to specify the report boundary (departments and/or subsidiaries included), there is limited guidance on sustainability targets break-down by organisational units. Unlike Indicator 6.2 requires companies to show the sustainability performance (emissions, waste, water, energy efficiency… etc.) per product segment, GRI guidelines only cover limited aspects as showing percentage of products recycling and energy reductions on products sold. GRI guidelines cover employee training on human rights and anti-corruption leaving other environmental and social aspects uncovered as compared to SE indicator 7.1 which includes employee sustainability training. Similarly, SE indicator 7.2 on raising awareness of employees on sustainability aspects was only minimally covered under GRI guidelines. Finally, unlike SE indicator 8.1 on including sustainability as part of staff remuneration, GRI guidelines only cover showing details of executive remuneration.

Some SE indicators were, to an extent, comparable with both GRI guidelines. The GRI references were in some cases similar and in the other different from the indicators on the SE

index.[89] For example, indicator 2.1 "Identifying materiality issues in reporting sustainability" was largely in agreement with indicator 3.5 on G3.1 and the materiality principle in G4 guidelines. Additionally, GRI G3.1 only required disclosures on the financial implications of environmental aspects, while G4 broadens the issue to show the financial and operating implications of social and environmental issues as required in SR indicator 2.2. Likewise, indicators on stakeholders' dialogue (2.5, 2.8 and 2.9) were mostly in line with indicators 4.14-16 in G3.1 and G4.24-27 in G4 guidelines. Indicator 6.4 was similar to indicators EN26 and EN27 in G3.1 and G4 respectively. Indicator 3.4 "Commitment to public policy sustainability issues" was similar to S05 and S06 in G3.1 and G4 respectively. Indicators 10.2, 10.3, 10.4 and 10.5 were largely similar to EN16-20, EN22, EN8 and 21 and EN1-2 respectively. Finally, indicator 10.6 "reporting on the progress made on sustainability targets" was largely covered by the GRI guidelines.

The previous comparison shows that the recent G4 is better than G3.1 in covering SE in corporate disclosures. However, it was shown that there are still ample differences to the SE index, which may become less overt if addressed in GRI updated guidelines.

3.4 Instrument validity and reliability

Two important constructs to assess an instrument are to check for its validity and reliability (Bryman and Bell, 2011). These are presented in this section.

3.4.1 Research instrument validity and design

Marston and Shrives (1991, p. 198) outline that the index scores can be considered to be valid if they mean what the researchers intended. Thus, validity refers to issue of whether a set of indicators devised to gauge a concept really measures that concept (Bryman and Bell, 2011, p. 171); this is also referred to as face validity (Bryman and Bell, 2011; Weber, 1985).

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[89] Point-to-point comparison is given in appendix 3.2

In various disclosure studies (e.g., Tsalavoutas et al., 2010), validity of the instrument was checked by independently reviewing and discussing its content. Thus, after constructing the SE index, it was subject to an independent review by the first and second supervisors and comments were discussed among the researcher and the two supervisors. Improvements in rewording of various indicators took place to enhance content clarity and validity as shown in the development of the index. Moreover, the pilot study set as a second tier enhancement for the SE index, before coding the main sample.

Construct validity is obtained through the use of indicators or classification themes that was used in prior research (Beattie et al., 2004). As shown from the SE literature the studies focused on specific areas. Classification themes were developed by large organisational bodies promoting IR and SE as outlined earlier. Thus, the researcher used three documents produced from A4S, IFAC and CERES in order to construct the index to capture SE.

3.4.2 Pilot study sample choice

Baker (1994) denotes that pilot study aids in pre-testing a particular research instrument on a smaller scale in preparation of the main study, to enhance the quality and manage recourses (time/money) on the main study (UN, 2001). Therefore, the application of pilot studies may lead to reforms in the collection process or alterations in the tool used. In this study, the researcher and two supervisors were to independently code two companies drawn from a sample of ten integrated reports. The pilot study sample was drawn from the population of integrated reports and therefore constitutes part of the full sample.[90] At a later stage, meetings were set to discuss the findings and agree upon any discrepancies and alterations, to ensure the reliability and enhance the validity of the SE index used.

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[90] In qualitative studies (for example interviews), pilot study interviews will not become part of the final interview findings, as the interviews in the pilot sample is to tune the formal interviews conducted later. In quantitative research, especially dealing with secondary source data, pilot study sample is selected from the study full sample and is included in the study findings.

The main types of sampling are probability and non-probability (convenience) sampling. The later refers to a sampling procedure that does not give some elements in the population the chance to be in the sample (Daniel, 2012, p. 66) as, for example, selecting the first 10 companies or last 10 companies in the sample on a given base (name, size … etc.). Alternatively, probability sampling is a sampling procedure that gives every element in the target population a known and nonzero probability of being selected (Daniel, 2012, p. 66). As it is vital that the pilot study sample represents the different sub-types included in the full sample, a probability sampling has to be implemented. Probability sampling includes four main sampling types: 1) simple random sampling, 2) systematic sampling, 3) cluster sampling and 4) stratified sampling.[91]

The chosen probability sample technique was the one that supports the aim of the pilot reviewed study which is to have a representative sample of ten integrated reports. For this purpose, a disproportionate stratified sample would best suit this objective. Thus, a company was chosen at random from each of the 10 industry groups according to ICB as follows:

Industry	Company
Basic Materials	Impala Platinum Holdings (Implats)
Consumer Goods	Cermaq
Consumer Services	Southwest Airlines
Health Care	Straumann Holding
Industrials	SKF Group
Oil & Gas	MOL Group
Technology	INDRA SISTEMAS SA
Telecommunications	Belgacom
Utilities	EVN AG
Financials	Cebu Holdings

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[91] The simple random sampling gives each element in the population an equal chance of being chosen (Daniel, 2012, p. 126), regardless to any attributes or characteristics of the companies chosen. In systematic (interval random) sampling, a random selection is made of the first element for the sample, and then subsequent elements are selected using a fixed or systematic interval until the desired sample size is reached (Daniel, 2012, p.145). Thus, the way in which the companies were ordered would have an effect on the sample chosen. In cluster sampling, elements of the population are randomly selected in naturally occurring groupings (clusters) (Daniel, 2012, p.151). Thus, data can be clustered by geographical regions as continents or countries. Then companies will be chosen at random from each cluster using a simple random or systematic sampling. In stratified (quota random) sampling the target population is first separated into mutually exclusive, homogeneous segments (strata), and then a simple random sample is selected from each segment (stratum) (Daniel, 2012, p.131). Strata can be defined as companies industries; whereby, companies included under each stratum will belong to one industry type and would be homogeneous in nature. Stratified sample can be proportionate allocating the companies in the sample in proportion to the size of the strata (industry) to the population, or disproportionate allocating the companies in the sample in a disproportionate order to the size of the strata to the population (Daniel, 2012).

3.4.2.1 Reliability of the research instrument

As Marston and Shrives (1991, p. 197) outlined, the index scores awarded to companies can be considered to be reliable if the results can be replicated by another researcher. Thus, reliability of a research instrument relates to the consistency of findings if repeated on different periods or replicated by other researchers (Saunders et al., 2012; Bryman and Bell, 2011; Marston and Shrives, 1991). This feature of reliability is called inter-coder reliability (Beattie et al., 2004). Another fundamental feature of reliability is stability, which relates to the extent to which the coder produces consistent results when coding the same content (Krippendorff, 1980).

In voluntary disclosure studies, various ways were utilised to check the reliability of the instrument used. Haniffa and Cooke (2002; 2005) checked the disclosure index reliability by placing emphasis solely on the stability feature. In both research papers one author coded the data. Haniffa and Cooke (2005) reported that only one author coded all annual reports and constructed the coding rules to ensure the instrument consistency and reliability. Furthermore, Mohd Ghazali and Weetman (2006) utilised a similar technique to the previous studies (i.e. only one author coded the data), but coded all annual reports twice. In cases were variations between the two scores happened, a third assessment for the annual report was undertaken. Likewise, Haji (2013) utilised a similar technique to Mohd Ghazali and Weetman (2006), whereby only one researcher coded the data twice leaving a time interval of two weeks between the first and the second trial.

Bouten et al. (2011) utilised a technique that includes both features of reliability (inter-coder reliability and stability). The study involved three coders who were the principal coder and two assistants. Five annual reports were coded over two rounds until the coders produced the same results. Additionally, all annual reports were coded by the three coders, but the adjustments were only made by the principal coder. In this process, the principal coder

wanted to ensure the other two coders were able to code the data similarly. Other studies which utilised automated software to code the data, suggested that reliability, validity and objectivity of the measures stem from the automated nature of the software (e.g., Cho et al., 2010; Elshandidy et al., 2013).

Many disclosure studies utilised the inter-coder reliability feature when addressing the reliability of the instrument (Debreceny et al., 2003; Linsley and Shrives, 2006). Linsley and Shrives (2006) coded a small sample of firms using risk reporting content analysis and any differences arising resulted in producing decision rules for them. As Linsley and Shrives (2006, p. 393) assert, reliability can be improved by producing decision (disambiguation) rules that the coder can refer to.

The study employed both the inter-coder and stability features in order to check and enhance the instrument reliability. After coding the 10 companies initially selected for the pilot study, 2 companies were selected by the supervisors. In order to ensure stability of coding, the researcher coded the 2 selected companies again and the results were consistent in both cases. The inter-coder reliability check happened on two rounds where one company was coded by the researcher and two supervisors at every round. In the first company the two supervisors coded the data based on the index 34 indicators without the assistance of the detailed code. Admittedly, differences resulted from confusions around indicators, whereby all the arising confusions were taken into account as shown below.

Indicator 2.7 C-level engagement was rephrased to be CEO/Chairman/CFO engagement to make it clearer. However, the C-level term was emphasised in the detailed code. The researcher coded indicator 3.3 about setting sustainability targets as existent if the company set quantitative sustainability targets. This is backed with the recommendations of A4S the need to quantify sustainability targets and disclose them along with the qualitative

sustainability targets. The wording of the indicator was less accurate and had to be 3.3 setting quantitative goals and targets alongside with the qualitative sustainability targets set. Additionally, indicator 2.2 was reworded to be reporting on the financial and/or operating implications of sustainability. Same was the case with indicator 2.4 incorporating environmental and social opportunities and/or risks into strategy, operations and/or policies. This was to avoid the issue of having companies reporting on their sustainability opportunities and/or risks, but not being included because it was only reflected in the strategy, operations or policies.

The second company in the pilot study was then coded by the researcher and the two supervisors after referring to the detailed code. Any differences were discussed and decision rules set in coding these indicators as outlined below. Indicator 3.1 on sustainability drivers incorporated in the strategy was coded by the researcher only if it was part of the overall corporate strategy. However, companies may disclose their sustainability strategy in a section of its report while linking it to the overall strategy. The decision rule here was to accept the latter as a disclosure of indicator 3.1. Moreover, indicator 10.5 on reporting on finite research use, the decision rule was that quantification of non-renewable fossil fuels (petroleum, coal, natural gas, oil...etc.) and ozone depleting substances used are included under this indicator. The company included a link to additional information reported on its website, where the information on these SE was not included in the integrated report. The consensus here was not to include the information that it provided via external link as the integrated report as a document needs to incorporate the information. It was agreed to take a note on the companies that with similar instances and the number of indicators affected.[92]

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[92] Three other companies had similar instances. However, only one indicator was affected in two of them and two indicators were affected in the third case.

The pilot study, discussions and decision rules were very important to ensure the index reliability and validity before it is applied to the main study sample. Additionally, similar to previous disclosure studies (e.g., Haniffa and Cooke, 2002; 2005), before coding the report the researcher had an overview read to the annual report (i.e. reading the titles, subtitles and parts of the text). The reason is to enhance reliability of coding as the researcher becomes more informed about the document being coded.

3.5 Sample utilised

The study uses a sample of 143 integrated reporters in 2010 (Table 2.7), which have firm characteristics data available from DataStream. The integrated reports[93] were downloaded using the corporate websites or from the Corporate Register website. From the 143 integrated reporters in 2010, seven companies did not produce their reports in English. A table showing these companies and the reports produced is shown in appendix 3.3. Additionally, the titles used by integrated reporters for their reports are shown in appendix 3.4. Hence, the final sample included 136 integrated reporters. Consequently, the distribution of these companies by country and industry is given in the Table 3.2 panel (a) and (b), respectively.

Table 3.2: Sample distribution

Panel (a): By country

Country	Integrated Reporters	(%)	Country	Integrated Reporters	(%)
Australia	4	(2.9%)	Jordan	1	(0.7%)
Austria	2	(1.5%)	Netherlands	8	(5.9%)
Belgium	2	(1.5%)	New Zealand	1	(0.7%)
Brazil	11	(8.1%)	Norway	7	(5.1%)
Canada	2	(1.5%)	Philippines	4	(2.9%)
Colombia	1	(0.7%)	Poland	1	(0.7%)
Denmark	1	(0.7%)	Portugal	3	(2.2%)
Finland	7	(5.1%)	South Africa	33	(24.3%)
France	2	(1.5%)	Spain	12	(9.3%)
Germany	3	(2.1%)	Sri Lanka	1	(0.7%)
Greece	1	(0.7%)	Sweden	9	(6.6%)
Hungary	1	(0.7%)	Switzerland	6	(4.4%)
Italy	3	(2.2%)	UK	3	(2.2%)
Japan	4	(2.9%)	USA	3	(2.2%)
			Total	136	100%

[93] If a company published more than one report, the report determined by the company (on the GRI report list) as an integrated report was the one used.

Panel (b): By industry

Industry	Integrated Reporters	Percentage
Basic Materials	24	17.65
Consumer Goods	8	5.88
Consumer Services	9	6.62
Financials	27	19.85
Health Care	7	5.15
Industrials	31	22.80
Oil & Gas	8	5.88
Technology	4	2.94
Telecommunications	6	4.41
Utilities	12	8.82
Total	136	100%

3.6 Descriptive findings of the SE index

The main purpose of descriptive quantitative research is to attain an accurate profile on the matter studied (Saunders et al., 2012). Although descriptive research may yield interesting findings, it may be less valuable unless it's coupled by further explanations and insights (ibid.). Thus, the study presents insights from showing exemplary on how SE indicators were reported by integrated reporters. However, such explanations have to be interpreted with caution due to the relatively small sample sizes.

Table 3.3 shows the frequencies of companies by SE index coverage. The overall SE score for each company was divided by the total number of indicators (34) to get the percentage coverage. As shown, all companies scored more than 10% of the indicators, where the lowest company covered 11.76% of the indicators. Likewise, none of the companies scored more than 90% with the highest score being 88.24%. Around 74% of the companies covered between 40% to less than 70% of the index points. Only 2% scored less than 20% index coverage, and on the contrary, 5% scored 80% index coverage or more. The mean (median) score was 54.4% (55.9%), and the standard deviation was 17.61% (i.e. about 6 indicators).

Table 3.3: Frequency table for integrated reporters SE index scores represented in percentage coverage

% coverage		No. of Companies	Percent
Less than 10%		0	0.00%
10% to less than 20%		3	2.21%
20% to less than 30%		10	7.35%
30% to less than 40%		15	11.03%
40% to less than 50%		24	17.65%
50% to less than 60%		26	19.12%
60% to less than 70%		27	19.85%
70% to less than 80%		24	17.65%
80% to less than 90%		7	5.15%
90% to 100%		0	0.00%
		N=136	100%
Mean score	54.38%	Minimum 11.76%	Standard Deviation
Median	55.88%	Maximum 88.24%	17.61%

The frequencies in Table 3.3 are for all 136 companies in the sample with no categorisation based on country and industry. Hence, the median coverage scores by country and industry are shown in Figure 3-2 and Figure 3-3 respectively. The study uses the median as a measure of central tendency for country and industry figures as the mean will suffer from the existence of outliers especially in countries represented by a small number of firms (Wooldridge, 2009; Bryman and Bell, 2011).

The median index coverage by country with two or more integrated reporters is given in Figure 3-2. The highest coverage was noticed by integrated reporters in Germany (76.47%), Philippines (75.00%) and Portugal (70.59%). In contrast, the lowest coverage was represented by Japan (40.71%), the UK (44.12%) and both Canada and Norway (47.06%). Looking at the countries with more than 5% representation in the sample, integrated reporters from South Africa scored 50.00%, Spain 63.24%, Brazil 61.76%, Sweden 52.94%, Switzerland 51.47% and the Netherlands 69.12%. Thus, South Africa, Sweden and Switzerland scored below median coverage of (55.88%), while the Netherlands, Spain and Brazil scored above median. Results here are consistent with Bondy et al. (2004) who found

that German companies differed from other groups of corporations as they embedded CSR codes of conduct into their corporate culture.[94]

Figure 3-2: Summary of median SE index coverage scores by country [95]
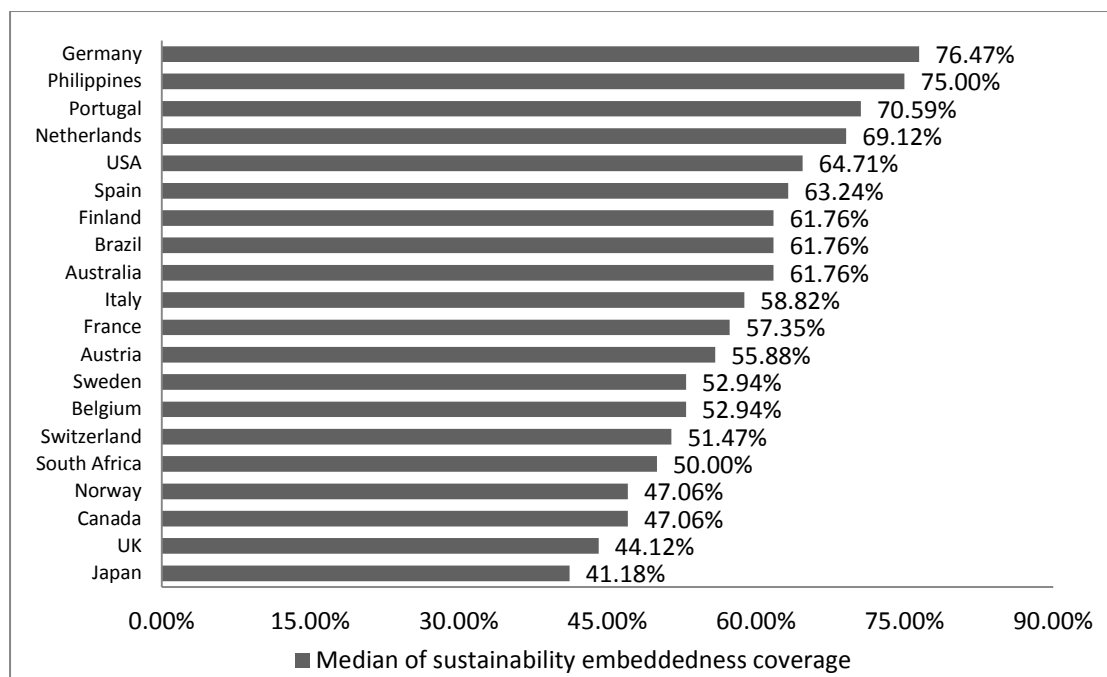
CSR is believed to be more advanced in the UK than in the US (Aguilera et al., 2006). However, in particular reference to integrated reporters, the limited companies producing integrated reports in the US scored higher than the UK companies. Both, countries started having integrated reporters recently in 2009. Noteworthy, the IIRC, as the main promoter of IR, is a UK organisation that was called for establishment in December 2009 (Flower, 2014). Hence, it may be tentatively concluded that the weaker scores for the UK integrated reporters are driven by the need to show a differentiation in reporting rather than embracing better reporting. Conversely, the US integrated reporters have above median SE scores, suggesting that these companies better reflect on their SE in their reporting. The previous is consistent with the argument that US firms are more driven by an explicit CSR motives (Matten and Moon, 2008; Kolk, 2005).

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[94] Bondy et al. (2004) studied why corporations used CSR codes of conduct.
[95] Countries which are represented by only one company were not included in the graph (see Table 3.2).

Scandinavian countries were among the first to have integrated reporters. However, the results show that only Finnish integrated reporters scored above median. Norway and Sweden were having lower than median SE scores. Additionally, there are high discrepancies between the lower and higher scores between integrated reporters in both countries as shown in appendix 3.5. Hence, the previous tentatively suggests that not all companies embed sustainability into their reporting and that some decouple these good practices while only placing emphasis on the perceived production of an integrated report.

Median of SE index coverage scores by industry are given in Figure 3-3. Two industries scored above the median score of (55.88%), which were: utilities (66.18%) and oil and gas (58.82%). Both basic materials and industrials had exactly the median score of (55.88%). Conversely, six industries scored below average, namely: consumer services (47.36%), technology (48.53%), consumer goods and financials (50.00%), health care (52.94%) and telecommunications (54.41%). Furthermore, lowest, highest, mean and median SE scores by industry are given in Table 3.4. The industry with the lowest absolute score was health care (11.76%), followed by basic materials and utilities with scores 14.71% and 17.65% respectively. Alternatively, industrials and consumer goods had the highest absolute scores of 88.24%. Notably, all the industries had high discrepancies between their highest and lowest scores. In exception, oil and gas and technology had the least variation between the two extremes. Some industries had exactly equal mean and median scores, whereas in others, the mean was higher/lower than median scores as a result of high/low outlier values.

Basic materials and oil and gas are considered environmentally sensitive industries (Cho et al., 2010).[96] Median results show that oil and gas integrated reporters scored above median,

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[96] Cho et al. (2010) consider environmentally sensitive sectors are: oil and gas extraction and petroleum refining (both are under the oil and gas industry), chemicals, paper, primary metals and metal refining (all under the basic materials industry).

while basic materials integrated reporters were exactly at the median. However, both were among the highest industries in SE disclosure scores.

Figure 3-3: Summary of median SE index coverage scores by industry
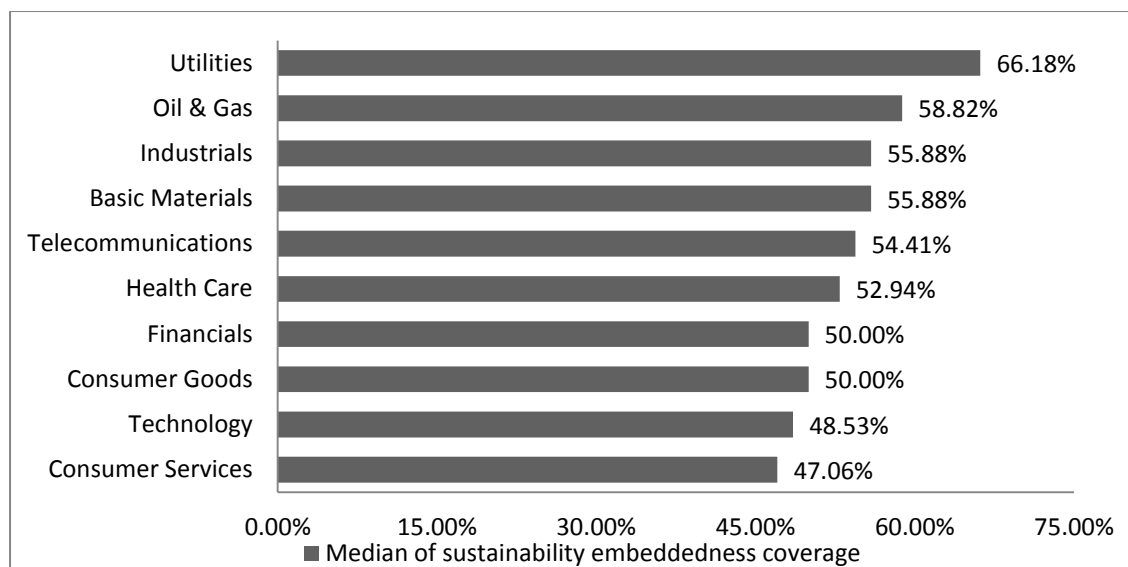
Table 3.4: Summary statistics of SE scores by industry

Industry	Maximum number of items (score as %)	Minimum score (%)	Mean (%)	Median (%)
Basic Materials	28 (82.35%)	5 (14.71%)	20.00 (58.82%)	19.0 (55.88%)
Consumer Goods	30 (88.24%)	11 (32.35%)	18.50 (54.41%)	17.0 (50.00%)
Consumer Services	27 (79.41%)	9 (26.47%)	17.33 (50.98%)	16.0 (47.06%)
Financials	28 (82.35%)	7 (20.59%)	17.04 (50.11%)	17.0 (50.00%)
Health Care	23 (67.65%)	4 (11.76%)	16.00 (47.06%)	18.0 (52.94%)
Industrials	30 (88.24%)	7 (20.59%)	18.84 (54.36%)	19.0 (55.88%)
Oil & Gas	25 (73.53%)	15 (44.12%)	20.00 (58.82%)	20.0 (58.82%)
Technology	26 (76.47%)	15 (44.12%)	18.50 (54.41%)	16.5 (48.53%)
Telecommunications	26 (76.47%)	8 (23.53%)	17.83 (52.45%)	18.5 (54.41%)
Utilities	29 (85.29%)	6 (17.65%)	20.75 (61.03%)	22.5 (66.18%)

Table 3.5 shows the aggregate number of companies reporting each SE indicator. Several indicators were widely covered by integrated reporters. Indicator 1.1 CEO/Chairman message of commitment to sustainability was scored by 116 companies representing 85.3% (116/136) of the total sample. Followed by indicator 2.9 other stakeholder dialogue which was covered by 114 companies (83.8%), then indicator 10.2 reporting in emissions and energy efficiency, covered by 83.1% of integrated reporters. Conversely, several indicators were hardly reported by firms. For example, indicator 8.2 on making sustainability as part of employee promoting

was only covered by 1 integrated reporter. Additionally, breakdown of sustainability targets by subsidiaries and departments (indicator 5.1) is only covered by 34 integrated reporters (i.e. 25% of the sample). Furthermore, indicator 2.7 CEO/Chairman engagement on sustainability aspects was covered by 31 companies (22.8%) and indicator 2.3 defining sustainability meaning in relation to the company is covered by 35 companies (25.7%). Moreover, less than 30% reported indicator 8.1 on sustainability being part of remuneration.

By the same token, the 10 elements/ categories of SE were not evenly reported by firms. 73.4% of the companies covered category 9: Champions to promote sustainability and celebrate success. Additionally, categories 1: Board and senior management commitment to sustainability issues, 3: Integrating the key sustainability drivers into the organisation's strategy and 10: Monitoring and reporting sustainability performance, had an average coverage of more than 60%. Alternatively, category 8: Including sustainability targets and objectives in performance appraisal, and category 5: Breaking-down sustainability targets of the organisation as a whole to subsidiaries, were covered by 14% and 25% respectively. A further discussion per indicator is provided in the next section.

Table 3.5: Summary of SE Index Scores for all companies

Category	Indicator	N*	%(N/136)
1. Board and senior management commitment to sustainability issues	1.1. Board's (CEO/Chairman/CFO or other directors) message on commitment to sustainability	116	85.29%
	1.2. Existence of a sustainability committee/ or audit committee commitment	73	53.68%
	1.3 Identifying sustainability issues in organisation's vision and mission.	81	59.56%
	Category 1 mean score		66.18%
2. Understanding and analysing key sustainability drivers for the organisation	2.1 Identifying materiality issues in reporting sustainability	69	50.74%
	2.2 Reporting on the financial and/or operating implication of sustainability	97	71.32%
	2.3 Defining and clarifying the terminology the organisation uses (sustainability, corporate responsibility, or CSR) and what it means in relation to the organisation.	35	25.74%
	2.4 Incorporating environmental and social opportunities and/or risks into strategy, operations and/or policies.	100	73.53%
	2.5 Identifying organisation's stakeholders and engagement process	107	78.68%
	2.6 Investor engagement	45	33.09%
	2.7 CEO/Chairman/CFO engagement	31	22.79%
	2.8 Engaging with suppliers	82	60.29%
	2.9 Other stakeholder dialogue	114	83.82%
	Category 2 mean score		55.56%
3. Integrating the key sustainability drivers into the organisation's strategy	3.1 Key sustainability drivers incorporated and reflected in the organisation's strategy	97	71.32%
	3.2 Linking sustainability to business case	87	63.97%
	3.3 Setting quantitative goals and targets alongside with the qualitative sustainability targets set	83	61.48%
	3.4 Commitment to public policy sustainability issues	88	64.71%
	Category 3 mean score		65.26%
4. Ensuring that sustainability is the responsibility of everyone in the organisation	4.1 Employee involvement in sustainability issues	60	44.12%
	4.2 Management commitment to achieving sustainability goals	53	38.97%
	Category 4 mean score		41.54%
5. Breaking-down sustainability targets of the organisation as a whole to subsidiaries, departments and divisions	5.1 Breaking-down sustainability targets of the organisation to its individual subsidiaries and departments.	34	25.00%
6. Processes enabling sustainability issues to be taken on a day-to-day decision making	6.1 Review products sustainability standards	56	41.18%
	6.2 Review products sustainability performance	50	36.76%
	6.3 Review suppliers' sustainability management practices	74	54.41%
	6.4 Improve the sustainability performance of products.	79	58.09%
	Category 6 mean score		47.61%
7. Extensive and effective sustainability training	7.1 Training employees on sustainability (from inside the company or proving training by a party outside the company)	84	61.76%
	7.2 Raising awareness of employees	69	50.74%
	Category 7 mean score		56.25%
8. Including sustainability targets and objectives in performance appraisal	8.1 Sustainability is part of assessment and staff remuneration	37	27.21%
	8.2 Sustainability is part of employee promotion	1	0.74%
	Category 8 mean score		13.97%
9. Champions to promote sustainability and celebrate success	9.1 Showcasing of good sustainability practices to encourage future practices and innovation	101	74.26%

10. Monitoring and reporting sustainability performance	10.1 Connecting sustainability performance measures to key financial and general measures (KPIs)	57	41.91%
	10.2 Reporting on emissions and energy efficiency	113	83.09%
	10.3 Reporting on wastes	96	71.11%
	10.4 Reporting on water usage	90	66.18%
	10.5 Reporting on finite resource usage	63	46.32%
	10.6 Reporting on the progress made on sustainability targets	95	69.85%
	Category 10 mean score		62.99%
	Aggregated (average) embeddedness score		18.51
	Percentage coverage		54.38%
* N: denotes to the number of companies reporting each indicator			

3.7 SE disclosures in the integrated reports: a discussion using exemplars

This section elaborates on the SE index findings in Table 3.5 while presenting exemplars for the disclosures made by integrated reporters for every SE indicator. The section also shows the extent of SE disclosures by integrated reporters were in-line with the recommendations from studies on SE.

Indicator 1.1: Board's (CEO/Chairman/CFO or other directors) message on commitment to sustainability, was the widest covered indicator on the index with 116 (85.3%) companies reporting it. Ballou et al. (2012) found that around 72% of board members places sustainability at a priority level. Hence, results show that integrated reporters place higher priority to sustainability. The statement of commitment came as part of CEO/Chairman/CFO message to stakeholders. CEO/Chairman commitment was made on different sustainability aspects. For instance, the chairman of the South African firm Altron stressed commitment to environmental sustainability:

Our group's commitment towards the environment, which falls under the "On Envirowatch" banner, quantifies our organisation's total carbon dioxide and other greenhouse gas emissions. At Altron, we aim for complete transparency, and, as a result, our group-wide environmental policy has become an integral part of our strategic policy aimed at a balanced and harmonious integration of business, environmental and societal interests (Altron Integrated Annual Report 2010, p. 30).

Others provided commitment to product and/or service sustainability. For example, the CEO of the Belgian company Belgacom stated:

I aim to further embed CSR and sustainability in our customer offering and marketing, in order to enable a more accessible and safe digital society on the one hand, and to help our customers reduce their environmental footprint on the other (Belgacom 2010 Annual Report, p. 6).

Some integrated reporters highlighted the commitment to both social and environmental sustainability.

Indicator 1.2 was the least commonly reported by companies among category 1 indicators, where 53.7% of integrated reporters disclosed having a sustainability committee/ or commitment of the audit committee to sustainability aspects. The indicator was chiefly reported as part of the corporate governance narratives in the integrated report. Findings show that companies not having a sustainability/CSR Committee did not substitute that by ensuring audit committee oversee to sustainability aspects. Alternatively, for these companies the CEO/Chairman ensured that sustainability aspects were overseen by them.

The majority of cases disclosed the role of the CSR Committee in overseeing sustainability matters. For instance, the Portuguese company Banco Espirito Santo reported that:

The Sustainability Committee defines BES Group's Sustainability Plan, monitors and supports its implementation, and reports on these activities to the Executive Committee. This Committee is formed by the following members of the Executive Committee ... (BES Annual Report, 2010, p. 208).

In a case, sustainability related tasks were handed to the audit committee. For example, the South African company Clicks Group Limited stated that:

The audit committee and risk committee were combined ... has been extended to incorporate the relevant audit and risk-related aspects of King III, as well as responsibility for governance and environmental sustainability (Clicks Group Limited Annual Report 2010, p. 39).

Vilanova et al. (2009) assert that when CSR is embedded internally, the corporation may stimulate changes in its business values and processes, which results in altering its mission to consider CSR. In the sample, 81 (59.6%) integrated reporters identified sustainability issues

in their vision and mission, as in **indicator 1.3**. Companies either disclosed sustainability

issues in the mission only, vision only or both vision and mission statements. For example,

Belgacom, stated under "Our Vision" that:

We aim at creating value for all our stakeholders through sustainable growth, fully in line with our CSR commitments. We believe our future business success relies on making a positive impact on economic, technological and social progress through our activities and winning the trust of our stakeholders. CSR is therefore embedded in our corporate identity and strategy….

Our ambition is to be recognized as a leading responsible company in Belgium (Belgacom 2010 Annual Report, p. 22).

Overall, category 1: *Board and senior management commitment to sustainability issues*, was

highly popular to be disclosed by on average 66.2% integrated reporters.

Category 2 received medium coverage among integrated reporters, whereby the average

coverage was 55.6%. The indicators of this category varied widely in terms of corporate

uptake. While, indicators 2.9 and 2.5 were covered by 84% and 79% of the companies

respectively, only around one quarter of them covered indicators 2.3 and 2.7.

Indicator 2.1: *Identifying materiality issues in reporting sustainability* was reported by 51%

of the integrated reporters. In a few occasions, companies directly stated the material

sustainability aspects for them. For example, the South African company Anglo Platinum

mentioned:

The Company's most material sustainability issues are ongoing financial sustainability; safety and health performance; compliance with regulatory and minerals legislation; access to energy, water and land resources; and community impacts and expectations (Anglo Platinum 2010 Annual Report, p. 42).

Overall, most companies presented a materiality matrix, mainly based on two parameters,

which are importance of sustainability issue to stakeholders and its impact on the company.

This materiality matrix was mainly a result of a research involving stakeholders, strategic planning and consultation. To give an example, the Brazilian company Duratex reported that:

Taking the sample of 44 participants – three shareholder five clients; eight suppliers; two press representatives; 11 employees; six representatives from surrounding communities; five representatives from the legislative, executive and judiciary powers, and four from organised civil society – 69 themes were defined for analysis. Distributed among Governance, Commitments and Engagement (8); Economic Themes (9); Environmental Themes (14); and Social Themes – Labour Practices and Decent Work (12); Human Rights (7); Society (10); and Responsibility for the Products (9) – and based on the cross-referencing of the average assessments made by the interested public audiences (group and individual) with average valuations made by the top management and executive board of the Company, a Matrix of Materiality was drawn up, which shows the degree of the importance of the 69 themes analysed (Duratex SA Annual Report 2010, p. Cover).

Around 71% of the companies provided disclosures on **Indicator 2.2**: *reporting on the financial and operating implication of sustainability*. Some focused on the operating repercussions while others focused on financial implications. The Danish company Delta Lloyd switched its own operations and its leased operations to use green energy:

In 2010, a study was carried out to establish whether the locations leased from third parties can also switch to green energy. ... . In 2011, Delta Lloyd Group will request the landlords of the Mondriaan tower and the building in Helmond to switch to green electricity. In 2011, a decision will be taken about the connection of OHRA's office building to the district heating station in Arnhem, which will immediately reduce CO2 emitted (Delta Lloyd Annual Report 2010, p. 141).

Companies also disclosed on their financial liabilities or contributions to sustainability aspects. The Spanish company Antena 3 showed the expenses on environmental matters and listed the actions it undertook in its operations to invest in improving environmental aspects:

The investments and expenses related to protecting the environment allow the Antena 3 Group to show its commitment in this area. In 2010, the company has spent a total of 105,300 Euros on environmental investments, which have been aimed at gradually improving the facilities, preventive maintenance and regulatory compliance. Specifically, the following actions were taken: ... in 2010 the environmental expenses totalled 39,200 euros, and were mainly used to: Maintain the boilers; Inspect emissions ... (Antena 3 Annual and Corporate Responsibility Report 2010, p. 98).

Additionally, some companies also incorporated sustainability into corporate operating and financial decisions. Belgacom factored in CSR criteria in undertaking operations and outsourcing decisions:

 In 2010, we defined a process to include a 5% weighting of CSR criteria in our projects and sourcing. Our decision to embed CSR criteria… (Belgacom Annual Report 2010, p. 64).

Interestingly, **Indicator 2.3**: *Defining and clarifying the terminology the organisation uses (sustainability, corporate responsibility, or CSR) and what it means in relation to the organisation*, was only reported by quarter of the companies. Integrated reporters provided the definition either as part of the main report or within the glossary/definitions section. The Danish company TNT defines corporate responsibility as follows:

Corporate responsibility is the umbrella term for the obligation a company has in considering the social (CSR) and environmental (sustainability) impact of its activities and to go beyond this obligation in the treatment of economic, environmental and social activities to sustain its operations, financial performance and ultimately its reputation (TNT Annual Report 2010, p. 253).

Similarly, the South African company Exxaro Resources provided a definition to sustainability in its integrated annual report:

Sustainability is generally defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." For Exxaro this means ensuring we do not undermine the capacity of the natural environment to provide services, and that we do not contribute to any instability in the communities in which we operate (Exxaro Resources Integrated Annual Report 2010, p. 14).

Indicator 2.4: *Incorporating environmental and social opportunities and/or risks into strategy, operations or policies* was reported by 71.5% of the sample. The majority incorporated climate change as the main environmental risk into their strategy, operations or policies. Additionally, some companies reported climate change as an environmental opportunity rather than a risk element. Other environmental and social opportunities and risks were also outlined. The South African company Merafe Resources listed on page 16 of its

annual report the environmental challenges and risks, followed by the environmental management principles and objectives, and the environmental policies to the challenges ahead. More comprehensively, the Finnish firm Citycon devoted page 51 of its 2010 Annual and Sustainability Report to show the key impacts, risks and opportunities related to both environmental and social sustainability, while relating them to its operations, policies and aims. For instance, while disclosing on risks on land use, Citycon linked them to the current operations:

Land use and construction involve the threat of disrupting biodiversity. In most cases, an environmental impact assessment, which also includes a biodiversity assessment, is conducted in connection with zoning and major projects (Citycon Annual and Sustainability Report 2010, p. 51).

Indicators 2.5-2.9 cover the corporate stakeholder identification and its various engagements with stakeholder groups. **Indicator 2.5**: *Identifying organisation's stakeholders and engagement process* was covered by 78.7% of integrated reporters. Several companies provided a list of key stakeholders and channels of communication. Furthermore, some companies developed a process for identifying their key stakeholders and listed them based on their importance. For instance, the German firm Solarworld AG showed a list of its key stakeholders followed by detailing the means of identification and selection. Noteworthy, the company relied on an academic book by Mason and Mitroff (1981), while developing the criteria of stakeholder group selection, as narrated below:

Stakeholder groups

The stakeholder groups involved in the decisions taken by SolarWorld are primarily employees, customers (wholesalers, installers, but also end users), SolarWorld Group suppliers, banks/creditors and governments/agencies. Shareholders and investors are included as stakeholders in this section. Other stakeholders included here are analysts and brokers as intermediaries, NGOs, competitors, local residents, associations and trading communities, employees' representatives or organizations, the press and interested members of the public.

Selection of stakeholder groups

Based on Mason and Mitroff, 1981, and the criteria of the AccountAbility Standards AA 1000 SES, we use the following questions to determine the stakeholder groups for our activities: Who are we responsible for (in legal/financial/operational terms)? Who is directly or indirectly affected by/dependent on our activities or the impact of such activities? Who is in a position to influence (hamper/promote) or decide about implementation of our activities? Who are we in close contact with or maintain close relationships with? Who has voiced their opinion on issues of relevance to us? Which groups (formed by demographic or other characteristics) are likely to be interested in our activities and the results of these activities? (Solarworld Annual Group Report 2010, p. S35)

Generally, all companies engaged with shareholders over stock related and financial performance. However, only 33% engaged with their shareholders and particularly institutional shareholders over sustainability aspects as in **indicator 2.6**. In some cases, engagement with stakeholders was to promote shareholder understanding to social and environmental matters. For instance, The US firm American Electric Power narrated that:

Our challenge remains that many investors and analysts still focus on quarterly earnings rather than long-term performance related to sustainability. .. We continue to explain our sustainability agenda with traditional investors while also meeting the social objectives of SRIs (American Electric Power 2010 Accountability report, p. 44).

Some companies aimed at getting investor opinions on sustainability matters. For instance, the Swedish company Billerud AB held several meetings with investors to seek their opinions on sustainability:

During the year three separate meetings on sustainability issues were held with investors and analysts. .. It is important that the business is healthy from a social perspective and is characterised by proactivity. It is also important that work on sustainability addresses the entire impact of the products. It was pointed out that taking the natural environment into account is a key question from the point of view of sustainability. A clearer link to the challenges in the area of human resources and the targets set was desired (Billerud AB Annual Report 2010, p. 40).

Although indicator 1.1 *CEO/Chairman/CFO commitment of sustainability aspects* was highly reported, corporate CEO/Chairman/CFO engagement was less the case as 22.8% reported **indicator 2.7**. Hence, suggesting that in fewer cases corporate top level officers engages

directly on sustainability issues. For example, the German company PUMA held an annual retreat that was joined by its CEO and a group of NGO's to discuss different sustainability topics:

Approximately seventy participants joined PUMA's CEO, Jochen Zeitz, and PUMA senior staff at the meeting, including NGO representatives from Greenpeace, WWF, Oxfam, Clean Clothes Campaign, Fair Labor Association, Transfair and the Asian Floor Wage Campaign.

The PUMA Talks at Banz are a unique event in that they bring an unusually wide range of internal and external stakeholders together for an annual retreat. This allows for broad and deep consultations and PUMA is to be congratulated for fostering such candid discussions (PUMA Annual Report 2010, p. 18).

Similarly, The Danish company Novo Nordisk held an event to discuss and improve the Novo Nordisk Way, which is a set of guidelines and principles to help embed Novo Nordisk vision to its employees (Dey and Burns, 2010). Novo Nordisk (2010) stated:

The continued relevance of the Novo Nordisk Way was reaffirmed during 2010. ... CEO, Lars Rebien Sørensen took the opportunity to revisit the document. ... he set out on a journey to engage with employees and stakeholders to seek their inputs on what to retain and what to renew. The journey took him to seven destinations and face-to-face meetings with more than 350 employees and 100 patients, healthcare providers and other stakeholders (Novo Nordisk Annual Report 2010, p. 23).

Indicator 2.8: *Engagement with suppliers* was disclosed by around 60.3% of the companies. Some companies engaged with supplies by initiating projects that enhance the suppliers' sustainability practices and contribute to the local development of the supplier community. The Brazilian firm Natura provided a list of its projects on the development of its supplier communities on page 67 of Natura Report 2010. Moreover, on its supplier relations the company narrated:

Natura's relationship with the supplier communities ... involves the promotion of actions geared towards sustainable local development. We try to invest in projects that strengthen the social fabric of the communities and help in matters such as environmental conservation, cultural promotion and the improvement of local infrastructure.

One example is the partnership with the Federation of Agencies for Social Welfare and Education (FASE) and Labor, in Benevides, which has generated a series of training courses for local producers (Natura Report 2010, p. 67).

Some suppliers' communication was to enhance the sustainability practices and ensure that suppliers meet the standards set. For instance, the German company BASF illustrates to suppliers the importance of labour and social practices:

One of the most important measures to minimise risks in our supply chain is our Supplier Days. At these events, we illustrate to suppliers the importance of internationally recognised labor and social standards for BASF and show how meeting these standards can be a competitive advantage to them (BASF Report 2010, p. 26).

Indicator 2.9: *Other stakeholder dialogue* was reported by 83.8% of reporters. Merafe Resources provided details about its stakeholder engagement in a tabular form on pages 70-77 of its 2010 annual report. It outlined a summary of material issues, means and frequency of engagement and key topics raised from the engagements and the company responses to them for each stakeholder group. Stakeholders included trade unions, customers, communities, producers and producer associations, different forums, international industrial bodies, governments and providers of debt.

Stakeholder engagement represents a keystone for advancements in social and environmental governance and corporate accountability practices (Unerman and Bennett, 2004). However, the view of "more stakeholder engagement is better" would inevitably underestimate the complication of the stakeholder engagement versus corporate responsibility relationship (Greenwood, 2007). Zollo et al. (2009) reported that there is no relation between the sophistication extent of stakeholder engagement and the corporate social performance. Hence, the simple idea of more stakeholder engagement does not essentially lead to better responsibility and accountability (Owen et al., 2001; Greenwood, 2007). Owen et al. (2001) contend that for stakeholder engagement to create an extension to corporate accountability, it has to take stakeholder views on board and induce it in corporate decision making so as to

make management accountable to accomplishing it under the view of stakeholders. In fact, a large portion of companies reported thoroughly on their stakeholder engagement and how they approached their stakeholders to capture any issues arising. Thus, to that extent companies were addressing the stakeholder engagement from a management perspective, where they aim to engage with a broad array of interested stakeholders in order to show their trustworthiness (Owen et al., 2001). Such moral dimension to stakeholder engagement is a form of accountability (Broadbent et al., 1996; Greenwood, 2007; Owen et al., 2001; Cooper and Owen, 2007). For example, the Spanish company EDP Renováveis reported on page 34 of its 2010 annual report that:

We have a large group of stakeholders and we work to ensure that we engage with all of them.

Others, however, showed how stakeholder dialogue was channelled into the decision making process, which responds to Owen et al. (2001) argument. This is also consistent with Zollo et al. (2009) finding that the degree of integration of sustainability engagements in internal operations leads to better corporate social performance. For example, Natura report that:

Our objective is to listen to our stakeholders, who we believe can help us improve the way we plan and manage our operations. Last year, we demonstrated this by hosting discussion panels that ultimately led to the establishment of a series of new initiatives at Natura. These initiatives included a waste management program and our position on the sustainable use of palm. The results of these dialogues influenced our decision-making and the development of our strategic planning, and also helped us develop our processes and behaviors, which contributed to raising the standard of our relationships (Natura Report 2010, p. 34).

Category 3: *Integrating key sustainability drivers into the organisation's strategy*, received a high average coverage of 65.3%. **Indicator 3.1**: *Key sustainability drivers incorporated and reflected in the organisation's strategy* was reported by 71.3% of reporters. Some integrated reporters devoted a separate section to disclose their sustainability strategy and its links to the corporate strategy. Other companies provided both a section on strategy showing the different strategic dimensions and another section showing the sustainability strategy. For example, the

Dutch company Royal DSM N.V provided both the overall strategy (including sustainability strategy) and a detailed sustainability strategy on pages 8-15 and 37-45 of its 2010 Integrated Annual Report respectively.

Another group of integrated reporters included sustainability issues and strategy as part of the integral corporate overall strategy. An extract from the Italian company SABAF is given as an example:

Strategic focus

In keeping with its shared values and mission, the company believes that there is a successful business and cultural model to be replicated and adapted in foreign markets and in adjacent sectors via organic growth or strategic alliances and acquisitions. Innovation, safety, personal development and socio-environmental sustainability are the distinctive characteristics of the Sabaf model (SABAF Annual Report 2010, p. 26).

Sustainability strategy reporting by integrated reporters was to some extent aligned with Stead and Stead (2000) postulate about the need to bring in corporate ecological responsibility to be part of the corporate strategy in order to be strategically accountable to the ultimate stakeholder "planet earth".

Indicator 3.2: *Linking sustainability to business case*, outlines why companies embrace sustainability practices (Carroll and Shabana, 2010; Dyllick and Hockerts, 2002; Salzmann et al., 2005; Spence and Rinaldi, 2012; Burritt and Schaltegger, 2010). The business case of sustainability refers to the underlying arguments and rationale to documenting why the business should accept and advance the CSR "cause" (Carroll and Shabana, 2010, p. 85).

This indicator was reported by 64% of the sample. Findings are consistent with Dyllick and Hockerts (2002) extended framework on corporate sustainability, whereby numerous integrated reporters disclosed that they embrace social and environmental sustainability to further their economic sustainability. Dyllick and Hockerts (2002) and Spence and Rinaldi (2012) contended that despite the fact that this approach to business case of sustainability

enhances its presence into mainstream reporting, it is not enough. Companies also have to explore the importance of business case of sustainability to develop various capitals, namely: economic, natural, social and human capitals (Dyllick and Hockerts, 2002).

Energy Development Corporation, a company from the Philippines, demonstrated an example of showing the business case of sustainability in relation to achieving financial benefits:

The maturity of the programs under the environment and watershed management aspects of our business, specifically their improved state after decades of vigilant monitoring, contributed to the significant 17% decrease in 2010's actual operating cost at PhP160.4 million. Improved figures in terms of company savings are proof positive of the strong business case for continuous investments on protecting and enhancing the environment (EDC 2010 Integrated Annual and Sustainability Report, p. 95).

Alternatively, Exxaro Resources demonstrated the importance of the business case of sustainability to the various business areas:

Sustainability ... key benefits include:

Eco-efficiency: reduced costs, costs avoided (e.g. through new technology) and optimal investment strategies; Quality management: better risk management, greater responsiveness in volatile markets, more motivated and committed staff, and enhanced intellectual capital; Licence to operate: lower costs of compliance, improved reputation with key stakeholders and greater influence with regulators; Market advance: stronger brands, greater customer loyalty, lower cost of capital, new products and processes, attracting (and retaining) the right talent; Sustainable profits: new business/increased market share and enhanced shareholder value (EXXARO RESOURCES Integrated Annual Report 2010, p. 14).

Around 61.5% set quantitative sustainability goals and targets as proposed in **indicator 3.3**. Companies either showed their sustainability goals and targets in a tabular form, or provided a list of their sustainability targets. For instance, Natura showed its key sustainability goals and objectives under the section commitment on pages 15 and 16 of its report. The company set numerous quantitative targets related but not limited to employee satisfaction and education, supplier communication, environmental aspects related to emissions and product impacts. Few examples of Natura's targets are:

Reduce our emissions of GHGs related to scope 1 and 2 of GHG Protocol by 10% by 2012, based on 2008 emissions; Achieve an average of 100 hours of training per employee in Brazil; Reduce the total weight of waste per unit billed by 6% (Natura Report 2010, p. 15-16).

About 64.7% reported on their commitments to public policy sustainability issues as in

indicator 3.4. Integrated reporters generally provided the disclosures on public policy issues

under the given title public policy. For instance, the Swiss company Roche Holding provided

its public policy disclosures on pages 129 and 130 of its 2010 report. The company showed

its contributions with governments and regulators to build different laws on page 129:

We share our views and expertise with governments and regulators to help develop effective laws, regulations and policies for public health as well as for more general areas, such as the assessment of the value of healthcare and our work with public health organisations, think tanks and academics.

One example is our contribution to the European Commission Process on Corporate Responsibility in the field of pharmaceuticals (Roche Holding 2010 Annual Report, p. 129).

Most companies showed if any political contributions were made. Hence, Roche Holding

reported on their political contributions as:

Roche does not fund individual politicians. Employees in the USA can make personal contributions through Roche's Good Government Committee (GGC) and Genentech's Genen-PAC ... In 2010 employees donated 340,899 US dollars to political campaigns through these PACs (Roche Holding 2010 Annual Report, p. 130).

In few instances, companies showed lobbying on particular public policy sustainability

issues. For instance, Natura Report (2010, p.74) mentions Natura's employees that are

entitled to engage in lobbying. In addition, TNT disclosed the lobbying to governmental

regulations:

De Groene Zaak (The Green Cause), of which TNT N.V. (Mail) is a Founding Partner, was launched on 11 February 2010. Dutch businesses have joined forces in a bid to lobby government for environmental changes. The objective of De Groene Zaak is to accelerate the realisation of a sustainable Dutch economy by lobbying Dutch politicians to remove existing regulatory and legal barriers (TNT Annual Report 2010, p. 213).

Category 4: *Ensuring that sustainability is the responsibility of everyone in the organisation*, received a fairly low average coverage of 41.5%. While, 44.1% reported indicator 4.1 on employee involvement in sustainability issues, only 39% reported indicator 4.2 on management commitment to achieving sustainability goals.

Engaging employees in sustainability issues was either to seek their opinions on sustainability matters or to engage employees to achieve improvement targets. The approaches integrated reporters undertook to engage its employees are in agreement with Mirvis (2012) employee engagement model. Mirvis (2012) identified three forms of engagement, namely: transactional, relational and developmental. The transactional approach resembles, in part, indicator 7.2 "raising employee awareness on sustainability issues", whereby the company undertakes CSR programs and encourages their employees to form part of the corporate responsible efforts. The two other approaches relates to **indicator 4.1** about employee involvement. The relational approach implies that both the organisation and employees collectively build commitment to CSR. In this case, integrated reporters engaged with employees to define and build sustainability commitments and increase the understanding.

The Japanese company Sojitz mentioned that:

Group employees organized a round-table discussion under the main theme of "putting CSR into practice in our work" to 181e-examine what CSR means to them and to the Sojitz Group (Sojitz Corporation 2010 Annual Report, p. 58).

The developmental approach encompasses the activation of employees to proceed and improve corporate sustainability objectives (Mirvis, 2012). Towards that end, EDP Renováveis disclosed that:

In 2010, we launched the first Sustainability survey in order to know what's relevant for EDPR employees regarding sustainability. Employees suggested numerous proposals to improve our sustainability performance (EDP Renováveis 2010 Annual Report, p. 76).

Some companies engaged employees to improve sustainability and achieve higher targets.

For instance, the South African company Bidvest stated:

Inside Bidvest, credit is also due for the way in which our people have taken ownership of sustainability practice. We gave them a framework and exposed them to the issues. The development and implementation of sustainability initiatives were then left to each business. This has resulted in a bottom-up approach to sustainability.

Visit Bidvest offices anywhere in the world and you will find a wide variety of initiatives under way; strategic interventions that shape these businesses – measurement and data collation, recycling, better waste management, water- and energy-saving, tree-planting and lots more. There's no one template, but lots of individual commitment (Bidvest 2010 Annual Report, p. 35).

Reporting on management commitment to achieve sustainability targets (**indicator 4.2**) was attained by 39% of integrated reporters. Management commitment was reported in various ways. For instance, TNT included corporate responsibility performance targets in their managers' contracts:

In order to monitor CR performance, quantitative targets are set, which are included in management contracts (TNT annual report 2010, p. 56).

Mirvis (2012) characterises management engagement and commitment into transnational and developmental approaches. Hence, the previous example relates to a transactional model, whereby the company induces sustainability objectives to management jobs. Furthermore, the Spanish company ENDESA developed a target to boost energy efficiency by 20% in a five year plan, the company then set a committee made up of representatives and members of energy efficiency departments for this regard:

In 2010 ENDESA developed its Energy Efficiency Global Plan (PGE) … In Latin America, an Energy Efficiency Committee was set up with representatives of group companies and corporate energy efficiency departments (ENDESA Sustainability Report 2010, p. 164).

By so doing, ENDESA's management commitment resides within the developmental approach of Mirvis (2012), whereby the company activates its managers to implement the

sustainability related issues. The Spanish company Inditex (2010, p. 60-61) showed the personnel involved the management and implementation of its CSR model compliance, health and safety, social investment and integration.

Disclosing indicator 4.2 was low compared to that in indicator 1.1 CEO/Chairman/CFO commitment. This may be because in many companies the CEO assumes the overall responsibility for sustainability.

Only 25% disclosed **indicator 5.1:** *Break-down their sustainability targets by their subsidiaries and departments*. Hence, most companies kept targets setting at a corporate level. The Swedish firm Scania reported that:

Each Scania production unit has overall sustainability objectives that provide the basis for detailed targets at the local level (Scania Annual report 2010, p. 49).

Similarly, the Finnish company Rautaruukki reported that:

The environmental working group, which consists of corporate and divisional environmental specialists, develops common practices and procedures in environmental matters. In practice, each of our sites and operations is responsible for putting environmental protection into place. … Management reviews regularly track achievement of these targets (Rautaruukki report 2010, p. 15).

Furthermore, some companies provided detailed divisional/subsidiary/operational sustainability targets (mainly in a tabular form). For instance, the Finnish company Outokumpu (2010, p. 64-65) showed the site-specific targets in 2010 and 2011 as well as their progress towards the specific targets they set per operational site in 2010.

About 41% of the companies covered **indicator 6.1**: *Product sustainability standards*. In many cases, companies developed self-developed products standards which comply with international and national product standards. For instance, Inditex described its product health standard as:

The Inditex product healthy standard is of general and obligatory application for all those products including clothing, footwear, accessories, complements and textiles. With this standard, Inditex seeks the elimination or regulation of the use of those substances of legally limited use which, if they are present in the product above certain levels, might be harmful to health (Inditex 2010 Annual Report, p. 84).

Inditex product safety standard was described as:

The Inditex product safety standard is of general and obligatory application for all products. Drawn up in accordance with the most restrictive and updated legislation, Safe to Wear is designed so as to prevent the articles marketed by Inditex from presenting problems for the physical safety of the customer (Inditex 2010 Annual Report, p. 84).

The Dutch company Philips disclosed on updates of its product sustainability standards in its EcoVision 4 and EcoVision 5. Philips disclosed various aspects on its products standards, including energy efficiency standards and material waste standards (p. 211).

Only 36.8% covered **indicator 6.2**: *Reviewing products sustainability performance.* Reporters mainly provided disclosures related to the environmental performance (emissions, waste, energy efficiency… etc.) per product segment. For example, PUMA showed the environmental performance (energy use, CO_2 emissions, water and waste) for footwear, apparel accessories and bags in a tabular form on page 56 of its 2010 annual report. Likewise, Philips disclosed on pages 213-214 of its report energy consumption, carbon emissions, water intake and wastes per product line from 2007 to 2010.

About 54% of the companies reported **indicator 6.3**: *Supplier sustainability management practices.* Companies chiefly included disclosures about supplier screening and codes of conduct that ensures supplier proper ethical, social and environmental practices. Inditex provided very detailed disclosures on its supplier compliance program with its code of conduct on pages 64-71 of its 2010 annual report. The company shows its code of conduct to suppliers and employee standards that must be fulfilled by all its suppliers on page 64 and active and discarded suppliers by region on page 65. The compliance program included six phases (awareness, supplier pre-assessment, social audit, ranking suppliers, corrective actions

and follow up audits) which were detailed on pages 65-71." The third phase, social audit (screening) on Inditex compliance programs was carried by most of the integrated reporters disclosing indicator 6.3. For Inditex social audits were outlined as:

... this phase has as its general objective to strengthen the Inditex production chain through audits which attempt to get to know the degree of compliance external manufacturers and workshops with regard to social, employment and environmental aspects (Inditex 2010 Annual Report, p. 66).

Improving the sustainability performance of products (**indicator 6.4**) was reported by 58% of integrated reporters. Companies mainly disclosed various environmental performance improvements for its production. For instance, Philips builds up more green products which have to be at least 10% better than the performance of a reference product. The company explained green products as:

Green products offer a significant environmental improvement in one or more Green Focus Areas: Energy efficiency, Packaging, Hazardous substances, Weight, Recycling and disposal, and Lifetime reliability (Philips 2010 Annual Report, p. 209).

Philips also engage in green innovation with constitutes of R&D activities that lead to the improvement and development of Green Products. In fact, the company is expanding its targets so that Green products are to make 30% of revenues in 2012. Dao et al. (2011) suggested that firms have to develop green products into their production lines. Hence, by projecting green products sales targets, Philips is exceeding the suggestion by including green products into its sales mix targets.

Likewise, Inditex reported on page 127 of its 2010 annual report on the improvements and reductions of consumption of electricity on its new stores and how that reduced the electricity consumed per garment by 42%. The company also reported on improvements with regard to reducing emissions related to production of garments.

Category 7: Extensive and effective sustainability training was covered by 56.3%. Around 62% of integrated reporters disclosed on training their employees on sustainability aspects (**indicator 7.1**). Training mainly involved various sustainability facets, including environmental, social, human and ethical related training. Reporting on employee training resembled Haugh and Talwar (2010) suggestions on training employees in different corporate departments to help embed sustainability and corporate values. Reporters also provided training in line with their strategic long-term aims. For instance, the US firm Southwest Airlines reported on the content of its environmental sustainability training, as:

Because our commitment to protecting our planet is integral to our operations, the topics of environmental stewardship and sustainability are included in our Employee training. ... In these courses, we discuss sustainability, our fuel usage and its impact on our greenhouse gas emissions and climate change, our initiatives to decrease emissions, and our recycling programs. Annual environmental training, on topics such as storm water protection, proper waste disposal, air permit compliance, and aircraft drinking water compliance, is mandatory for all operational groups (Southwest One Report 2010, p. 85).

With regard to ethical related sustainability issues, the Hungarian company Mol showed the results of ethical related sustainability training:

Ethics e-learning and exam was passed by MOL Plc, TVK Plc. And Slovnaft a.s. employees; Ethics training sessions were held in several other companies (MOL, Integrated Annual Report 2010, p. 179).

About half the integrated reporters disclosed **indicator 7.2** on raising the awareness of employees on sustainability matters. Employee awareness included environmental awareness, volunteering activities, transportation efficiency and biodiversity conservation. Haugh and Talwar (2010) reported that employee training and volunteering aid in building an interest and commitment to sustainability. On promoting employee environmental awareness, the Jordanian company Aramex reported:

The subsequent launch of the internal training campaign in our main stations was designed to communicate relevant environmental management information to our employees, with the aim of raising awareness to the ecological footprint of our organization and of our

employees, and to influence their behavioural patterns at the office and in their homes (Aramex Annual report, 2010, p. 47).

Ayala Land, a company from the Philippines, provided various disclosures on employee awareness on page 85 of its 2010 integrated annual and sustainability report. It reported that bike ramps were made available to promoting energy savings and a healthy lifestyle for employees. The company disclosed on enhancing employee awareness on biodiversity conservation on page 95. Additionally, the company disclosed on promoting employee volunteerism on community and environmental related activities:

We continued VoluntarALI, our volunteerism program which grants employees four official leave credits per year to engage in company-initiated volunteer activities. More than 660 employees from across the Company and its subsidiaries volunteered their time and effort at various community engagements and environmental activities, accumulating a total of 3,660 man hours in volunteer work for the year (Ayala Land Integrated Annual and Sustainability Report, 2010, p. 102).

Category 8 was the least reported among integrated reporters with coverage of 14% for its two indicators. **Indicator 8.1**: *Sustainability is part of staff remuneration*, was reported by 27.2% of the sample. For integrated reporters, sustainability was being either part of all staff remuneration or only limited to the particular staff members and executives. As for the latter, CPVDC company from the Philippines reported on its integrated annual and sustainability report 2010 that:

Performance assessment of top management and associates is based on … financial aspects … and non-financial aspects such as the Company's customers, internal business processes and the organization's learning and growth that cover the requirements of the Company's Quality, Environment, Health and Safety Management Systems (QEHS MS) (Cebu Property Ventures Integrated Report, 2010, p. 13).

Integrated reporters also specified certain sustainability performance targets as part of the variable (performance related) component of employees' remuneration. For instance, Natura reported that:

The variable component, whether short-term or long-term gains, allocates a larger amount for senior executives than for other employees. ... In 2010, the following indicators were used:

Economic: Consolidated Ebitda, Brazilian and international operations;

Social: Organizational climate survey in the Brazilian and international operations and the consultant loyalty index;

Environmental: Carbon emissions. ... (Natura Annual report 2010, p. 23).

Natura statement also reflects the inclusion of employee members in the variable remuneration scheme that is based on achieving certain economic, social and environmental targets.

Indicator 8.2: *Sustainability part of employee assessment and promotion*, only received one exemplar. The Canadian company NovaGold stated on that:

Performance reviews are conducted at least three times a year to set objectives and review progress and overall achievement. The employee's direct supervisor assigns an overall performance rating, which is reviewed by the CEO and other members of the executive team. Employee performance ratings are directly tied to sustainability and safety performance as appropriate, based on the employee's duties (NovaGold Integrated report 2010, p. 25).

NovaGold conducts these performance ratings for employees based on sustainability and safety and these ratings then become part of employee promoting in different corporate positions. Some integrated reporters not disclosing indicator 8.2 included information about local community and/or female recruitment.

Category 9 only involves one indicator and was the highest with 74.3% of the companies reporting it. **Indicator 9.1** includes showcasing of good sustainability practices to encourage future practices and innovation. Companies mainly disclosed on their successful and innovative sustainability practices. For instance, CPVDC, Inditex and others participated in earth hour, whereby companies switched off powers in some of its premises to reduce consumption and emissions. Other integrated reporters disclosed on the sustainability related

awards they attained from embracing new initiatives for good sustainability practices. For example, Exxaro Resources was proud of being awarded a sustainability award twice:

Exxaro won joint first place in the socio-economic category for its Zikhulise SME development and skills training centre project in KwaZulu-Natal. The group was runner-up in the prestigious sustainability category for the Lephalale eco-housing initiative, and the only company to feature twice in the awards. Now in their fifth year, the Green Mining awards acknowledge the contribution responsible mining and mineral beneficiation makes to economic development in Africa (Exxaro Resources Integrated Report 2010, p. 31).

In instances, integrated reporters shared success stories for a subsidiary or a division on their better sustainability practices. For instance, the South African company Sun International reported on the good environmental practices of one of its operations:

Carnival City was awarded Platinum Certification by Heritage in recognition of having achieved sustainable environmental performance of international standard. It also increased its waste recovery and recycling performance levels to 83% of all waste generated, one of the highest in the region and embarked on a partnership with a local waste management company to convert methane from dumped waste into fuel source for its collection vehicles (Sun International Annual Report 2010, p. 86).

The last category included 6 indicators and had an average coverage of 63%. Four of its indicators (10.2, 10.3, 10.4 and 10.6) were reported above the overall average coverage (54.4%).

Indicator 10.1: *Connecting sustainability performance measures to key financial and general measures (KPIs)*, received the least coverage in category 10 with 42% of companies reporting it. SABAF included financial and non-financial KPIs pages 8-16 of its 2010 report. The non-financial indicators included indicators of human capital, structural capital, and relational capital, along with social and environmental indicators. Several non-financial indicators were connected to financial metrics, among others, environmental investment to sales (p. 15), donation to net profit (p. 14) and Investment in training by revenue (p. 11). The indicators were presented for three years 2008-2010 to enhance comparability.

Indicator 10.2 on emissions was reported by 83.1% of integrated reporters. In fact, numerous companies are adhering to the carbon disclosure project, which require them to produce substantial disclosures on emissions. Equally noteworthy, GRI guidelines include several items related to emission disclosures. Thus, both together may have led to the high coverage of this indicator. Companies disclosed actual emissions, emission reduction and renewable energy and financial data on emissions. For example, TNT provides on its 2010 annual report substantial information about emission targets and performance (p. 212), developments (p. 213) and actual emissions and financial data (p. 214). Noteworthy, some integrated reporters which did not disclose this indicator were constructing future targets to ensure measuring emissions in the future.

Reporting on wastes was highly reported by integrated reporters with 71.1% of the companies covering **indicator 10.3**. Companies reporting this indicator included information about hazardous and non-hazardous wastes and waste improvement and management. For instance, the 2010 annual report of the South African company Evraz Highveld included its waste management, waste plan and disposal (p. 155), hazardous and non-hazardous wastes by source and recycled and non-recycled wastes (p. 156), and financial expenditures on waste disposal (p. 157).

Reporting **indicator 10.4** on water usage was covered 66.2% of integrated reporters. For example, Outokumpu disclosed its total water usage (p. 83), percentage consumption from ground and surface water (p. 83) water recycling and rainwater collection and treatment (p. 84) water discharges, discharging techniques and R&D to reduce discharging (p. 84) detailed figures on water withdrawal and discharges (p. 85). Many companies limited the information provided as to the minimum requirement by the indicator, which is reporting total water withdrawal/consumption by source.

Indicator 10.5: *Finite resource usage*, was reported by 43.6% of integrated reporters. Companies commonly disclosed the minimum information (material consumption by volume or weight). Different forms of materials were reported by companies, including ozone depleting materials, fossil fuel, light and heavy fuel oil, natural gas, ethane …etc. For example, Roche Holding reported the percentage use of non-renewable and renewable resources (p. 134). It also showed fuel, natural gas and oil used. Roche reported on halogenated hydrocarbons ozone depleting substances by weight (p. 134). Moreover, it showed the progress to reduce the use of these substances (p. 134).

Indicator 10.6: *Progress made on sustainability targets*, was covered by around 70% of the companies. Solarworld showed the progress on sustainability targets in a tabular form on pages 24-25 of its annual report. The company showed their targets concerning employees, society and processes in 2009-2011. It also showed the progress towards these targets set in 2009-2010. For instance, Contribution to regional development via Solar2World projects (not-for-profit) was one of the societal targets set (p. 25). In 2009 the project scope reached 114 kWp as compared to 53 kWp in 2008. In 2010, the project score was increased to 161 kWp.

Generally, SE aspects discussed in prior studies were reasonably addressed by integrated reporters. SE within supply chain practices as suggested by Dao et al. (2011) is resembled in indicator 6.3 which was reported by 54.4% of integrated reporters. SE within the strategy as suggested by Buysse and Verbeke (2003) and Valente (2012a) is covered under indicator 3.1, was covered by 71.3% of integrated reporters. Including sustainability within the vision and mission (Cramer et al., 2004; Vilanova et al., 2009) was covered in indicator 1.3 by 59.6% of integrated reporters. Likewise, employee sustainability training and volunteering (Haugh and Talwar, 2010; Lodhia, 2014) in indicators 7.1 and 7.2, were reported by 61.8% and 50.7% of integrated reporters respectively. Employee empowerment and engagement as included in

Haugh and Talwar (2010), Lodhia (2014) and Stubbs and Higgins (2014) was covered in indicator 4.1 by 44.1% of integrated reporters. Product innovation and greening as suggested by Dao et al. (2011) and Linnenluecke and Griffiths (2010) were addressed in indicator 6.4 and were covered by 58.1%.

Contrastingly, there were SE aspects suggested in prior studies that were either highly reported or receiving exceptionally low attention by integrated reporters. Aldama et al. (2009) suggested top management commitment and involvement in sustainability issues. While commitment was highly reported under indicator 1.1 by 85.3% of integrated reporters, direct involvement as in indicator 2.7 was only covered by 22.8%. Stakeholder and community dialogue was suggested by Valente (2012b), Dao et al. (2011), Linnenluecke and Griffiths (2010), Banerjee (2011) and Owen et al. (2001) and was covered in indicator 2.9 by 83.8% on integrated reporters. Sustainability forming part of performance appraisal suggested by Adams and McNicholas (2007) was represented in indicator 8.2 by only one integrated reporter.

Additionally, integrated performance indicators demonstrating interlinkages between social, environmental and financial performance (Lozano and Huisingh, 2011; Azapagic, 2004; Daub, 2007), is a feature of IR. However, indicator 10.1 on this aspect received below average coverage. Azapagic (2004) assert that such inter-related KPIs would provide a more holistic view of performance and aids in cutting down the performance measures to facilitate the decision making process. Therefore, integrated reporters are urged to develop interlinked KPIs, which may further the integration and bring ecological and social aspects closer to the predominated financial aspects.

Only 42% of integrated reporters showed some level of interrelating financial and non-financial performance outcomes. Which is in line to Stubbs and Higgins (2014) finding that

only 40% (6/15) integrated reporters are developing changes to be able to enhance interrelating financial and non-financial strategic outcomes. These results are low, essentially when combined with the fact that connectivity of financial and non-financial performance metrics forms one of the guiding principles of IIRC's recent <IR> framework (IIRC, 2013b, p. 17).

3.8 Discussion and conclusions

The purpose of the study is to develop an index to measure SE in IR reports. In addition, the study compares the SE index to the GRI as a *de facto* measure and a template commonly utilised in corporate sustainability reporting. The research instrument was applied to study SE disclosures in a sample of 136 integrated reports in 2010.

As the SE index stands on its own, it measures the level of embeddedness of sustainability within corporate reports. Hence, it may be applied to other non-integrated corporate CSR reports. However, in the context of IR, SE is the cornerstone for the production of an integrated report (A4S, 2007). Hence, it is supposedly that companies scoring highly on the SE index are perceived to have substantial IR practices. Conversely, integrated reporters with poor SE scores are perceived to decouple this practice from the apparent structure (showing that they produce an integrated report).

An integrated report is expected to be a tool that reflects on how sustainability is embedded and not merely a combination of different reporting sections (KPMG, 2011a; IIRC, 2013b). The descriptive findings, however, show that there are great discrepancies in SE scores among the sample of integrated reporters studied. While the highest score was 88.24% (i.e. covering 30 out of the 34 indicators), a company scored only 11.76%. Additionally, around 21% of integrated reporters covered below 40% of the indicator points, while around 23% of the companies covered 70% or more of the indicators. These results indicate that some

companies self-declared as integrated reporters were able to show how sustainability is embedded into their strategy, policies and operations and reflected into their reporting, while others made less SE disclosures. This suggests the existence of ceremonial (decoupled) practices of IR among the companies in the sample.

Findings show that on average, integrated reporters covered 54.4% of the indicators. Moreover, neither a single company covered all the indicators, nor an indicator was fully covered by all companies, which implies that integrated reporters can improve their reporting. Whereas, some indicators were covered by the vast majority of integrated reporters (e.g., indicator 1.1 and 2.9), indicator 8.2 was only reported by one company. Hence, these results imply that integrated reporters need to develop their reporting further by addressing the deficiencies in SE within the different facets of the corporation.

The previous result casts doubt on the soundness of the UN Global Compact-Accenture CEO survey rhetoric included in Lacy et al. (2010). The survey showed that 81% of the CEOs in 2010 (50% in 2007) stated that they fully embed sustainability into their corporate strategies and operations.[97] Hence, it can be evidenced that these responses were in fact highly superficial and that the factual figures are much lower than that. This is heightened by the fact that the survey did not provide a meaning to SE. The 2013 UN Global Compact-Accenture CEO survey, however, did not include this question.[98]

Mainly SE indicators tangent to G3.1 were relatively well reported by integrated reporters although exceptions were present. Indicators 2.5, 2.8 and 2.9 on stakeholder engagement were reported by 78.7%, 60.3% and 83.8% of companies respectively. Environmental related indicators as 10.2 (emissions), 10.3 (waste) and 10.4 (water) were covered by 83.1%, 71.1% and 66.2% respectively. Reporting on public policy issues (3.4) and improving the

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[97] The survey included responses from more than 1000 CEOs in companies around the world.
[98] The 2013 survey is available at: http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-UN-Global-Compact-Acn-CEO-Study-Sustainability-2013.PDF (accessed 29/05/2014).

sustainability performance of products (6.4) was covered by 64.7% and 58.1% respectively. All these indicators received above average coverage by integrated reporters. Conversely, indicator 2.1 (materiality) was only covered by 50.7%. Therefore, the previous indicates that integrated reporters were mainly choosing from the GRI indicators, which is largely consistent with Guthrie and Farneti (2008), who argued that companies cherry-pick the GRI indicators to report.

Not all SE indicators without reference under G3.1 received low coverage. Indicators 9.1 on showcasing of good sustainability practices and 3.2 showing the business case of sustainability, both received reasonable coverage. Conversely, about quarter of integrated reporters covered indicators 2.3 providing a definition for sustainability/CSR and 2.7 CEO/Chairman sustainability dialogue, and only one company covered indicator 8.2. Adams and Frost (2008) assert that understanding the meaning of sustainability in relation to the company is important, as its absence hinders integration. Hence, understanding what sustainability means represents a key aspect that needs to be improved by integrated reporters.

Overall, these indicators with no reference under G3.1 had an average coverage of 40.8%, which is well below the average coverage for the index 54.4%. Since, De Villiers and Alexander (2014) report that CSR reporting is converging as disclosures are becoming more based on international templates (as GRI guidelines). Therefore, incorporating these indicators into future GRI guidelines development would lead to better corporate uptake for these indicators.

Although there were variations among integrated reporters' SE scores between countries, the SE scores within each country also varied. Similarly, the study showed descriptively the existence of variations within each industry group. These differences were not verified

statistically given the small number of observations in countries and industries. It could be perceived that the level of SE within corporate reporting is derived by corporate attributes and may be a function of decoupling practices given the variation is scores within each industry group.

Comparison of SE index to the GRI guidelines show that G4 represents an improvement to G3.1 as viewed from the angle of SE disclosures. However, there are still room from improvements that can be attained. There are also subtle differences between SE index and GRI guidelines that may essentially need revisions by GRI. These are related to linking non-financial to financial measures (ex. Using KPIs), employee and management commitment and involvements, demonstrating the business case of sustainability and using sustainability metrics for employee promoting.

Although about 56% of integrated reporters provided sustainability training and awareness building, only 41.5% engaged employees and middle level management into sustainability issues. Hence, companies have to build on such sustainability training and awareness of employees, by engaging them through addressing impediments to effective communication of CSR strategy, shared values and CSR culture among all corporate personnel (Slack et al., 2014). This would, in turn, result in enforcing the social benefit to employee by their sustainability engagement (Collier and Esteban, 2007).

Integrated reporters seem to concentrate on financial and other operational targets in staff related compensation, appraisal and promoting. Only 27% included sustainability as part of remuneration and 1% linked sustainability to appraisal and promoting as suggested by Adams and McNicholas (2007). Integrated reporters seem to have ignored sustainability in their remuneration and promotion policies, while many claim that it forms part of every business aspects. Hence, such financial concentration in many integrated reports needs to be altered,

for IR to emerge (Jones and Slack, 2012). Additionally, as GRI is a highly visible tool for corporations (Nikolaeva and Bicho, 2011), it is therefore recommended that GRI address such issue by including core indicators covering such aspects. The existence of such better reporting guidance would largely minimise such reporting gap.

Integrated reporters seem to prioritise economic and financial aspects as shown when establishing the business case of sustainability (indicator 3.2). The results are consistent with findings of the case study of Spence and Rinaldi (2012) who found that economic drivers are more deeply embedded to environmental and social aspects. This is confirmed by the absence of linking sustainability to appraisal and remuneration policies. It can be concluded that even among integrated reporters, financial aspects seems to surpass other societal and environmental aspects. This finding contradicts Hahn and Kühnen (2013), Azapagic (2004) and also IIRC's rhetoric on equating social, ecological and financial aspects in integrated reports. Therefore, although integrated reports link sustainability into mainstream reporting (Solomon and Maroun, 2012; Burritt, 2012) which to that end represents an advantage (Burritt, 2012), it is not on an equitable level to the predominant financial focus. The findings provides empirical support to Thomson (2014) and Flower (2014) recent argument that corporate sustainability change is contingent on integrated thinking confronting the unintegrated thinking dominating business governance and practices. Therefore, although IR may provide some progress and alterations into aspects like stakeholder and employee engagements and interlinking financial and non-financial measures, it has not, to date, brought in fundamental changes into sustainability reporting and thinking (Stubbs and Higgins, 2014; Higgins et al., 2014).

3.9 Limitations and future research

3.9.1 Limitations

The SE index may have limitations if viewed from an interpretive/critical paradigm. Arguably, based on this paradigm, all guidelines/standards rhetoric represents an over simplification to the rather complex informal and corporate/societal cultural dimensions of SE (NBS, 2010). This may suggest that the SE index based on this argument would suffer from being adopted in symbolic terms. However, due to the limited diffusion of A4S guidelines as compared to the widely known and implemented GRI and UNGC, this seems to be less of an issue in this study. The study is framed from a positivist paradigm perspective, which views reality as objective and external. Moreover, the study formed a detailed index to minimise the chances for incorporating less sufficient disclosures. Therefore, it is possible that future in-depth (case) studies may be used to provide evidence for the degree of symbolic implementation of the SE index.

Another limitation for the SE index is that it does not determine the credibility of the integrated reports disclosures. Alternatively, it measures the extent of SE disclosures. Although the index was developed using three documents from organisations involved in IR development and the index was matching to prior studies, it did not engage integrated reporters. Hence, the index could not warrant including all the available SE disclosure indicators as integrated reporters may have incremental SE disclosures that were not covered by the index. Hence, this sets also as a limitation against the index completeness. Thus, detailed survey studies may be useful to expand this measure.

Comprehensiveness of SE reporting is not measured by the instrument. Comprehensiveness may be captured by counting the number of words, sentences, paragraphs or so forth for each indicator.

Arguably, the indicators per se do not indicate decoupling because only companies meeting the requirements of the indicator were added. However, as with any other quantitative content analysis technique, there is a subjectivity element that is still existent when coding the data (Krippendorff, 1980) even with a coding scheme being used (Beattie et al., 2004). Beattie et al. (2004, p. 208) describe the indexes with ex-ante coding criteria as "semi-objective" approaches. The difference between companies in reporting each indicator is mainly related to different approaches of reporting. However, this may not completely eliminate the drawback that there may still be differences in the levels of covering of the indicators among the companies.

3.9.2 Future research

The SE index was developed using A4S's 10 elements of embedding sustainability. Hence, future studies may unpack the contents "indicators" and try to create new categorisations that can stimulate the understanding of SE and foster more empirical and conceptual studies. However, as newer SE categorisation is to be developed, it needs to be tested for its validity and reliability.

The current study may be extended by comparing SE between integrated reporters and the companies not responding to the research query shown in the previous chapter. Future research may also compare integrated reporters to a matched sample of non-integrated reporters. It is important not only to show which group is embedding sustainability better, but also to understand the differences between the two groups. Lai et al. (2014) shed some light in this regard. The working paper found that participants of the IR pilot programme by IIRC had materially higher social rankings than a matched pair of non-integrated reporters. Thus, this future suggestion is important to expand on the body of knowledge in this area.

Future research may explore KPIs connecting financial and non-financial aspects, which are often known as corporate sustainability indicators (CSI). Studies may extract CSI used by a large sample[99] of corporations in order to descriptively view the CSI most/least used by corporations and show the tenure of utilising such CSI (i.e. whether companies constantly use the same CSI or they keep changing overtime). Studies may explore whether the reporting of particular CSI is driven by mimetic (following other companies), impression management perspective (changing CSI based on financial performance to show a more favourable corporate image) or routine (companies using the same CSI from a year to the next). Routine can be measured by adding a lagged CSI disclosure variable in a similar fashion as in Cormier et al. (2005).

Future research may compare the SE index to the recent publications of IIRC (as the main organisation promoting IR) especially the international <IR> framework. I, however, provide preliminary and yet incomplete insights on that comparison. For example, IIRC's international <IR> framework does not require companies to include the definition of the terms (sustainability, CSR… etc.) that they use in their report. Additionally, <IR> framework stresses employee training as part of the human capital and the company can benefit financially by training its employees. The framework, however, did not refer to sustainability training of employees explicitly; neither did it refer to building the awareness of employees or engaging employees in sustainability aspects. It neither states the need for CEO/Chairman message on commitment to sustainability nor the need for presence of a CSR committee. The framework, however, discusses on materiality and links the showcasing of sustainability practices to materiality. The framework also discusses stakeholder engagement. Additionally, it touches on product sustainability related performance and sustainability measures linked

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[99] A working paper by Lodhia and Martin (2012) has developed CSI to be applied by BHP Billiton (An Australian Company). However, integrated reporters in this study seemed to use various CSI that were in most cases different than the ones developed by this working paper. Therefore, grouping of all CSI using a large sample would be of use to explore corporate indicators used.

with financial measures (such as greenhouse gas emissions to sales). The SE index can therefore contribute in the future development of <IR> framework, which enhances the study relevance. In general, future research needs to study in more depth IIRC's publications and try to show its effects on the direction of corporate reporting.

Haller and Van Staden (2014) propose that IIRC's framework is principle-based, albeit it cannot offer a tool for corporations to adopt IR practices. Haller and Van Staden (2014) offered value added statements as a tool to represent IR. However, more tools from other perspectives may emerge in future research in attempts to provide a template for integrated reports. One main criticism for Haller and Van Staden (2014) proposed value added statement is that it deliberately separates IIRC's capitals into financial capital (comprising panel a) and some other non-financial capitals in panel b. It ignores natural capital, which is a major weakness to the tool. Therefore, future studies may well evolve to develop tools that address interlinkages between financial and non-financial metrics.

Chapter 4 Corporate decoupling, governance and sustainability embeddedness in integrated reports of early and late adopters

4.1 Introduction

The results presented in chapter 2 suggest that mimetic isomorphism is the main driver for IR adoption. However, when organisations depend on mimicry when complying with practices, two critical issues arise (Meyer and Rowan, 1977). The first problem revolves around the inconsistencies in the practices arising from the ceremonial (decoupled) practices. Secondly, the rule-like activities disseminating from different environments creates controversies in compliance among organisations in the field (ibid.). Additionally, CSR may be either introduced superficially for window-dressing purposes or substantially embedded into the core corporate strategy (Weaver et al., 1999). Weaver et al. (1999) and Collier and Esteban (2007) assert that sustainability has to be embedded and not decoupled from the company. IR adoption, however, may signify that sustainability and climate change reporting is an integral concern for the entire corporate aspects (Birnik, 2013; Burritt, 2012).

SE is a main IR pillar (A4S, 2007; Solomon and Maroun, 2012), which can help broaden the corporate thinking beyond the predominant financial concerns (IIRC, 2013b). Hence, SE level can be used from a positivist paradigm view to represent corporate substantial or decoupled integrated reporting practices. More specifically, the study build on the allegations that SE comes at the heart of integrated reporting and that high (low) SE scores implies substantial (decoupled) forms of IR. Results in chapter 3 show that the SE scores of integrated reporters varied widely. Whereby, about 10% of the companies covered only less than 30% of the SE index and 23% of them covering 70% or more of the index. These results indicated the existence of both substantial and ceremonial (decoupled) practices. Hence, the purpose of the study is to apply the notion of decoupling in the IR context. The study expands the literature by interacting decoupling to isomorphism. According to the isomorphism strand

of institutional theory, early adopters of practices are motivated to enhance their performance (DiMaggio and Powell, 1991b) and achieve technical efficiency gains (Tolbert and Zucker, 1983) by tailoring the practices to their needs (Westphal et al., 1997). Late adopters show compliance by ceremonial (decoupled) practices in order to seek legitimacy (Tolbert and Zucker, 1983). SE requires greater technical corporate commitment and better understanding of sustainability (Stubbs and Higgins, 2014). Therefore, the study posits that SE in the integrated reports of early will differ to later adopters. Board involvement in CSR issues would arguably ensure that these issues will form an essential part of business strategy and can ultimately aid in embedding CSR issues into corporate functions (Aldama et al., 2009). Thus, the effects of corporate governance (CG) on the SE of integrated reports are studied.

While decoupling is a central notion in institutional theory, Scott (2008) asserts that it received limited attention by researchers. Hence, the study provides fresh evidence on the use of decoupling practices in CSR reporting and in IR in particular. The research also contributes to depicting this relationship using a larger sample and multiple regression analysis. This differentiates the study from Jamali (2010) which uses in-depth interviews and Behnam and MacLean (2011) and Weaver et al. (1999) which are both conceptual studies. Additionally, Boxenbaum and Jonsson (2008, p. 91) suggest that attention to the relationship between isomorphism and decoupling has been almost entirely neglected so far and should be prioritised in future research. Therefore, the study sheds light on the relation between isomorphism, decoupling and the stage of IR diffusion. By so doing, the study partially responds to recent calls from Adams (2014, p.5) regarding the need to explore the implications of IR uptake on reporting practices. Additionally, the study provides some insights to the questioning of whether decoupling becomes more frequent in a mature (established) field, or it may arise in an emerging field (Boxenbaum and Jonsson, 2008, p.

93). The study contributes to the CG-CSR research, by empirically testing the effect of CG mechanisms on SE.

The remainder of the chapter is organised as follows. Section 4.2 offers the literature review on decoupling and early versus late adopters and also provides theoretical underpinnings of decoupling. The links between CG and SE is then provided. The development of empirical hypotheses presented in section 4.3. The study sample, method and model and measurement of the variables are then highlighted in section 4.4. The study descriptive findings and the main regression results are shown in sections 4.5 and 4.6 respectively. Finally, the study conclusions are shown in section 4.7, followed by the limitations and future research opportunities presented in section 4.8.

4.2 Literature review and relevant theoretical framework

This section reviews the literature on theoretical underpinnings of decoupling in CSR studies and in management research. Secondly, it discusses early and late adoption in the CSR and accounting literature. Finally, the literature linking CG to IR and SE are highlighted.

4.2.1 Decoupling

Organisations may use decoupling as a device to resolve conflicts between efficiency and ceremonial rules (Meyer and Rowan, 1977). In decoupling, organisations try to show attempts for improvements in order to maintain close associations between formal structures and actual activities (Meyer and Rowan, 1977; Boxenbaum and Jonsson, 2008). More specifically, when company managers want the company to be seen to adopt certain practices, they may show formal processes to implement such practices (Deegan and Unerman, 2011). However, the actual corporate practices may be decoupled or different from the apparent practices that corporate managers are trying to show (ibid.). For instance, Meyer et al. (1997) illustrate that schools may produce students (formal structures) but not learning

(actual activities may not match the implied structural and efficiency attempts). Thus, schools may not emphasise information about how they measure pupil's achievement. Conversely, institutionalised organisations protect their formal structures that can be decoupled by presenting their technical performance and activities (Meyer et al., 1997).

In voluntary disclosures, Deegan and Unerman (2011) report that companies may use social and environmental disclosures to construct an image that may well differ from the corporate actual performance. Also, corporations may use the integrated reports in a ceremonial manner whereby an integrated report may be produced, while the technical underpinnings of SE may be overlooked. Hence, practices are not assimilated within corporate operational and managerial processes (Dillard et al., 2004).

There are obvious advantages for decoupling. Companies can be protected from the anomalies included in the technical activities and practices while at the same time showing ceremonial adherence to formal structures (Meyer et al., 1997). As a result, corporations can benefit from the support of a wider range of external constituents (ibid.). Thus, corporations in an industry or within an institutional field can present a legitimate stance by showing adherence to formal practices (Meyer and Rowan, 1977; Deegan and Unerman, 2011).

From the preceding discussion, in order to identify decoupling, formal structures as well as actual practices need to be recognised. Consistently, decoupling is likely to occur when corporations want to show a legitimate stance or to benefit from external stakeholders. These grounds may suggest three main reasons for the attempt to produce IR which are:

1. Because IR is perceived to be a better form of accountability;[100]

2. Because of pressures to comply;

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[100] In its simplest sense, accountability entails a relationship in which people are required to explain and take responsibility for their actions (Sinclair, 1995, p. 220).

3. Because other international CSR guidelines and initiatives (such as GRI and UNGC) are perceived to be more easily decoupled (Behnam and MacLean, 2011), publishing an integrated report may present a more legitimate image.

In the first suggestion, companies attempting to produce IR in a symbolic form would benefit from being perceived as better accountable to their stakeholders. In this case decoupled corporations may symbolically show attempts to produce an integrated report while in fact loosely coupling the heart of integration which is embedding sustainability practices into their management and reporting.

The second postulate for producing an IR arises from external compliance pressures. An example would be the listed companies under Johannesburg Stock Exchange which have to produce an "integrated report" from 2011 onwards. Some companies may respond to that pressure by producing an integrated report without changing their management and even their reporting (i.e. how and which information is gathered analysed and reported) practices. Therefore, the decoupled companies would benefit from showing their compliance to the production of an integrated report with only limited changes initiated. Due to the non-existence of such pressures before 2010, it makes it less likely that pressure to comply produces IR decoupling in the period of the study.

The third postulate refers to using IR as a legitimacy tool to substitute/complement the international CSR guidelines and initiatives that are expected to be easily decoupled. Several international CSR guidelines and initiatives exist; however, the *de facto* measure used by a large number of companies is GRI. Behnam and MacLean (2011) reported that GRI is more like a compliance checklist where actual socially responsible behaviour is not captured. This, in turn, may increase the chances of GRI being decoupled and corporations may seek legitimacy by incorporating IR. Again some companies may symbolically adopt IR, where these practices are buffered by legitimacy concerns and not accountability attributes (Gray

and Bebbington, 2000). Companies usually seek to attain accreditation from different international CSR guidelines and initiatives for various reasons, so even if some companies would not engage in decoupling activities when embracing such initiatives others may do so. Similarly, Behnam and MacLean (2011) noted that UNGC, which is adopted by companies in both developed and developing countries, can also be easily decoupled. Companies may therefore resort to IR adoption especially in the recent times due to its increasing importance, yet it is still in its early stages of emergence and institutionalisation.

Decoupling often involves a deliberate action to disconnect formal from technical processes (see: Boxenbaum and Jonsson, 2008). The linking of decoupling to deliberate actions was recognised in management studies on decoupling (e.g. Westphal and Zajac, 1994). Boxenbaum and Jonsson (2008) assert that organisations involved in decoupling activities would do what is possible to avoid close scrutiny. In the IR context, to date, the issue of specifying the particular components and the level of integration of various elements in the integrated report is still ongoing (see: Flower, 2014; Adams, 2014; Stubbs and Higgins, 2014). As a result, the inconsistencies in the technical implementation of the practices would construct an advantage to decoupling (Meyer and Rowan, 1977). Therefore, companies may adopt IR while decoupling SE and integration as core aspects of an IR.

Taken together, backed by legitimacy and/or accountability reasons, some integrated reporters may implement a symbolic form of IR. Such decoupling behaviour can be expected to occur from recent adopters especially because IR is gaining a growing attention by various key actors in recent years. This suggests that late adopters of IR may have other agendas for adoption than to enhancing firm's accountability and reporting.

4.2.1.1 Review of decoupling studies in CSR

Studies on decoupling in CSR and accountability are not extensive (but see: Jamali, 2010; Behnam and MacLean, 2011; Weaver et al., 1999; Collier and Esteban, 2007). This strand of

institutional theory was empirically tested in several management studies (see: Westphal and Zajac, 1994; 2001; 1998). Hence, this subsection summarises decoupling studies, firstly in CSR and accountability studies, and secondly in the management literature.

Weaver et al. (1999) examined the tendency of corporations to incorporate a substantive/integrated or symbolic/decoupled form of social and ethical programmes in response to external pressures and expectations. The study sample comprised of service and industrial firms on the 1994 Fortune 500 list.[101] Additionally, it used both survey and archival data, including (1) a survey of key corporate personnel responsible for any ethical practices, (2) abstracts of main American newspapers in the period between 1989 and 1994, and (3) Registration lists for corporate board's meetings on ethical issues.

Corporate ethical programmes were categorised as easily decoupled ethical performance communication when ethical actions are only attained by communicating information from top level management to middle managers using memos or reminders (Weaver et al., 1999).[102] Conversely, an ethical program was categorised as integrated and substantial if it implemented and embedded into everyday corporate activities. Employing an institutional theory lens, Weaver et al. (1999) postulate that due to external pressures for social performance, firms will have higher tendency to adopt easily decoupled processes. Additionally, top management commitment to ethical actions would encourage incorporating elements of both easily decoupled and integrated processes. As hypothesised, Weaver et al. (1999) found that external factors (by government, media and business community) influence corporations to implement easily decoupled ethics program practices. Additionally, top management commitment to ethical matters increases the tendency to incorporate integrated

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[101] Fortune 500 is an annual ranking that includes the top US companies based on their gross revenue figures (see: Kesner et al., 1986).

[102] Weaver et al. (1999, p. 541) exemplify that a major financial services firm held a meeting with 20 middle managers and distributed its ethical policy to them. They were asked if they have read it before and all of them answered negatively. Yet, in fact, all of the managers have previously signed a copy of the policy as an employment condition.

ethics programmes along with the easily decoupled programmes to align with external expectations.

As outlined in chapter 2, Jamali (2010) focused on the conformity of MNCs to the different international CSR guidelines and initiatives and whether it was driven by symbolic conformity and decoupling. For that purpose, the study used a sample of 18 MNCs from Europe and Asia. The study findings supported that MNCs lay great importance on the survival value of legitimacy.[103] Hence, conformity to the international CSR guidelines and initiatives was driven by such attributes. In turn, this symbolic compliance was made available as a form of resistance, under the institutional conditions of high multiplicity, moderate diffusion of practices and low efficiency.

Behnam and MacLean (2011) explored the possibilities of decoupling of organisational practices when employing three types of international CSR guidelines and initiatives namely: principle-based standard (as the UN Global Compact), certification-based standard (as SA8000)[104] and reporting-based standard (as GRI). The study reported that specific international CSR guidelines and initiatives were prone to being symbolically adopted and decoupled to others. Decoupling was argued to arise from the structural dimension of the international CSR guidelines and initiatives. Thus, when the initiative is of high clarity, have high cost of adoption, require assurance of compliance and impose sanctions for failure to comply, it is more likely to be better embedded into corporate operations and less likely to be decoupled (as in SA8000). Conversely, international CSR guidelines and initiatives that have no clear expectations, minimal cost of adoption, and have no sanctioning imposed or assurance required to verify compliance, have a higher chance of being decoupled (as in

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[103] Organisational survival depends on responsiveness to external demands and expectations when seeking legitimacy (Oliver, 1991, p. 147).
[104] SA8000 involves the reporting standards for the workplace conditions. For more details, see: http://www.sa-intl.org/index.cfm?fuseaction=Page.ViewPage&PageID=937 (accessed 08/07/2013).

UNGC). Reporting-based standards are harder to decide and would fall somewhere between both extremes. Additionally, the voluntary nature of practices, codes and standards may be more likely to be decoupled as signing up for them have no costs but can generate benefits. Adhering to such practices requires corporate commitment and can be signalled by signing up (Adams, 2004). Hence, the gap between signing up and adherence is large (Behnam and MacLean, 2011). This case resonates with IR which is purely discretionary and voluntary in the period chosen for this study.

Collier and Esteban (2007) conceptually studied employee commitment to achieving CSR. The commitment was discussed based on influences from both corporate contextual attributes and employee perceptions. The study proposed that external factors that would result in decoupling of employee commitment from organisational practices include: corporate semi-fixed reactions and responses to negative media attentions, corporate close ties with standard setters like the Conference Board in the US and the Institute of Directors in the U.K. Alternatively, top managers' varying commitment can deter or adversely encourage substantive employee commitment. Collier and Esteban (2007) contend that top management with a financial commitment would adopt ethics programmes to address institutional pressures, while allowing the programmes to be decoupled. Conversely, when top management are committed to ethics, they will seek embedding ethics into corporate processes, practices and appraisal. Additionally, top management will encourage the employees to work towards the ethics oriented goals through substantive ethics programmes.

Aravind and Christmann (2011) provided an empirical study on the existence of decoupling in the implementation of ISO 14001 Standard[105] and its effect on the facilities environmental performance. The study utilised a sample of 72 US facilities that were ISO 14001 certified to

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[105] ISO 14001 is one of the ISO 14000 family certifications with particular focus on addressing companies and organisations environmental management systems (EMS) (see: http://www.iso.org/iso/home/standards/management-standards/iso14000.htm (accessed 09/08/2013).

a matched group of 72 non-certified facilities. Regression results showed that facilities with low environmental performance (measured as the toxic emissions per facility based on the TRI database)[106] and ISO 140001 certified did not differ to the matched group of low environmental performance facilities that were not certified. Hence, this finding gives support to Schwartz and Tilling (2009) proposition that such attempt to standardise CSR, contributes to isolating it from the corporate and cultural contexts and increases the possibility of decoupling exercises. Conversely, Aravind and Christmann (2011) found that higher environmental performing facilities that were ISO 14001 certified were significantly better to their non-certified counterparts. Thus, proper implementation of the standard resulted in better environmental performance.

In summary, studies on decoupling in CSR were fairly limited both in quantity and topics covered. Decoupling was showed to exist as a result of external pressures from government and media (Weaver et al., 1999; Collier and Esteban, 2007). Studies also showed the existence of decoupling in programs, policies and international CSR guidelines and initiatives implementation (Weaver et al., 1999; Jamali, 2010; Behnam and MacLean, 2011; Aravind and Christmann, 2011). The studies, however, did not explore the effect of early and late adopters on engagement in decoupling practices. This is in support with Boxenbaum and Jonsson (2008, p. 91) declaration that discussion of the field-level variable (early and late adopters) is almost entirely neglected and needs exploration.

4.2.1.2 Studies on decoupling within the management discipline

Decoupling studies in the management literature covered different topics than that in CSR. Westphal and Zajac (2001) examined the case of corporate decoupling from formal adopted policies in the analysis and implementation of stock repurchase programmes. The study used a sample of 414 large and medium US industrial and service companies drawn from Forbes

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[106] The TRI Database is a publicly available database containing information about the toxics released by US Facilities, more on: http://www.epa.gov/enviro/facts/tri/search.html (accessed 04/04/2014).

all-shares and Forbes 500 between 1985 and 1991 inclusive. Findings reveal that decoupling of formal stock repurchase programmes is more likely to occur if corporate top executives have influence on their boards to evade any change arising from institutional pressures. Thus, it can be argued that although governance can be in itself driven by symbolic incentives; good governance may result in the implementation of more substantive practices and processes.

Westphal and Zajac (1998) studied the consequences of symbolic CG reforms (using the specific case of long-term incentive plans) on shareholder reactions. The study reported that decoupling the long-term incentive plans created positive and significant shareholder reactions. Thus, they concluded that such symbolic governance reforms may dissuade substantive governance reforms to be incorporated, and leads to greater imbalances in power distribution within corporations. The study, however, neither focused on the distribution of power and composition of board members (executives and non-executives), nor incorporated the reactions that may arise from the other stakeholders.

Westphal and Zajac (1994) studied the economic and behavioural determinants of corporate long-term incentive plans adoption. The study utilised a sample of 570 largest US firms over a 20 year period. The study differentiated between early and late adopters in order to explore decoupling and the extent to which these plans were implemented. Results of the study revealed numerous interesting aspects. Firstly, it was shown that companies with powerful CEOs had higher likelihood for announcing long-term incentive plans; however, it was less likely that these companies will implement them (i.e. high likelihood of decoupling). Moreover, early and late adopters had different motives. Early adopters were driven by performance objectives as compared by late adopters who were not. The results provide evidence to the substantive adoption and implementation of long-term incentive plans among early adopters as opposed to late adopters who are likely to decouple actual implementation

for legitimacy reasons. Thus, the adopter status (early vs. late) can be considered as a factor in framing the corporate decoupling behaviour. In addition, power imbalance, as outlined by Westphal and Zajac (1994; 1998; 2001) can be considered a factor to prolong decoupling practices.

Westphal et al. (1997) studied the adoption of total quality management using a sample of 2,712 US hospitals. The study used an institutional theory perspective and differentiated between early and late adopters. Consistent with the theory, the study finds that early adopters of TQM[107] implemented the technical aspects and customised it to suit each hospital need. Conversely, late TQM adopters embraced it driven by legitimacy benefits and not efficiency benefits resulting from applying the technical aspects.

In conclusion, decoupling was shown as a strategic response to institutional factors (Westphal and Zajac, 2001; 1998). The study of effects of early and late adopters in relation to decoupling was studied by Westphal and Zajac (1994; 1997).

4.2.2 Early versus late adopters

Tolbert and Zucker (1983) assert that early adopters (as compared to late adopters) are driven by the technical efficiency gains that results from the adoption of particular practices. It is more possible that early adopters will tailor such practices to their own needs and capabilities (Westphal et al., 1997). Moreover, early adopters of organisational innovations are commonly motivated to improve performance (DiMaggio and Powell, 1991b, p. 65). As practices begin to defuse, later adopters initiate such practices to respond to the growing social legitimacy and to be perceived as aligned with such practices (Tolbert and Zucker, 1983). Although early versus late adopters is a central part of organisational decoupling, it

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[107] TQM is the Total Quality Management, which is a management approach for enhancing quality and bring improvements to services, products …etc. (see: Westphal et al., 1997).

has received limited attention in CSR studies. However, early and late adopters were discussed in other accounting studies, where some used an institutional isomorphism lens.

4.2.2.1 Early and late adopters in CSR studies

Bansal and Hunter (2003) examined the corporate strategic drivers (reinforcing or reorienting) of ISO 14001 certification among its initial adopters two years from its inception. Within the early adoption of ISO 14001, Bansal and Hunter (2003) proposed that companies may adopt ISO 14001 to reinforce their strategic positioning (i.e. to enhance their competitive advantage due to their international business scope and environmental legitimacy). Conversely, they proposed that early adopters may want to be ISO 14001 certified to reorient their strategy (i.e. to show a change in their strategic positioning by higher commitment to CSR and quality). The two alternative strategies were compared using a matched pair of US companies. Results revealed that early adopters of ISO 14001 were clearly inclined to reinforce their strategic positioning due to their international presence and environmental legitimacy. Conversely, corporate commitment to CSR and quality was not statistically different between ISO 14001 certified and non-certified companies. Hence, the ISO 14001 certification did not seem to reorient the corporate strategic stance, but rather was a strategic legitimation tool.

Montiel and Husted (2009) studied the attributes of early adopters of national and international environmental management programs (as ISO 14001 or the Clean Industry Program) in Mexico using an institutional perspective. Results indicate that large elite companies with access to free resources are more likely to adopt these national and international codes. Similarly, firms with export or import connections with other international markets were early movers to adopt the environmental management programs. Lastly, firms which were subsidiaries to international companies whereby their role is to

receive raw materials and chance it into products to be carried out to the parent company "Maquila sector" were also early movers.

Meyskens and Paul (2010) studied the emergence of CSR reporting in Mexico in two generations, which included 10 companies for the first and 17 companies for the second generation. The study used content analysis to identify CSR reporting on the websites of this sample of 27 companies in November 2007. Results were then compared to an earlier study by Paul et al. (2006) that used the same technique to study CSR reporting on the websites of the 10 companies (used in the study to represent the first generation). Findings show that the first generation issued CSR reports more frequently and made the reports available in more languages as compared to the 17 companies representing the second generation. The study also searched for the existence of several CSR terms in their reporting and found that the first generation referred to terms as stakeholders, code of conduct, citizenship and human rights more frequently than the second generation. Interestingly, comparing the earlier study by Paul et al. (2006), the paper found that the second generation companies used local norms that stress the Mexican values, charity, and focus on Spanish speaking users, which is the same path selected by the first generation of companies when they first started CSR reporting. The study also found that the as the first generation of companies incorporated international standards and departed from the local norms as they developed.

In a conceptual study, Sirsly and Lamertz (2008) set a group of propositions whereby firms introducing CSR initiatives generate benefits as early (first) movers. They proposed that in order for CSR initiatives to create and sustain an early-mover advantage, it has to be closely tied to the company's mission, made visible to stakeholders and provide specific benefits to the company. Such advantage creates internal SE and has to be complemented by external practices and reporting related to societal, environmental and stakeholder management. More recently, Sirsly and Sur (2013) also proposed that sustainability initiation may be associated

with corporate ownership. The study proposed that based on ideological motives, family/founder form of ownership may be either early or late-movers. Corporate ownership driven by strategic motives will likely be mid-movers. Institutional investors are mainly driven by risk mitigation objectives and they may choose to be late-movers.

In conclusion, these studies showed that early adopters were different than late adopters in relation to the characteristics and motives for implementation of various CSR issues.

4.2.2.2 Early and late adopters in accounting studies

Malmi (1999) used a sample of Finnish companies to explain the drivers of activity-based costing diffusion (as an accounting innovation) over its various stages. The study adopted Abrahamson (1991) four corporate perspectives towards the adoption of new practices to explain drivers of activity-costing adoption. These perspectives are efficient-choice, forced selection, fad and fashion. Using a set of surveys, interviews and archival sources, the study provided several propositions. In the first initiation of the practice, early adopters of activity-based costing were proposed to be driven by the efficient-choice. At the take-off stage fashion perspective is observed together with the efficient-choice adoption. Later as the practice becomes more established, the fashion perspective diminishes and the diffusion became derived by both forced and efficient-choice.

Sami and Welsh (1992) studied the characteristics of voluntary adopters of the accounting standard SFAS No. 87[108] before it was mandated. The study found that corporations adopting the standard before being mandated were large in size, have more pension obligations, debt-restrictions, worse interest coverage and less management shareholdings to these that did not voluntarily adopt the standard. Similarly, Ayres (1986) studied the firm characteristics of the

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[108] FASB's SFAS 87 is on "Employers' accounting for pensions". More information can be found on: http://www.fasb.org/summary/stsum87.shtml (accessed 24/0302014).

early adopters of SFAS 52[109] accounting standard over the transition period given, whereby companies may choose from between given adoption dates (from 1981, 1982 and 1983). The study found that companies selecting earlier adoption dates were smaller in size, had lower pre-change earnings in the year prior to the adoption, lower managerial shareholdings, worse interest-coverage and higher covenants on dividend pay-outs than that for later adopters of the standard.

In sum, Malmi (1999) provides evidence that early and late adoption would have different perspectives that hinges around their adoption decision. Sami and Welsh (1992) and Ayres (1986) showed that depending on their characteristics, corporations chose to be early/late-movers of accounting standards.

4.2.3 Studies on IR and corporate governance

Prior literature exploring corporate governance effects on the production of integrated reports is very limited. Frias-Aceituno et al. (2013b) examined the effect of the board of directors' mechanisms on IR adoption using a sample of 568 companies from 15 countries in 2008-2010. The sample was obtained from Forbes 2,000 largest firms and the integrated reports were identified using a discussion paper by the IIRC in 2011 as in Frias-Aceituno et al. (2012; 2013a). Using a logistic regression, the study found that board size and the existence of female directors on the board are positively related to IR adoption. The study also found that larger companies with higher growth opportunities (market-to-book) were more likely to adopt IR. There was, however, no relationship between board independence, percentage of foreign directors and meetings, and IR adoption. Sierra-García et al. (2013) studied the effect of existence of assurance on the production of an integrated report using a sample drawn

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[109] FASB's SFAS 52 is on "Foreign currency translations" issued December 1981, for a summary of the standard, see: http://www.fasb.org/summary/stsum52.shtml (accessed 24/03/2014).

from Forbes 2,000. The study found that companies having their report assured are more likely to produce integrated reports.

Churet and Eccles (2014) very recently studied the relationship between the quality of management, financial performance and IR, using a sample of 2000 companies. They used RobecoSAM proprietary database to gather the data on both IR practices and the quality of management[110] for 2011-2012. As outlined in chapter 2, the database identifies the company as integrated reporter if it disclosed its sustainability initiatives and implications on its financial performance in the main section of the annual report (i.e. financial report or 10-K report). Churet and Eccles (2014) used the return on capital employed as a proxy for financial performance. The study found a positive association between the quality of management and IR, and no association with financial performance.

4.2.4 CG and SE

As previously outlined, integrated reports need not to be a combination of various reports; nonetheless it is a tool to help embed sustainability into the organisation (IIRC, 2013b; KPMG, 2011a). Although SE is an important cornerstone in building an integrated report, it has not been substantially covered in prior research as highlighted in chapter 3. Likewise, the relationship between SE and CG was not studied empirically in literature. However, this relationship was conceptually reflected upon in few occasions in literature as shown below.

CG mechanisms were argued to be a catalyst in driving organisational changes (Deakin and Whittaker, 2007). Additionally, Bhimani and Soonawalla (2005) assert that CG and CSR are strongly connected. CG mechanisms of the board are essential for embedding CSR functions effectively into the organisations (Aldama et al., 2009).

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[110] Quality of management was computed based on RobecoSAM's corporate sustainability assessment, which gives a score range of 0 to 100 based on corporate management of environmental, social, governance and long-term economic issues.

Jones (1999) explains that socially responsible reporting behaviour is a factor of corporate decision makers and how they value social responsibility. Hence, Weaver et al. (1999) suggest that embedding ethical behaviours is more likely to take place when top management are more committed and highly value ethical behaviours. Adversely, when the board is more driven by financial motives over the ethical and CSR agenda, they may decouple their practices so that formal practices are only ceremonially shown.

Higgins et al. (2014) argue that engagement of IR may be the result of meeting expectations that may arise from peer pressure. In fact, results of chapter 2 provide strong support that mimetic isomorphism explains IR adoption. Higgins et al. (2014) provide evidence through interviews that corporate CEOs would want to foster integrated reports in order to meet expectation, while not focusing on strategic and operational changes in activities and reporting. By so doing, domination of executive members may result in a producing a decoupled (weak) form of IR. Internal power dynamics of the board may predict corporate substantive and decoupled practices (Boxenbaum and Jonsson, 2008). The board supervisory functions may play a vital role in SE by placing it within the core of corporate strategy (Aldama et al., 2009). Additionally, the existence of CSR committees or other committees within the board strategically focusing on sustainability may enhance corporate disclosures and thinking (Adams and Frost, 2008; Stubbs and Higgins, 2014). From the previous, it can be drawn that board ethical and CSR values, supervisory functions and internal power dynamics can help explain SE within the corporate facets. Larger boards are also argued to bring in members that are more experienced and value social and environmental issues (De Villiers et al., 2011b). Therefore, the study relates SE to board's monitoring and sustainability focus using board independence, board structure and CSR committee existence, board size and female directorship.

4.3 Hypothesis development

This section details the hypotheses that are tested in the study. It starts with the hypothesis development for IR age, GRI application and report assurance. It then shows the hypothesis exploring the effect of CG mechanisms.

4.3.1 IR age (IRAGE)

Early versus late adopters has received particular attention in the decoupling and institutional theory underpinnings. As outlined above, it is expected that early adopters of organisational innovations are motivated by enhancing their performance (DiMaggio and Powell, 1991b) by adopting both the formal structures and its related practices (Boxenbaum and Jonsson, 2008). Conversely, later adopters may adopt formal structures while not changing their practices in order to be perceived to align to the pioneer practices (Tolbert and Zucker, 1983; Boxenbaum and Jonsson, 2008).

However, in the context of decoupling, early and late adopter- as a field-level variable – was not covered in prior research (Boxenbaum and Jonsson, 2008). In IR context, Sierra-García et al. (2013) declare that companies are recently driven by the notion "Why not integrate financial and non-financial information with the aim of gaining a global perspective of the company's operations and understanding the performance of the company as a whole?" This postulate would suggest that while a portion of recently adopting integrated reporters would initiate IR to enhance their understanding, others would engage only for performance and visibility reasons. Hence, the latter form may result in a decoupled IR form (low SE reporting practices).

Although it is suggested that later adopters are more likely to engage in decoupling actions, this issue may be less clear with regard to IR. Late adopters may adopt IR for various reasons, which could have an effect on their engagement with sustainability issues. Given the

uncertainty around many IR aspects, late adopters may have waited for early adopters to resolve some of these issues before they adopt IR. Additionally, later adopters may have changed their views on IR and have decided to adopt IR on a later stage after realising that the change may be more beneficial than they have originally expected. In these cases late adoption could be attributable to the need to improve performance and implement the technical aspects of IR (i.e. embed sustainability into decision making and reporting). However, as IR adoption was mainly driven by mimetic isomorphism, later adopters may resolve the controversies around IR and engage in ceremonial (decoupled) practices (see: Meyer and Rowan, 1977). Nonetheless, some companies may not engage in decoupling even when subject to mimetic pressures (Boxenbaum and Jonsson, 2008). Therefore, some late adopters may embed sustainability in compliance to early adopters in view that such practices are expected by them. Furthermore, while early adopters are expected to experiment and learn about SE for a longer period as compared to late adopters, the level of learning may differ between companies. Hence, at least some late adopters may be able to embed sustainability into their decision making and reporting.

Evidence on differences in rationale and characteristics between early and late adopters was supported in several studies as outlined previously. Bansal and Hunter (2003) found that early adopters of ISO 14001 had higher levels of environmental legitimacy, lower environmental crisis and larger international reach. Likewise, Montiel and Husted (2009) found that early adopters of ISO 14001 in Mexico had larger international trades. Malmi (1999) found that early adopters of activity-based costing are driven by rational choice to enhance efficiency, while later adopters are motivated by fashion and fad and bandwagon behaviour. Meyskens and Paul (2010) found that early adopters published CSR reports in many languages to reach more audience than that of late adopters. Läpple and Rensburg, (2011) studied the characteristics of early and late adopters of organic farming. They found that while both

groups were motivated by environmental and social attributes, early adopters were not driven by profitability goals as opposed to later adopters. Westphal and Zajac (1994) found that early adopters were driven by performance objectives when implementing long-term incentive plans as compared by late adopters who were adopting for legitimacy reasons. Finally, Westphal et al. (1997) show that early adopters of TQM customised it to suit their efficiency needs, while later adopters tried to show conformity to early adopters' practices.

In summary, Boxenbaum and Jonsson, (2008, p. 86) put forward that first movers are eager to implement while late movers more readily decouple, a response that they hide behind seeming enthusiasm. In this regard, it is also found that decoupling can be essential for corporate success (Oliver, 1996). Most studies showed that the tendency of decupling was more likely to occur among late adopters (e.g., Bansal and Hunter, 2003; Malmi, 1999). From the preceding, it is contended that early integrated reporters will be motivated to embed sustainability and that will be reflected into their reporting practices, while late adopters would be more likely to present a decoupled form of the integrated report. Additionally, early adopters would be in a different stage of development of SE as compared to late movers (Adams and Frost, 2008). Managers may naturally embed sustainability, enhance communications with stakeholders and strengthen the role of sustainability committees, which results in developing IR practices over time (Higgins et al., 2014). Hence, the first hypothesis is formulated as follows:

H1: Ceteris paribus, there is a positive association between IR adoption age and SE.

4.3.2 GRI application level (GRIL)

GRI guidelines are arguably the *de facto* sustainability reporting guidelines for public companies and other private companies and organisations (Dumay et al., 2010; Shaw et al., 2010). GRI is argued to help companies communicate their performance and accountability

beyond the financial bottom line concerns (Willis, 2003, p. 233). Nevertheless, at the lower application levels (especially level C or unidentified)[111], organisations may cherry pick the indicators that are deemed to be favourable (Guthrie and Farneti, 2008). Additionally, Behnam and MacLean (2011) contend that companies with low application levels of GRI would be motivated by the low costs of application.

The chances of indicator picking becomes smaller especially for higher level reporters (A level) as they have to include each core performance indicator to their sector, or explain why an indicator was omitted and redeemed as immaterial (GRI, 2006). Companies with application level B may also have room to selectively choose only 20 economic, environment, human rights, labour, society, or product responsibility performance indicators (see: GRI, 2006). Even with more reporting on sustainability performance metrics, Moneva et al. (2006, p. 135) assert that such reporting merely promotes the production of a set of reporting indicators rather than instilling business with values. Hence, Bebbington et al. (2004) cited in Moneva et al. (2006, p. 134) conclude that GRI may be used as a management tool of legitimation.

The approach utilised by the GRI guidelines was also criticised as it concentrates on showing discrete performance indicators without showing their interrelations (Bebbington, 2001). Consequently, Moneva et al. (2006) argue that in order to give a more holistic view of the economic, social and environmental pillars, the GRI approach have to introduce cross cutting indicators that link two pillars together. For instance, GRI approach ought to introduce eco-justice indicators linking economic and social pillars together (ibid.). One motive from using GRI was because it can serve as a template when designing and compiling the sustainability report (Hedberg and Malmborg, 2003). Hence, GRI guidelines can also arguably enhance not only the external but also the internal communication (ibid.).

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[111] A detailed explanation of the GRI application levels was provided in sub-section 3.3.3.

Hedberg and Malmborg (2003) report that implementing GRI guidelines may help companies think about their current sustainability state. As corporations become more thoughtful about their sustainability practices, this will allow them to report on their overall corporate impacts rather than solely listing their sustainability impacts (Moneva et al., 2006). With the launch of G3 in 2006, the GRI introduced the disclosure on management approach (DMA) to be reported for application levels A and B (see: GRI 2006).[112] The main objective of DMA is to provide the context for understanding the sustainability performance (GRI 2006; GRI 2013a). It includes disclosures on how companies identify, analyse and respond to current and potential sustainability impacts (GRI 2013a). Thus, DMA is meant to explain to the reader the management practices taken to manage corporate economic, environmental and social impacts (ibid.). DMA also provides assistance into reporting the direct and indirect economic impacts (ibid.). Moneva et al. (2006) state that corporate reporting of indirect and direct economic impacts of sustainability leads to better integration and embeddedness of sustainability.

Companies adopting the higher levels of GRI have to report on their stakeholder engagement (GRI, 2006). It is argued that when stakeholder engagement forms part of corporations' ethical and normative setting, this would enhance corporate accountability (Broadbent et al., 1996; Greenwood, 2007; Owen et al., 2001; Cooper and Owen, 2007). As a result, these corporations would balance between expanding financially and the social and environmental requirements before such expansions may be pursued (Roberts, 1996; 2003).

Based on the previous discussion, companies with high level of GRI application seem to be more thoughtful about their sustainability practices, which is expected to be reflected in their

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[112] Even with the current G4 that is launched in 2013, guidance on DMA isn't fully developed to cover every aspect of disclosure (see: GRI, 2013a).

reporting due to the disclosure of their sustainability management approaches. As a result, the second hypothesis is formulated as:

H2: Ceteris paribus, there is a positive association between the GRI application level and the embeddedness of sustainability in the integrated report.

4.3.3 Report assurance

Sustainability disclosure has been subject to various criticisms related the content completeness, consistency (Adams and Evans, 2004) and tendency to overuse positive events in disclosures (Scalet and Kelly, 2010). In consequence, a growing number of companies are addressing these concerns by providing assurance to their sustainability disclosures/reports (O'Dwyer and Owen, 2005) to increase its credibility (Simnett et al., 2009).

Sustainability assurance engagements have been a controversial issue in many studies (Perego and Kolk, 2012). A major concern is that although stakeholder participation in assurance engagements is important, O'Dwyer and Owen (2005; 2007) claim that this seems to be the exception. Another criticism emerges from the variability scope of assurance (all disclosures or parts of it) and the varying levels of assurance (Manetti and Bacetti, 2009).[113] Additionally, Ball et al. (2000) cast doubt on the level of independence in providing the assurance statements. Similar to that argument, Manetti and Bacetti (2009) and O'Dwyer and Owen (2005) noted that assurors relied upon interviewing managers and employee personnel, who are involved in the production of the sustainability reporting narratives, in building their opinions and writing the assurance statement. Thus, O'Dwyer and Owen (2005) and Ball et al. (2000) argue that assurance may be regarded as an internal exercise from management to management. Furthermore, Perego and Kolk (2012) provided evidence that some MNCs

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[113] There are different levels of assurance engagements that can be offered, namely reasonable and limited assurance, whereby the assuror may use a given level to the whole narratives or provide different assurance level for each part (Manetti and Bacetti, 2009). The level of assurance engagement required is decided by the corporate management prior to the engagement (Jones and Solomon, 2010).

develop a symbolic form of accountability through embracing assurance, which questions the creditability of these practices.

Alternatively, the existence of assurance on sustainability reporting was evidenced to provide several benefits. For instance, as Manetti and Bacetti (2009) note, an assurance provider discovering a fraudulent financial reporting issue may in turn inform the auditor of the financial reports. They argue that financial report is therefore part of the broader sustainability report. In fact, auditors rely on the services of sustainability and environmental experts while conducting the assurance service (Manetti and Bacetti, 2009; O'Dwyer and Owen, 2005).[114] It was also noted that auditors offer their recommendations to further improve the reporting on the processes, programs and systems related to CSR management (Manetti and Bacetti, 2009; O'Dwyer and Owen, 2005). Viehöver et al. (2010) cited in Perego and Kolk (2012, p. 174) explained that assurance may induce improvements to the corporate internal information and reporting systems, which would in turn enhance social and environmental reporting and performance.

With regard to IR, Sierra-García et al. (2013) found a positive and significant association between the production of an integrated report and having the report assured. The study also found that the proportion of integrated reporters having their reports assured was significantly higher than that of non-integrated reporters. Although these results provide a supportive argument to expect a positive relationship, Sierra-García et al. (2013) measure IR using a binary variable (1 producing an integrated report 0 if not). The binary measure alleviates the issue of decoupling as integrated reporters with low SE scores (low integration) will be treated equally as companies with better integration. Hence, as the preceding studies were

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[114] An issue that arises here is that the assurance report doesn't explicitly show how the work was assigned between the auditor and the group of experts in the field that assist the auditor in the engagement (Manetti and Bacetti, 2009). The previous may contribute adversely by making the legal responsibility over the assurance less determined.

indecisive on the direction of the relationship between CSR and assurance, the third hypothesis is developed as:

H3: Ceteris paribus, there is an association between the issuance of assurance to an integrated report and the SE in the integrated report.

4.3.4 CG mechanisms

4.3.4.1 Board size

Corporate boards have developed from being a small homogeneous group into larger representative group in the last two decades (Goodstein et al., 1994, p. 241; Vance, 1983). Raheja (2005) contends that board size and composition have an effect on board members' incentives and board effectiveness. Enlarging board size has been evidenced to bring in more expertise and resources to the entity (Pfeffer, 1992, 1973), and widen the corporate strategy to include other perspectives to the financial dominated perspective (Pearce and Zahra, 1992). In terms of IR, Frias-Aceituno et al. (2013b) reported that the various skills and expertise coming from larger boards advances the integration of corporate information. Singh and Harianto (1989) assert that larger boards reduce the CEO's supremacy in building consensus over corporate decisions that may not be in the best favour of owners and stakeholders. To that end, larger boards will be more prone to incorporate newer sustainability aspects into practice and reporting.

Alternatively, numerous researchers argued that the increase in board size has material drawbacks. Larger boards weaken the ability to become coordinated due to the larger interactions between its members (Gladstein, 1984). Thus, larger boards results in increased chances of alliances among members of the board, which alleviates conflicts in the board (O'Reilly et al., 1989), and blocks reaching a consensus on important aspects (Goodstein et al., 1994). Olson (1982) contends that large boards delay the incorporation of new

technologies. Therefore, corporations with larger board size may be less expected to incorporate newer sustainability aspects into practices and reporting due to the higher likelihood of having conflicts on making decisions.

Empirical evidence on the relationship between board size and CSR is inconclusive. Frias-Aceituno et al. (2013b) found a positive significant association between the number of members of the board (board size) and the production of integrated reports. De Villiers et al. (2011b) found a positive association between board size and corporate environmental performance.[115] Huse et al. (2009) found a positive association between board size and the board's CSR control function.[116] Jizi et al. (2013) also found a positive relationship between board size and CSR disclosures in the US commercial banking industry. Chaganti et al. (1985) reported that companies with larger board size[117] in the retail industry were less likely to fail as opposed to companies with smaller board members.

Alternatively, many studies found no association between board size and CSR. Michelon and Parbonetti (2012) found no relationship between board size and corporate social, environmental and economic responsibility disclosures. Similarly, Post et al. (2011) found no association between board size and the level of environmental disclosure and performance. Likewise, Cheng and Courtenay (2006) observed that the increase in board size was insignificantly related to the level of voluntary disclosures.

In summation, John and Senbet (1998) assert the strengths and weaknesses of larger board may offset each other. They emphasise that strength coming from the higher monitoring capacities and experiences may become offset by the weakness arising from higher monitoring costs from poorer communication and complexities of decision making in larger

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[115] Environmental performance captured using scores of KLD categories: beneficial products/services, pollution prevention, recycling, clean energy, and a category capturing other environmental strengths.
[116] Huse (2007) denotes to CSR control as board involvement in fulfilling CSR requirements, stakeholder expectations, environmental concerns, and charitable contributions.
[117] The range was between 10-15 board members.

boards. However, given that integrated reports require the cohesion of various backgrounds (Stubbs and Higgins, 2014); boards with larger size may have an advantage to smaller boards. Based on the prior discussion, the fourth hypothesis is given as:

H4: Ceteris paribus, there is a positive association between the number of board of directors and the SE in the integrated report.

4.3.4.2 Board independence

Independent non-executive directors (INDs) are board members that are ascertained from the board to be independent of the corporate major shareholders, executive management and have no business relationships or shareholdings in it. Weisbach (1988) denotes to these directors as outside independent directors, as opposed to outside dependent (grey) directors who are neither employees nor managers, but have ties with management over business matters. Fama (1980) and Fama and Jensen (1983) argue that besides providing recommendations to the board over various strategic decisions, INDs provide a better monitoring function to management decisions.

It was argued that the existence of INDs on the board serves as a balance mechanism to address wider stakeholder issues (Haniffa and Cooke, 2005; Roberts et al., 2005), rather than solely focusing on financial business aspects. A key argument here is that INDs are more committed to stakeholder concerns (Zahra and Stanton, 1988), and by satisfying the societal responsibilities of the company, they are building and enhancing their status in the society (Haniffa and Cooke, 2005). Thus, suggesting that INDs would improve corporate social and environmental performance. In fact, Harjoto and Jo (2011) provide evidence that presence of INDs reduces conflicts of interest between managers and stakeholders and resulted in higher CSR engagement. Likewise, Ibrahim and Angelidis (1995) assert that outside directors are less contributing on corporate economic performance but are more concerned about its CSR. Moreover, Boone et al. (2007) and Mace (1971) showed that board independence is adversely

related to corporate management domination and positively related to the constraints against that influence. Another argument is that INDs are not related to management functions and hence can exert influence on companies to disclose more information to outside parties (Eng and Mak, 2003). This, in turn, may result in enhanced embeddedness of social and environmental aspects in the corporate reporting.

Pfeffer and Salancik (1978) cited in Hillman et al. (2000, p. 242) demonstrated that INDs bring in various specialist expertise, advance channels to communicate information and aid in building outside stakeholder relations and obtaining stakeholder support. Although such postulate about INDs expertise represents the general norm, in a Malay context, Haniffa and Cooke (2005) reported that most non-executive directors had limited experience and knowledge with regard to societal concerns.

The relationship between board composition (i.e. the percentage of independent outside directors to total board size) and corporate voluntary disclosure was inconclusive. Johnson and Greening (1999) found a positive association between the existence of outside directors and corporate social performance related to community, minorities, employee relations, environment and product quality. Jizi et al. (2013) found a positive association between the percentage of independent directors and CSR disclosure of a sample of US commercial banks. Chen and Jaggi (2000) found a positive relationship between the proportion of INDs and the comprehensiveness of disclosures on financial matters. Cheng and Courtenay (2006) also found a positive relationship between the percentage of INDs and the level of voluntary disclosures. Forker (1992) found a weak positive association between the existence of outside directors and the stock option disclosure quality. Furthermore, Post et al. (2011) reported a positive association between the environmental reporting and the proportion of outside directors on the board. De Villiers et al. (2011b) found a positive association between board independence and environmental performance.

Alternatively, other studies found no relationship between board independence and disclosures. Frias-Aceituno et al. (2013b) found no association between IR uptake and the presence of non-executive directors. Michelon and Parbonetti (2012) unexpectedly found that INDs were insignificantly related to sustainability disclosure. Elzahar and Hussainey (2012) found no relationship between risk reporting and existence of non-executive directors. Haniffa and Cooke (2002) found a weak negative association between the proportion of non-executive members and voluntary disclosure. Moreover, Haniffa and Cooke (2005) found a negative association between the proportion of non-executive directors and the corporate social disclosures. Similarly, Eng and Mak (2003) found a negative association between INDs and the level of voluntary disclosures. Wang and Coffey (1992) found that boards with a higher proportion of insider to outsider members had higher charitable contributions.

Although the results on the effect of director independence on disclosures were mixed, prior studies argued that their existence would have a positive effect (e.g., Cheng and Courtenay, 2006; Eng and Mak, 2003). Thus, INDs experience, relations and role, is expected to have a positive effect on SE. Hence, the fifth hypothesis is formulated as:

H5: Ceteris paribus, there is a positive association between the proportion of independent non-executive directors on the board and the SE in the integrated report.

4.3.4.3 Board gender composition

Board gender composition has received some attention in prior literature. Prior evidence shows that there was a gradually slow increase in the number of women being appointed in top management and board directorship positions over the past few years (Daily et al., 1999; Singh and Vinnicombe, 2004; Peterson and Philpot, 2007). The literature addressed the qualities of female directors and how that was reflected among different corporate facets (e.g., Hillman et al., 2002; Post et al., 2011; Wang and Coffey, 1992; Williams, 2003).

Hillman et al. (2002) studied the different attributes for minority directors to male dominant directorship in the Fortune 1000 index. Women directors on the board held doctoral degrees as twice or more as that for men directors (Hillman et al., 2002). Additionally, the majority of men on the board were business experts as opposed to the majority of women directors being support specialists and community influential members.[118]

The previous discussion opens up the criticism that men pay more attention to financial business issues rather than societal and human related business aspects (Huse and Solberg, 2006). Thus, due to the tendency of boards to being dominated by male business experts, recruiting women with specialised expertise or community influentials is meant to complement business experts (Hillman et al., 2002) and enhance board decision making (Ruigrok et al., 2007). Due to the previous attributes, Bear et al. (2010) argue that existence of women on the board has a positive impact on the corporate social capital[119] and CSR. Kraft and Singhapakdi (1995) and Burton and Hegarty (1999) found evidence that females are more concerned about social and environmental responsibility compared to males.

In summary, women directors on the board are with higher educational levels, have better stakeholder oriented occupational expertise and are more likely to be community influentials or support specialists than men (Hillman et al., 2002). Hence, Kesner (1988) claims that female members of the board are not "window dressing", but rather they are important to the firms' functioning. Additionally, boards with larger women stake give out more in terms of charitable contributions (Williams, 2003; Wang and Coffey, 1992). Therefore, Bear et al. (2010) suggest that women on the board can contribute to establishing and promoting CSR

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[118] Hillman et al. (2000) describe business experts as CEOs or senior managers at other large for-profit corporations. Support specialists offer expertise in business supporting issues as law, banking, and public relations and marketing (Hillman et al., 2000). Community influentials provide non-business perspectives and have expertise and links to powerful stakeholder groups at community levels. They include politicians, academics and university representatives and other social leaders (Hillman et al., 2000).

[119] Social capital refers to actual or potential resources inherent to more or less institutionalized relationships of mutual recognition (Bourdieu 1980) cited in Maak (2007, p. 332).

initiatives and aid in tackling corporate CSR issues. The previous suggests that the existence of women on the board help promote the corporate CSR culture. Furthermore, Bear et al. (2010) contend that the increase in women directorship may enhance communication among board members and hence promote embeddedness of CSR issues in corporate reporting.

Many empirical studies found a significant positive association between women on the board and CSR disclosure and performance. Bear et al. (2010) found a positive significant relationship between corporate CSR rating (based on KLD database) and the proportion of women on the board using a sample of Fortune list of the world best admired companies in 2009. Post et al. (2011) found that the existence of three or more female directors on the board is positively related to KLD environmental strength (at 10% level), but was not related to all environmental disclosures measures. Additionally, Frias-Aceituno et al. (2013b) found a positive significant association between the production on an integrated report and percentage of women directors on the board. Therefore, the study posits that boards with female directors have a positive impact of SE. Hence, the sixth hypothesis is developed as:

H6: Ceteris paribus, there is a positive association between the proportion of female directors on the board and the SE in the integrated report.

4.3.4.4 CSR committee

There is dearth in literature studying the effect of existence of CSR committee on corporate CSR performance and disclosures (e.g., Cowen et al., 1987; Michelon and Parbonetti, 2012; Mallin et al., 2013; Spitzeck, 2009). However, in practice, companies are currently placing importance on establishing CSR Committees on their boards (Mallin et al., 2013). Spitzeck (2009) explain that companies with CSR committees increased from 15% to about 60% between 2002 and 2008 according to a benchmark index for responsible companies in the UK (BITC Corporate Responsibility Index). Additionally, governments are also encouraging firms to have separate CSR committees to address the sustainability issues. For instance,

among other corporate actions, Canada emphasises the need to incorporate CSR committees to help achieve better corporate CSR governance and address CSR issues in greater depth.[120]

Swanson (2008, p. 244) contends that developing CSR committees can help firms set an attuned posture regarding societal responsibility. Paine (2014) postulates that CSR committee existence can result in more effective SE within corporations. Cowen et al. (1987) found that companies with CSR Committees placed higher importance on reporting on their human resources. Additionally, Mallin et al. (2013) found that CSR committee is a key element for corporations that were more oriented towards their stakeholders. Similar to Cowen et al. (1987), Mallin et al. (2013) also found that companies with CSR committees have better social and environmental performance in relation to community, employee relations, human rights, environmental and product quality. This finding supports Post et al. (2002) postulate that CSR committees review corporate sustainability policies and strategies so that the corporation is more committed to sustainability issues. In other words, CSR committees would enhance the corporate sustainability strategic positioning by embedding policies and strategies which improves the corporate sustainability performance.

Spitzeck (2009) showed that companies with CSR committees in place are better in terms of BITC Corporate Responsibility Index coverage to these with no CSR committees on the index. Michelon and Parbonetti (2012) found a weak positive relationship between CSR committee existence and the extent of social related disclosures. They, however, did not find a significant relationship with other CSR disclosures as environmental, economic, strategy disclosures or even with overall CSR disclosures. The previous results may provide some empirical support to Post et al. (2002) postulate that CSR committees are involved in the process of reporting of social and environmental disclosures. Therefore, CSR committees not

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[120] Government of Canada "Roadmap Towards Good CSR Governance": http://www.ic.gc.ca/eic/site/csr-rse.nsf/eng/rs00580.html

only embed sustainability strategies and policies, but also take part on reporting and integrating sustainability issues in corporate reports. Hence, the seventh hypothesis is developed as follows:

H7: Ceteris paribus, there is a positive association between CSR committee existence and the SE in the integrated report.

4.3.4.5 Board structure

Literature comparing unitary (one-tier) and dual (two-tier) board structures are in fact limited. Listed companies in many countries including the UK, USA and Canada apply a unitary board system (Maassen and Van Den Bosch, 1999). Listed companies in Austria, Denmark, Germany and the Netherlands utilise a two-tier board system (Krivogorsky, 2006; Maassen and Van Den Bosch, 1999). Some countries have a unitary board system, but allow companies to from dual board systems as Belgium, France and Portugal (Krivogorsky, 2006). Both board structures have similar practices as both encompass supervisory (monitoring) and managerial functions (Krivogorsky, 2006). However, main structural difference is that monitoring of the managing directors is either dedicated to a separate board (i.e. a supervisory board in a two-tier board) or as a function in the same board in a unitary board (Krivogorsky, 2006; Jungmann, 2006; Rose, 2005). Additionally, in a two-tier system, the supervisory board is composed of non-executive members and management board constitutes executives (Maassen and Van Den Bosch, 1999).[121]

Each board type has its advantages and disadvantages that stems from its structure (Krivogorsky, 2006). Donaldson and Davis (1994) and Rose (2005) postulate that the separation of supervisory and managerial functions in a two-tier board offers an improvement

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[121] China also implements a two-tier board system that is different than the German two-tier system (Firth et al., 2007). Firth et al. (2007) show that according to the Chinese Governance Code, the supervisory board is composed of at least three members, one (at least) is elected by employees and one (at least) is a minority shareholder representative. The second board is the board of directors, which is similar to the unitary board system in the US and the UK, and consists of both executives and non-executives (ibid.).

to board independence compared to a unitary board. Supervisory boards were found to be involved in the development and approval of the corporate strategy, as well as supervising its implementation (Maassen and Van Den Bosch, 1999; Aste, 1999), which might give the supervisory board a room to induce more sustainability issues into the strategy development and implementation. Supervisory boards may also include various stakeholder group members as union officials and professors (Douma, 1997), who may promote sustainability practices.

Conversely, a unitary board may ease the information flow and release the barriers between the supervisory and managerial board functions (Krivogorsky, 2006). Although establishing board committees is made on a voluntary basis in two-tier boards as opposed to unitary boards, it was found that committees set in the two-tier boards is composed of executives and non-executives, which is mainly different from unitary boards due the notion on making the committees more independent (Maassen and Van Den Bosch, 1999).

Given the previous, although two-tier boards may induce sustainable practices given the coalition of non-executives in a separate board, the diffusion of SE may be slower. Thus, while two-tier boards may stimulate better SE, there exists no evidence in literature that either board systems surpass the other with regard to SE. Hence, the eighth hypothesis is formulated as:

H8: Ceteris paribus, there is an association between board type and the SE in the integrated reports.

4.3.5 Control Variables

As shown above, the literature on SE concentrated on identifying its various elements using interviews or questionnaires with organisations and case studies. Therefore, limited is known about the firm characteristics that may explain SE in corporate integrated reports. As a result,

the study identifies the firm level control variables in line with prior research in the wider context of sustainability reporting. The study used the three firm variables that were widely used in prior studies. The factors are firm size, profitability and leverage as well as showing industry dummies.

Corporate size has been most commonly recognised as a determinant of sustainability reporting and therefore has to be controlled for. Corporate size was mainly found to be positively associated with the quality (measured by the comprehensiveness) of environmental and social reports (e.g., Clarkson, 2008). Accordingly, it can be argued that larger integrated reporters will provide more comprehensive sustainability information. However, SE relates not only to the comprehensiveness of the disclosures on sustainability but also to the integration of sustainability within the corporation. Thus, the complexity of large firms' operations may hinder SE. IR adopters were found to be significantly smaller than non-adopters (see: Table 2.16). As the complexity may less likely be an issue for the integrated reporters, it can be argued due to the larger integrated reporters would have higher SE due to their wider reach and stakeholder range.

It can be argued that firms with lower profitability and larger financial obligations (higher leverage) may reduce their focus on implementing sustainability into their strategies, actions and decisions and focus their attention on improving their profitability and financial position. This was particularly the case with Traidcraft Plc which shifted its attention from the implementation of social project towards improving its poor financial performance (Dey, 2007). In contrast, financial performance is set to have a main impact on corporate reputation risk (Bebbington et al., 2008). Additionally, by financing the capital structure through riskier debts, companies would increase their risk levels to shareholders. Risks arising from poor social and environmental performance could also be second order risk (Bebbington et al.,

2008). Therefore, companies with high leverage may report address more sustainability related matters to reduce the risks from debtholders pressure (Clarkson et al., 2008). Reporting on sustainability practices would provide assurances about the quality of corporate management and could mitigate financial risks (Bebbington et al., 2008). Therefore, the relationship between SE and both profitability and leverage can be argued both ways. Thus, although prior research has argued that profitability and leverage are important firm characteristics that may explain sustainability related reporting, the results on such relationship were inconclusive.

4.4 Research sample and design

This section identifies the sample and the statistical method used. Finally, the study model is outlined and the measurement of each variable is provided.

4.4.1 Sample

The study examines the determinants of SE in the integrated reports using the sample of 136 integrated reporters in 2010 that is also used in chapter 3. Thus, description of sample distribution by country and industry has been provided in Table 3.2.

4.4.2 Method

The dependent variable (SE) is a continuous variable computed as the score of items disclosed divided by the number of items in the SE index. Therefore, the study employs a multiple OLS regression model to test the functional relationships between SE and the predictor variables. Acock (2008) and Long (1997) reported that multiple regression and the extensions derived from the original model is the core statistical technique used by most

social science journal publications.[122] Thus, the application of multiple regression is of high familiarity among academics in social science discipline.

There are several assumptions underlying the multiple OLS regression model that needs to be verified (see: Stock and Watson, 2007; Gujarati and Porter, 2009; Wooldridge, 2009) as failure to comply with the assumptions results in misleading model relationships. Firstly, the error term (ui) has to be normally distributed (Normality assumption). Secondly, the relationship between the explanatory variables and the outcome variable is linear (linearity assumption). Third, the variance of the error (ui) is constant (Homoscedasticity assumption). Fourth, there are no large outliers in the model (testing for influential observations). Finally, there is no any regressor that is highly or perfectly correlated to the other regressor(s) of the function (collinearity assumption). A discussion of actions made to ensure the assumptions of the study's regression model do hold is provided below.

Similar to Haniffa and Cooke (2002; 2005), the study undertakes several multiple regression diagnostics to ensure the model assumptions hold.[123] Normality of residuals is checked using Shapiro–Wilk test, Skewness/Kurtosis test, plots for the residuals against the normal distribution curve and provides P-P plot. Linearity is ensured by plotting residuals against predicted values and Q-Q plot. Homoscedasticity assumption is also ensured by firstly using residual against fitted plot. Secondly, the study utilises White's test and Breusch-Pagan test. Multicollinearity is tested using both the variance inflation factor (VIF) and the correlation matrix in the same manner as implemented in chapter 2.

Finally, the study runs separate regressions for the model excluding influential observations, winsorising continuous independent variables and the model using normal scores for SE.

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[122] Extensions derived from the multiple regression model include: interaction model, limited dependent variable model, two-stage least squares model and time series analysis and forecasting. For details about these models consult Stock and Watson (2007).

[123] As in chapter 2, all the regressions and diagnostics checks were carried through Stata software.

Normal scores transformation was proposed by Cooke (1998) and applied in many disclosure studies (e.g., Haniffa and Cooke, 2005; Mohd Ghazali and Weetman, 2006). Cooke (1998) argues that normal scores can be used to preserve monotonicity and linearity relationship between the dependent and independent variables in the model. Other methods to fix such problem are to use rank, log transformations (Cooke, 1998), which were applied as a sensitivity check.

In the winsorised model the values of continuous variables at 1% as done in chapter 2. The model excluding influential observations, excludes observations with absolute value of residuals and Pregibon leverage scores exceeding +/- 2 of the mean score for all observations as shown in more detail in the Multiple regression diagnostics subsection.

4.4.3 Model
The study regression equation is expressed as:

$$
\begin{aligned}
EMBED = \beta_0 &+ \beta_1 IRAGE_i + \beta_2 GRIL_i + \beta_3 ASSURED_i + \beta_4 BOARDSIZE_i + \beta_5 INDEP_i \\
&+ \beta_6 FEMALE_i + \beta_7 CSRCOMM_i + \beta_8 BOARDTIER_i + \beta_9 SIZE_i \\
&+ \beta_{10} PROFIT_i + \beta_{11} LEVERAGE_i + \varepsilon_i
\end{aligned}
$$

Where:

β	= parameters;
ε_i	= error term; and
i	= the ith observation.

Table 4.1 shows the basis of measurement of the dependent and explanatory variables that are included in the empirical study model. The study includes legal system (English, French, German, Scandinavian and Socialist) as well as industry dummies in the regression model. The industry dummies are based on the ICB industry classification.

Table 4.1: Predictor variables

Variable	Name	Measure	Source
Dependent Variable			
EMBED	SE score	Calculated as the indicators scored on the SE index for a company divided by the total (34) indicators	SE Index
Independent Variable			
IRAGE	IR age	A count for the number of years a company produced an integrated report	Chapter 2
GRIL	GRI Application Level	GRI application level on the integrated report (A, B, C or unidentified), taking values 3, 2, 1 or 0 respectively.	Integrated report/ GRI report list
ASSURED	Report assured	1 if external assurance provided to the integrated report, 0 otherwise	Integrated report
BOARDSIZE	Board size	Count of the number of directors on the board	Integrated report/ CG section
INDEP	Board Independence	the proportion of independent non-executive directors to the total number of board members	Integrated report/ CG section
FEMALE	Female directorship	the proportion of female directors divided by the total number of board members	Integrated report/ CG section
CSRCOMM	CSR Committee	1 if the company had a CSR committee, 0 otherwise	Integrated report/ CG section
BOARDTIER	Board structure	1 if the company had a two-tier (dual) board, 0 if the company had a one-tier (unitary) board	Integrated report/ CG section
Firm characteristics controls			
SIZE	Company size	Natural Logarithm of total assets	Data Stream code (WC02999)
PROFIT	Profitability	ROE calculated as the net income divided by the total equity	Data Stream code (WC01651 ÷ WC03995)
LEVERAGE	Leverage	Total debt divided by total equity	Data Stream code (WC03255 ÷ WC03995)
Control for the production of more than one report			
ONEREPORT	One integrated report	1 if the company produced only one annual/integrated report in 2010; 0 if the company had other publications as annual review, CG report, diversity report, accountability report… etc.	Corporate annual publications on its website

4.5 Univariate and bivariate analysis

This section discusses the descriptive statistics for the dependent and independent variables. Frequencies for the SE (dependent variable) index coverage are then provided. In the bivariate analysis, cross tabulations and correlation matrix results are discussed.

4.5.1 Univariate analysis

Table 4.2 shows the univariate descriptive statistics for the independent variables. Descriptive statistics for the continuous and ordinal variables are provided in panel (a). On average, the number of years of IR adoption for the sample is about 3 years. The minimum is 1 year (for

companies producing integrated reports in 2010) and the maximum is 10 years (for companies that have published the first integrated report in 2001). Hence, IR has been only recently adopted by companies. The mean (median) of GRI application level is 1.73 (2) (i.e. closer to application level B which is assigned a value of 2).[124] This shows that on average integrated reporters have covered a large portion of the GRI indicators.

Table 4.2: Descriptive statistics of dependent and independent variables

Panel (a): Descriptive statistics of dependent and continuous and categorical independent variables (N= 135)

Variable	Mean	Median	Std. Deviation	Minimum	Maximum
EMBED	54.48%	53.65%	17.67%	11.76%	88.24%
IRAGE	2.903	2	2.334	1	10
GRIL	1.733	2	1.154	0	3
BOARDSIZE	11.570	11	3.897	5	27
INDEP	49.94%	50%	21.44%	8.33%	100%
FEMALE	15.35%	13.33%	12.56%	0%	55.56%
SIZE (1,000 €)	18,613,515	3,825,059	46,878,474	25,108	442,483,540
PROFIT	0.163	0.137	0.218	-0.755	1.252
LEVERAGE	1.204	0.508	1.802	0.042	8.962

Panel (b): Descriptive statistics of dummy variables (N=135)

Variable	Mean	Median	Std. Deviation	Minimum	Maximum
ASSURED	0.407	0	0.493	0	1
CSRCOMM	0.533	1	0.501	0	1
BOARDTIER	0.163	0	0.371	0	1
ONEREPORT	0.815	1	0.390	0	1

See Table 4.1 for variable definitions

With regard to CG continuous variables, the average (median) board size for the integrated reporters was 11.55 (11) members, similar to Frias-Aceituno et al. (2013b) sample of integrated and non-integrated reporters with mean board size of 11.2. The board size of integrated reporters varied widely from as low as 5 members to as high as 27 members. Around half of the board of directors were independent, lower than Frias-Aceituno et al. (2013b) with average board independence of 78.66%. The reason is because they divided all non-executive directors by the total board size, counting grey directors as independent. Board independence reached 100% for three companies in the sample which had fully independent

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[124] GRI application level ranges between 0 (undeclared) and 3 (application level A).

directors sitting on their unitary boards.[125] The average (median) proportion of female directors on the board was 15.65% (13.33%), higher than Frias-Aceituno et al. (2013b) 9.35% female directors on integrated and non-integrated company board. In the largest women constitution on the board, women had more than 55% domination, but there were integrated reporters with no women representation on their board. In more detail, about 21.3% of the boards had no females (29 companies), and 75% of which had 2 female board members or less (100 companies).

In terms of corporate characteristics, the mean (median) corporate size expressed in total assets is 18.48 (only 3.77) billion euros. This suggests that size is heavily right (positively) skewed to the normal distribution curve. Hence, size was transformed using natural logarithm. Average (median) profitability, measured by the return on equity, was 16.3% (13.7%). The difference between lowest and highest profitability values requires case as it suggests existence of outliers. Likewise, the mean (median) leverage (Debt-to-equity) was 1.20 (0.51) times. Again, suggesting positively skewed and large variations among the sample of integrated reporters in leverage requiring attention to outliers. The two extremes in the leverage ratio show the dependence on equity on one side to finance assets and the

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[125] The three companies were: Cermaq ASA, Outokumpu OYJ and Daetwyler Holding AG.
- Cermaq ASA reports on its annual report that "All the board members are independent of the company's principal shareholders, executive management and material business associates" (Annual report 2010, p. 48)
- Outokumpu OYJ reported on its annual report that "All members of the current Board of Directors are independent of the company and its main shareholders" (Annual report 2010, p. 125)
- Datwyler Holding AG reports that "The Board of Directors is the ultimate decision-making, management and governing body of the Datwyler Group. The Board consists of no fewer than five and no more than eleven members. At 31 December 2010, the Board comprised seven Directors. The Directors or companies and organisations which they influence have no executive functions in the Group, do not have any business relationship with the Datwyler Group and are all independent" (Annual report 2010, p. 37)
Cermaq is a Norwegian company, whereby the code may allow for a majority/all of members of the board of directors being independent. According to the Norwegian corporate governance code p. 31: "The composition of the board of directors should ensure that it can operate independently of any special interests… The board of directors should not include executive personnel. If the board does include executive personnel, the company should provide an explanation for this and implement consequential adjustments to the organisation of the work of the board, including the use of board committees to help ensure more independent preparation of matters for discussion by the board, cf. Section 9." Available at: http://www.statoil.com/en/About/CorporateGovernance/CorporateGovernance/Downloads/The%20Norwegian%20Code%20of%20Practice%20for%20Corporate%20Governance%2023%20October%202012.pdf (accessed 8/3/2014).

excessive dependence of liabilities to finance assets. As previously stated the existence of financial in the sample (mainly relying on liabilities to finance assets) remains an issue. Therefore, the study runs a separate regression for only non-financial companies in the main results section. The observation with negative equity was excluded in the regressions so the final number of observations in the regression is 135. As a first action towards outliers the continuous variables were winsorised at 1% and the results are shown independently to the main model before winsorising.

Descriptive statistics for independent dummy variables are shown in panel (b). Nearly 41.2% of the sample integrated reporters had their reports externally assured. Results slightly higher than that for the top 100 companies in 16 countries (N100), where only 38% had their corporate responsibility reporting assured (GRI 2013b). Additionally, around 53% of integrated reporters had a CSR Committee. The results are not dissimilar to Mallin et al. (2013) whereby 59.9% of a sample of best US Corporate Citizens had CSR or Ethics Committee on their board. The lower ratio may suggest that integrated reporters use communication and steering committees containing representatives from various departments in order to plan and implement integrated strategies (Stubbs and Higgins, 2014). However, these ratios are substantially higher than the only 10% of US listed companies having a CSR committee (Paine, 2014). Only 16% of integrated reporters incorporated a two-tier (dual) board system as compared to 84% having a unitary board system. Majority of integrated reporters (81.6%) a "one report", as opposed to only 18.4% produced more than one report in 2010.

Figure 4-1 shows the mean SE score for the 2010 integrated reports of early/late IR adopters. As shown, the average SE scores for the 2010 integrated reports for companies that have introduced IR for the first-time before 2009 and 2010, were higher than the mean (54.38%). The higher average scores were envisaged in the early IR adopters, with scores of 66.9%,

66.2%, 59.6% and 58.8% for the 2010 integrated reports of first-time adopters in 2003, 2004, 2002 and 2001 respectively. Conversely, the lowest average scores were for the 2010 integrated reports for companies introducing IR in 2009 and 2010 with scores of 53% and 51.1% respectively.

Figure 4-1: Average SE index coverage scores per year
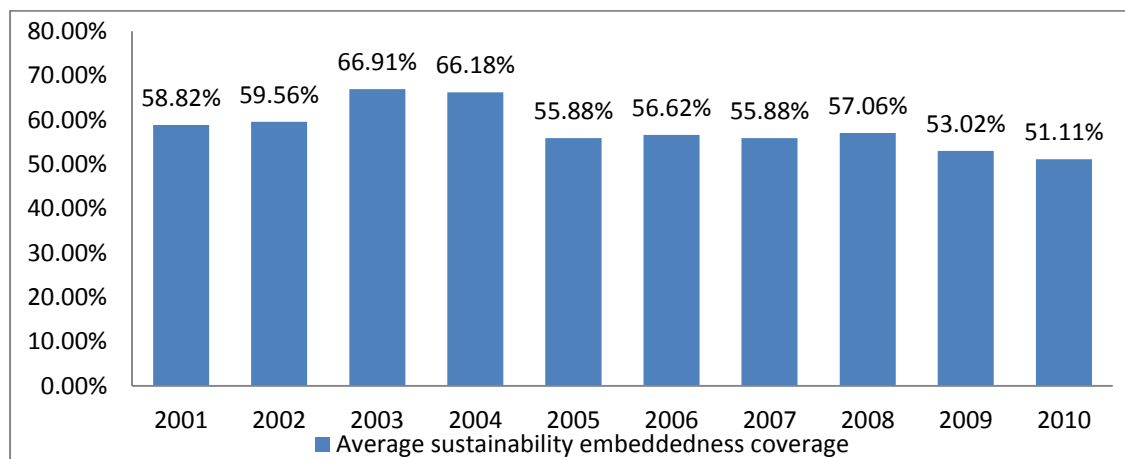
The maximum, minimum, mean and median SE scores for the 2010 integrated reports of early/late IR adopters are given in Table 4.3. As shown the number of observations is very limited. Although an Anova test or a non-parametric equivalent would be helpful to show statistical significance, the study can only tentatively comment on the differences. To overcome this issue the study separates adopters into two groups early/late in order to test for the differences between them (see: Table 4.4). The highest median SE scores on Table 4.3 were attributable for 2003 and 2002 with scores of 73.53% and 66.18% followed by 2001, 2004 and 2007 with the median score of 64.71%. Year 2006 had a median score of 55.88%, which is the same as the median score of the whole sample. Both 2005 and 2008 scored slightly above median at 58.82% and 2009 and 2010 were again the lowest with median scores of 52.94% and 50% respectively. The median scores relatively shows that sustainability scores in early years are higher than the later years. Generally, there were large discrepancies between the maximum and minimum scores per year. The widest difference

was in 2007 with difference of 24 points (maximum 28 – minimum 4). The least

discrepancies were in 2005 and 2006 with difference of 5 and 6 indicator points respectively.

Table 4.3: SE maximum, minimum and mean scores by year

Year	Obs	Maximum score (%)	Minimum (%)	Mean (%)	Median (%)
2001	3	30 (88.24%)	8 (23.53%)	20.00 (58.82%)	22.00 (64.71%)
2002	4	27 (79.41%)	9 (26.47%)	20.25 (59.56%)	22.50 (66.18%)
2003	4	30 (88.24%)	11 (32.35%)	22.75 (66.91%)	25.00 (73.53%)
2004	4	26 (76.47%)	20 (58.82%)	22.50 (66.18%)	22.00 (64.71%)
2005	3	21 (61.76%)	16 (47.06%)	19.00 (55.88%)	20.00 (58.82%)
2006	4	26 (76.47%)	13 (38.24%)	19.25 (56.62%)	19.00 (55.88%)
2007	16	28 (82.35%)	4 (11.76%)	19.00 (55.88%)	22.00 (64.71%)
2008	15	27 (79.41%)	9 (26.47%)	19.40 (57.06%)	20.00 (58.82%)
2009	37	28 (82.35%)	5 (14.71%)	18.03 (53.02%)	18.00 (52.94%)
2010	45	28 (82.35%)	7 (20.59%)	17.38 (51.11%)	17.00 (50.00%)

4.5.2 Bivariate analysis: cross tabulation

Table 4.4 shows the differences between early and late adopters in EMBED. To divide

adopters into early or late adopters, the study follows Delmas and Montes-Sancho (2011),

whereby a 50% adoption threshold was used to separate early adopters from late adopters.

Since, companies adopt IR every financial year; the best approximation was to include

integrated reporters up to year 2008 as early adopters (54 companies) comprising 40% of the

sample and years 2009-2010 as late adopters. Another method to differentiate early from late

adoption is by using the middle year of adoption as the cut-off (Delmas and Montes-Sancho,

2011; Mahajan et al., 2000). Thus, early adopters would adopters of IR from 2001 till 2005;

late adopters in the sample would be adopters of IR starting from 2006. Therefore, IRAGE1

and IRAGE2 variables represent the 2 cut-off methods for early and late adopters.[126] Early

adopters were given a value of 1, late adopters were given 0. Wilcoxon rank-sum test shows

that both groups are different. Means for EMBED were higher for early adopters EMBED of

late adopters. Same can be derived when looking at the t-test undertaken, whereby the t-

statistics is significant at a 5% level and 10% using cut-off by observations and by years.

Hence, again suggesting that early adopters are different to late adopters in EMBED scores.

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[126] In the main regression model IRAGE categorical variable is used for early and late adopters, which denotes to the number of years since the company produced its first integrated report. IRAGE1 and IRAGE2 substitutes IRAGE as a sensitivity check.

The bivariate results provide some support in favour of the postulate that early adopters would have higher SE to that of later adopters.

Table 4.4: SE scores (EMBED) and Early versus Late adopters

Panel (a): Using observation as cut-off (early adopters up to 2008)

IRAGE1*	Obs	Mean	St dev.	t-statistic		Significance
Early adopters= 1	53	0.5838	0.165	t= -2.0827		P= 0.0392
Late adopters= 0	82	0.5197	0.189	Wilcoxon Rank-sum test		Significance
Total	135	0.5448		Z= -2.165		P= 0.0304

* Cut-off using first 40% as early adopters and later 60% as late adopters

Panel (b): Using year 2006 as cut-off

IRAGE2†	Obs	Mean	St dev.	t-statistic		Significance
Early adopters= 1	18	0.6193	0.172	t= -1.9382		P= 0.0547
Late adopters= 0	117	0.5334	0.194	Wilcoxon Rank-sum test		Significance
Total	135	0.5448		Z= -1.865		P= 0.0622

† The cut-off number of years based on this method would be [(2001 – 2010)/ 2] = 5

Cross tabulation between EMBED and GRI application level is provided in Table 4.5. It is observed that companies with higher GRI application levels tend to have better SE index coverage. Out of the 30 companies having an unidentified application level, 24 companies scored below the median (55.88%) and only 6 companies scored above median. In application level "A" only 10 out of the 46 companies scored below median, while 36 companies scored above median. To test the differences in scores of the GRI application levels statistically the study employed Kruskal-Wallis test as outlined in Pevalin and Robson (2012) and Acock (2012). Kruskal-Wallis test is a non-parametric test used to test the differences in medians of three or more categories (Hamilton, 2006).[127] Results show that the chi-squared= 47.57 (p<0.0001) is significant. Therefore, the null hypothesis that the medians of GRI application levels are equal is rejected, revealing differences in median SE scores for the GRI application levels. Hence, the higher GRI application levels are different in median EMBED to the lower application levels.

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[127] Kruskal-Wallis test is a preferable method over Anova parametric test if there is doubt to normality assumptions or there are chances of having outliers in the data (Hamilton, 2006; Acock, 2012), caused by the small number of observations in each subsample.

Table 4.5: SE score (EMBED) and GRI application level (GRIL)

% coverage	GRI Level of Application			
	0(Unidentified)	1(C level)	2(B Level)	3(A Level)
Less than 10%	0	0	0	0
10% < 20%	2	1	0	0
20% < 30%	6	2	0	2
30% < 40%	6	6	2	1
40% < 50%	9	4	7	4
50% < 60%	4	6	10	5
60% < 70%	3	1	9	14
70% < 80%	0	2	7	15
80% < 90%	0	0	2	5
90% to 100%	0	0	0	0
Total Observations	30	22	37	46 135
Median 55.88%				
Below median	24	18	18	10
Above median	6	4	19	36
Kruskal-Wallis Test	Chi-square= 47.57		P-value= 0.0001	

Cross tabulation between the board type and EMBED is given in Table 4.6. The descriptive results show that out of the 113 integrated reporters with a unitary board structure, 64 companies (57%) had scores below median and 49 (43%) scored above median. Only 6 companies (27%) of the 22 integrated reporters with two-tier boards scored below median while the remaining 16 companies (73%) scored above median. The study employs Wilcoxon rank-sum test as a non-parametric method to test the differences in median SE scores between two subsamples (Pevalin and Robson, 2012). Results show that integrated reporter's board types significantly differ with respect to the median scores as 1% level.

Table 4.6: SE scores (EMBED) and board type (Unitary vs. Dual boards).

% coverage	BOARDTIER	
	0 (Unitary Board)	1 (Dual or Two-tier Board)
Less than 10%	0	0
10% < 20%	3	0
20% < 30%	10	0
30% < 40%	14	1
40% < 50%	22	2
50% < 60%	22	3
60% < 70%	20	7
70% < 80%	18	6
80% < 90%	4	3
90% to 100%	0	0
Total Observations	113	22 135
Median 55.88%		
Below median	64	6
Above median	49	16
Wilcoxon rank-sum test		Z= -2.873, p-value= 0.004

Table 4.7 shows the cross tabulation between integrated report assurance and EMBED. Integrated reporters with no assurance provided were 80 companies, from which 56 companies scored below median and only 24 scored above median. Integrated reporters providing assurance on their reports were 55, out of which only 14 companies scored below median and 41 companies scored higher than the median. Wilcoxon rank-sum test show both groups statistically differ with respect to their SE scores at a 1% level in favour of integrated reporters having assurance on their report.

Table 4.7: SE scores (ENBED) and assurance of the integrated report (ASSURED)

% coverage	0 (No Assurance)	1 (Assurance provided)	
Less than 10%	0	0	
10% < 20%	3	0	
20% < 30%	8	2	
30% < 40%	14	1	
40% < 50%	21	3	
50% < 60%	15	10	
60% < 70%	10	17	
70% < 80%	7	17	
80% < 90%	2	5	
90% to 100%	0	0	
Total Observations	80	55	135
Median 55.88%			
Below median	56	14	
Above median	24	41	
Wilcoxon rank-sum test		Z= -5.590, p-value= 0.000	

Cross tabulation between existence of a CSR Committee and EMBED is provided in Table 4.8. Integrated reporters with no CSR Committee in the sample were 63, where 38 of them scored below median and 25 scored above median. Alternatively, integrated reporters having a CSR committee were 72, from them 32 scored below median and 40 scored above median. Wilcoxon rank-sum test show that there is a difference between the two groups at a significance level of 5% in favour of companies with CSR committees.

Table 4.8: SE scores (EMBED) and existence of a CSR Committee (CSRCOMM)

% coverage	0 (No CSR Committee)	1 (CSR Committee existed)	
Less than 10%	0	0	
10% < 20%	1	2	
20% < 30%	6	4	
30% < 40%	10	5	
40% < 50%	14	10	
50% < 60%	11	14	
60% < 70%	11	16	
70% < 80%	8	16	
80% < 90%	2	5	
90% to 100%	0	0	
Total Observations	63	72	135
Median 55.88%			
Below median	38	32	
Above median	25	40	
Wilcoxon rank-sum test	Z= -2.378, p-value= 0.017		

Table 4.9 shows a cross tabulation for the production of a one report and EMBED. As shown, integrated reporters producing more than one report was 25, where 17 scored below median and only 8 scored above median. Companies producing only one integrated report were 110, with 53 companies scoring below median and 57 above median. Wilcoxon rank-sum test show evidence against the expectation that the median of EMBED is higher for integrated reporters with ONEREPORT to these producing more than one report. In fact, the result suggests that there is no difference between the distributions of both groups with regard to EMBED.

Table 4.9: SE scores (EMBED) and production of a one report (ONEREPORT)

% coverage	0 (Production of more than one report)	1 (production of a one report)	
Less than 10%	0	0	
10% < 20%	0	3	
20% < 30%	3	7	
30% < 40%	3	12	
40% < 50%	5	19	
50% < 60%	9	16	
60% < 70%	3	24	
70% < 80%	2	22	
80% < 90%	0	7	
90% to 100%	0	0	
Total Observations	25	110	135
Median 55.88%			
Below median	17	53	
Above median	8	57	
Wilcoxon rank-sum test	Z= -1.475, p-value= 0.140		

4.5.3 Bivariate analysis: correlation matrix

Table 4.10 shows the bivariate relations resulting from the correlation matrix between the SE scores (EMBED) and the independent variables. Bivariate relation between IRAGE and EMBED is positive and the coefficient is significant at 5% level. Hence, ignoring the effect of other independent variables, there exist a positive relationship between IRAGE and EMBED. Similarly, CSRCOMM and SIZE were positively related with EMBED at a 5% level. GRIL, ASSURED and BOARDTIER were also positively related to EMBED at 1% significance level. INDEP was also positively related to EMBED, but at a 10% level. Conversely, BOARDSIZE, PROFIT, LEVERAGE and FEMALE had no significant correlations to EMBED. Even though, these prior correlations had an insignificant p-value, the coefficient sign shows that the direction is negative for FEMALE and LEVERAGE in relation to EMBED.

Results of the correlation matrix show that most of the correlations were between the low and very low correlation (i.e. up to 0.4). The highest correlations were observed between GRIL and ASSURED (0.602) and GRI and EMBED (0.587) significant at 1% level, which were still about medium correlated according to Lin et al. (2009). The correlation between GRI application level and assurance suggests that there is likelihood that companies with a higher GRI application level seek assurance for their reports. The correlation matrix results do not raise any issues concerning multicollinearity.

Table 4.10: Correlation matrix for the SE scores and the independent variables

	EMBED	IRAGE	GRIL	ASSURED	BOARDSIZE	INDEP	FEMALE	CSRCOMM	BOARDTIER	SIZE	PROFIT	LEVERAGE
EMBED	1											
IRAGE	0.192**	1										
GRIL	0.588***	0.151*	1									
ASSURED	0.476***	0.125	0.612***	1								
BOARDSIZE	0.006	-0.056	0.112	0.201**	1							
INDEP	0.149*	-0.024	0.078	0.165*	-0.100	1						
FEMALE	-0.037	0.108	0.068	-0.036	-0.024	0.182**	1					
CSRCOMM	0.194**	0.006	0.171**	0.171**	0.145*	0.041	-0.022	1				
BOARDTIER	0.243***	-0.001	0.137	0.124	0.008	0.069	-0.222***	-0.190**	1			
SIZE	0.186**	0.156*	0.233***	0.216**	0.321***	0.196**	0.177**	0.130	0.072	1		
PROFIT	0.029	0.124	0.053	0.161*	-0.020	0.042	0.056	-0.006	-0.177**	-0.067	1	
LEVERAGE	-0.022	0.058	0.083	0.045	0.257***	-0.100	-0.011	-0.050	0.072	0.429***	-0.026	1

* Significant at 10%;** Significant at 5%;*** Significant at 1%
See Table 4.1 for variable definitions

4.6 Regression results and discussions

Firstly, the section shows the regression diagnostics to the OLS assumptions. The regression findings and discussions are then provided. Finally, sensitivity checks are given.

4.6.1 Multiple regression diagnostics

This subsection shows the procedures undertaken mainly to verify that the assumptions of the OLS regression are met. Specifically, the study checks for OLS model normality, linearity, homoscedasticity, and the non-existence of perfect multicollinearity.

Correlation matrix showed that the variables were not very highly correlated. The maximum VIF scores in all regressions were as high as 2.54 (see at the bottom of Table 4.11). Hence, the VIF scores are well below the cut-off point of VIF 10, which indicates that the model does not suffer from multicollinearity issues. Thus, the OLS model satisfies the collinearity assumption (i.e. none of the variables in the model suffers from high multicollinearity issues).

Normality assumption was verified using both graphs and statistical tests as provided in appendix 4.1. Firstly, the graph plotting residuals against a normal distribution curve indicates that there are no normality concerns as both curves are fairly similar. In the standardised normal probability P-P plot, the residuals are represented around the straight line with two small humps, which also indicates that the residuals are normally distributed. In both Shapiro-Wilk W test and Skewness/Kurtosis test the p-value was large (statistically insignificant). Hence, the normality assumption for the r (residual) cannot be rejected (i.e. the residuals of the model are normally distributed).

Graphical and statistical tests to check for the OLS homoscedasticity assumption is provided in appendix 4.2. A graph plotting of residuals versus predicted values is shown. The scatted points seems wider with the smaller predicted values at the graph, but seems to narrow at the end of the graph. Hence, the graph indicates a potential violation against the

homoscedasticity. Therefore, White test and Breusch-Pagan / Cook-Weisberg test were employed to test for heteroskedasticity. The results from both tests show an insignificant and large p-value. Thus, based on this finding it can be indicated that the distribution is not heteroskedastic (i.e. the distribution is homoscedastic).

The graphical representation for testing the linearity assumption is given in appendix 4.3. Both P-P plot and especially the Q-Q plot, show that the relationship between the dependent variable and the independent variable is in fact linear. Thus, the linearity assumption is also validated.

Looking at the overall model, F-statistic is significant at 1% in all regressions (in Table 4.11), which indicates that there is a highly significant relationship between the SE scores and the set of predictor variables in the model.[128] Hence, we can reject the null hypothesis that the independent variables collectively have no effect on the SE index. Adjusted R-squared for the regressions varied from as low as 0.40 to as high as 0.49.[129] When excluding influential observations from the model 49% of variation in SE that is explained by the independent variables in the model. Adding the "ONEREPORT", the adjusted R-squared stayed at the 40% range, thus, suggesting that the "ONEREPORT" variable is not helping to explain the variation in SE scores.

As a rule of thumb, individual observations with absolute studentised residual of above 2 are considered outliers and require attention (Cook, 1977). Acock (2012, p. 234) suggested excluding outlier observations especially these with absolute value above 2.58. Studentised residual is calculated by dividing the residuals by the standard error (Cook, 1977). Due to the

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[128] The F-value denotes to the ratio of the mean square of the model to the mean square of the residual, and shows whether the dependent variable significantly related to a set of variables (Acock, 2012).

[129] Adjusted R-squared is a modified version of the coefficient of determination (R-squared) that does not necessarily increase when a new independent variable is added to the regression model (Stock and Watson, 2007, p. 775). The adjusted R-squared shows the percentage of variation in the dependent variable (SE scores) that is explained by the independent variables that meaningfully affect it (Stock and Watson, 2007; Gujarati and Porter, 2009). A clear benefit of reporting the adjusted R-squared over the normal R-squared is because an independent variable is added "ONEREPORT" in the fourth regression. Hence, the R-squared increases for any increase in the number of variables, which may be misleading.

effect that the outliers may have on driving the results, the study utilised the more conservative view by omitting observations with studentised residual of above 2. In this case, 7 observations met this criterion. Likewise, 3 observations meeting the criterion for high Pregibon leverage were omitted. An observation with leverage greater than $(2k+2)/n$ is considered an outlier observation[130] (Rousseeuw and Van Zomeren, 1990). The leverage highlights the influence may have on the regression, based on its particular combination of x values (Hamilton, 2006, p. 204). Hence, unusual x values or uncommon combinations would result in an observation with high leverage (Hamilton, 2006; Rousseeuw and Van Zomeren, 1990). The observations omitted due to high residual and leverage values, as well as a graphical representation of leverage and residuals are shown in appendix 4.4.

One of the causes of endogeneity is the bias caused by the existence of omitted variables (Wooldridge, 2009).

4.6.2 Findings and discussion

Table 4.11 shows the different regression results. The first regression test represents the findings using the base model before winsorising the independent variables or using normal scores to the dependent variable. The second column represents the findings after winsorising the variables at a 1% level to account for outliers. The third column represents the findings using normal scores for the dependent variable as outlined in Cooke (1998). The fourth column shows the regression results after controlling for the effect of companies producing one report to the companies producing more than one report by adding a binary variable. Lastly, the fifth and sixth columns show the results after excluding influential observations and excluding financial companies respectively. In all regressions the legal origin and industry dummies were included.

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[130] Whereby, K is the number of predictors and n is the number of observations.

Table 4.11: Regression results[131]

Variable	Pred. Sign	Base model	Winsorised	Normal Scores	One report	Exc. Influential	Exc. Financial
Intercept		0.189	0.191	-2.101**	0.114	0.236	0.010
		(1.10)	(1.11)	(-2.22)	(0.62)	(1.46)	(0.05)
IRAGE	(+)	0.008	0.008	0.050	0.008	0.010* (1.78)	0.010
		(1.40)	(1.40)	(1.54)	(1.29)		(1.52)
GRIL	(+)	0.072***	0.075***	0.403***	0.071***	0.063***	0.076***
		(4.84)	(4.83)	(4.92)	(4.75)	(4.66)	(4.69)
ASSURED	(±)	0.043	0.042	0.191	0.039	0.068**	0.055
		(1.26)	(1.26)	(1.03)	(1.16)	(2.22)	(1.58)
BOARDSIZE	(+)	-0.002	-0.002	-0.008	-0.002	-0.002	0.001
		(-0.49)	(-0.48)	(-0.39)	(-0.59)	(-0.74)	(0.26)
INDEP	(+)	0.058	0.059	0.337	0.060	0.084	0.037
		(0.90)	(0.92)	(0.95)	(0.94)	(1.45)	(0.56)
FEMALE	(+)	-0.213	-0.211	-1.204	-0.219	-0.141	-0. 267*
		(-1.60)	(-1.59)	(-1.65)	(-1.66)	(-1.17)	(-1.87)
CSRCOMM	(+)	0 .044	0.043	0.225	0.043	0.039	0.001
		(1.56)	(1.56)	(1.47)	(1.55)	(1.54)	(0.01)
BOARDTIER	(?)	0 .073*	0.075**	0.401*	0.072*	0.066**	0.044
		(1.94)	(1.98)	(1.94)	(1.92)	(1.99)	(1.15)
SIZE	(+)	0 .010	0.010	0.060	0.012	0.008	0.018*
		(1.11)	(1.08)	(1.22)	(1.33)	(0.92)	(1.71)
PROFIT	(±)	0 .042	0.058	0.371	0.055	-0.009	0.027
		(0.68)	(0.89)	(1.03)	(0.83)	(-0.13)	(0.41)
LEVERAGE	(±)	-0.005	-0.005	-0.034	-0.005	-0.002	0.009
		(-0.59)	(-0.58)	(-0.71)	(-0.58)	(-0.21)	(0.68)
ONEREPORT	(+)				0.043		
					(1.28)		
Industry control		Included	Included	Included	Included	Included	Included
C. Goods	(±)	-0.069	-0.071	-0.399	-0.073	-0.061	-0.066
		(-1.13)	(-1.18)	(-1.16)	(-1.21)	(-1.12)	(-1.14)
C. Services	(±)	-0.025	-0.027	-0.233	-0.027	-0.026	-0.022
		(-0.45)	(-0.48)	(-0.72)	(-0.48)	(-0.50)	(-0.41)
Financials	(±)	-0.087*	-0.087*	-0.537**	-0.089*	-0.074*	N/A
		(-1.86)	(-1.87)	(-2.10)	(-1.90)	(-1.74)	
Health Care	(±)	-0.162**	-0.165**	-0.979**	-0.165**	-0.150**	-0.197**
		(-2.38)	(-2.42)	(-2.57)	(-2.43)	(-2.48)	(-2.51)
Industrials	(±)	-0.046	-0.048	-0.322	-0.043	-0.050	-0.066
		(-1.14)	(-1.18)	(-1.37)	(-1.07)	(-1.35)	(-1.66)
Oil and Gas	(±)	-0.055	-0.055	-0.501	-0.045	-0.044	-0.108
		(-0.80)	(-0.80)	(-1.30)	(-0.65)	(-0.74)	(-1.58)
Technology	(±)	0.021	0.023	0.110	0.014	0.022	0.022
		(0.27)	(0.30)	(0.26)	(0.19)	(0.33)	(0.31)
Telecomm.	(±)	-0.100	-0.104	-0.593	-0.108	-0.093	-0.126*
		(-1.47)	(-1.52)	(-1.56)	(-1.58)	(-1.49)	(-1.90)
Utilities	(±)	0.119	0.118	0.657	0.113	0.047	0.151
		(1.00)	(1.01)	(0.99)	(1.00)	(0.91)	(1.08)
Legal origin control		Included	Included	Included	Included	Included	Included
F-value		4.78***	4.81***	4.83***	4.71***	5.99***	5.08***
R^2		0.511	0.512	0.513	0.519	0.590	0.582
Adj. R^2		0.404	0.405	0.407	0.409	0.491	0.467

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[131] Regression results BEFORE excluding the observation with negative equity, and results excluding CG variables are provided in appendix 4.5.

Max VIF	2.54	2.52	2.52	2.52	2.52	2.44
No. of Observations	135	135	135	135	125	108

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

^Normal scores calculated based on Van der Waerden's Formula for all variables (dependent and independent)

See Table 4.1 for variable definitions

The direction of association between IR age (IRAGE) and SE scores (EMBED) was positive as proposed. However, the predictive power for the regressor variable (IRAGE) was not significantly determining the changes in the dependent variable EMBED. IRAGE was only marginally related to EMBED at 10% level when excluding influential observations. Therefore, the first hypothesis is rejected as there is no statistically meaningful association between IRAGE and SE scores.

Despite this fact, the graphical descriptive results for the SE mean scores by year reveals that to an extent companies that have adopted IR on an early stage has fairly higher SE scores to these adopting at a later stage. The differences between early and late adopters were supported in the bivariate t-test and Wilcoxon rank-sum test. Additionally, the bivariate association from the correlation matrix shows a positive association. Hence, bivariate analysis ignoring the effect of the other independent variables does show a difference between early and late IR adopters in SE scores.

The regression results suggest that early adopters do not significantly differ than late adopters in embedding sustainability. Therefore, results imply that late IR adopters in the sample did not decouple their reporting practices by producing integrated reports without showing their SE practices. Provided that IR is still in its limited diffusion stage (Haberberg et al., 2008), DiMaggio and Powell, (1991b) assert that corporations are more driven by a desire to improve their performance. Additionally, at this stage, corporations may learn by envisaging each other reporting practices (Lawrence et al., 2002). Thus, later adopters of IR (at this diffusion stage) may be driven by motives to better embed sustainability and are able to learn

from the early adopters reporting practices. The results indicate that decoupling may not be frequently used by corporations in the early stages of diffusion.

Although the result was not as predicted, it may indicate that IR and SE are still not sufficiently diffused (adopted). As Higgins et al. (2014) suggest, embedding sustainability may form naturally over time. Thus, decoupling practices may evolve on a later stage, when IR starts being adopted by companies for solely legitimacy purposes. It may be of interest to measure the SE in a larger time frame to explore if decoupling of practices will occur. This may be the case as the descriptive findings show a general trend for falling SE scores especially in the last two years in the sample (2009 and 2010).

As shown in Figure 2-4 in chapter 2 the number of integrated reporters increased at a high rate in years 2009 and 2010. This is combined by falling SE scores in these years. Hence, similar to Malmi (1999), this may suggests that the SE and more generally IR is moving from being an efficient corporate choice towards a more fashionable choice. The previous suggests that decoupling may become more frequently used by companies on a later stage of diffusion, due to the falling SE scores at the end of this early stage of diffusion. These results provide some preliminary responses to Boxenbaum and Jonsson (2008) on the matter of whether decoupling existence depend on the level of diffusion of practices within a field.

Level of application of GRI (GRIL) was significantly and positively related to SE scores in all the regression tests at a 1% level. The finding provides strong evidence to support hypothesis 2. In general terms, Frias-Aceituno et al. (2012) found that GRI application level is positively associated with the production of an integrated report. Kruskal-Wallis test (shown in Table 4.5 also provided support that GRI higher application levels were significantly different from these with lower levels with regard to the SE scores. Therefore,

companies with better GRI application levels appears to be more thoughtful about their sustainability practices as reflected by their more comprehensive SE disclosure.

An important issue that can have contributed to SE is the disclosures on management approach (DMA) over sustainability various issues. DMA is required for companies reporting under levels A and B. DMA assists the companies to report the context around the corporate sustainability actions and performance (GRI, 2013a). Additionally, it allows the companies to report on the management sustainability approach to many issues including products, energy, public policy, local community, environmental and societal impacts and corporate investment (ibid.). Since, DMA is not fully developed (GRI, 2006; GRI 2013a), it gives the company a room to think about their management SE approach and reflect on that in its reporting (Dumay et al., 2010; Guthrie and Farneti, 2008).

Companies reporting under application levels A and B have to cover the GRI indicators on stakeholder dialogue, which is not the case for application level C or the unidentified level (see appendix 3.1 on the comparison of the SE index and the GRI guidelines). Both corporate practices on stakeholder engagement as well as guidance on stakeholder engagement produced by organisations were criticised (see for instance: Owen et al., 2001- for corporate stakeholder engagement critique; Greenwood, 2007- for a summary of the different underlying business cases for embracing stakeholder engagement). However, the existence of stakeholder engagement in the corporate moral setting enhances its accountability (Broadbent et al., 1996; Greenwood, 2007; Owen et al., 2001; Cooper and Owen, 2007). Consequently, Roberts (1996; 2003) concludes that stakeholder engagement and dialogue can restore balance between the need to expand profit and the social and environmental consequences that needs to be taken into account before pursuing the profitability goals. Therefore, it can be understood that companies with no stakeholder discussions and dialogues on their agendas, may overweight their specific interests over the wider societal and environmental interests

(Roberts, 1996). Hence, stakeholder interests- for these companies- would not inform corporate decisions (Roberts, 1996; 2003). In this regard, stakeholder engagement would lead to more sustainability embedded decision making and reporting process, and may lead to building up the corporate social capital (Maak, 2007).

Results are also in line with Behnam and MacLean (2011) assertion that companies with low application level (C or unidentified level) may adhere to GRI due to the low costs of application; and their ability to cherry-pick the indicators they find easy to disclose (Guthrie and Farneti, 2008). Hence, decoupling can be more overt at the low application levels due to the corporate intrinsic benefits. The results also show that higher levels of application of GRI may induce organisational changes related to dealing with social, environmental and economic issues as reflected in their reporting, which provide evidence against Behnam and MacLean (2011) postulate that GRI is only a reporting template and no changes will occur from adopting it.

External assurance on integrated reports (ASSURED) is positively and significantly related to EMBED when excluding influential observations at 5%. Thus, some evidence is obtained to support hypothesis 3. The results are largely in agreement with Sierra-García et al. (2013), as they found a positive significant association between the production of an integrated report and having an assurance to the report.

Results provide weak evidence negating Perego and Kolk (2012) postulate that assurance is more or less a symbolic form of accountability. Additionally, results indicate that assurance was conducted by integrated reporters with more substantial SE. Hence, report assurance is not expected to be a window dressing practice, which is set to be an internal management practice as suggested by O'Dwyer and Owen (2005) and Ball et al. (2000). Inversely, the

results give some support to Viehöver et al. (2010) argument that assurance may bring in improvements over corporate reporting and internal information systems.

The BOARDSIZE is insignificantly related to EMBED in all the regression results. Thus, Hypothesis 4 is not supported. The very low coefficient for the BOARDSIZE may be caused by the scaling of the variable measurement to other variables in the regression (i.e. most of the other variables either binary or ratios whereby the board size takes higher values). Results are not in agreement with Frias-Aceituno et al. (2013b) who found a positive relationship between board size and the production of an integrated report. Jizi et al. (2013) also found a positive association between board size and CSR disclosures in the US commercial banking industry. On the contrary, Michelon and Parbonetti (2012) found no association between board size and sustainability disclosure. Results are also in agreement with Post et al. (2011), where an insignificant relationship was found between board size and environmental disclosure and performance.

It can be argued that as boards increase in size they may be less able to function properly due to poor communication and lengthened processes to make decisions (John and Senbet, 1998; Goodstein et al., 1994). Thus, it may hinder the incorporation of social and environmental aspects into the corporation (Olson, 1982). As a result, the SE within corporate decision making and reporting will be adversely affected.

It was expected that as the proportion of independent directors on a board (INDEP) increase SE will increase. However, the empirical findings show a positive but insignificant relationship in all the regression tests. Consequently, hypothesis 5 is not supported. This finding is in line with Frias-Aceituno et al. (2013b) which also found a positive but insignificant relationship between the production of integrated reports and the proportion of non-executive directors on the board. Michelon and Parbonetti (2012) also found an

insignificant association between the proportion of independent directors and CSR disclosure. The results are not in line with Jizi et al. (2013), Cheng and Courtenay (2006) and Post et al. (2011) finding a positive significant association between INDEP and CSR and voluntary disclosures.

Mace (1971) postulates that non-executives view themselves as advisors and not in a decision making role. Thus, they may present recommendations on establishing a CSR committee or application of particular standards (Post et al., 2011). The outsider/insider proxy to capture board level of independence also has its drawbacks. This dichotomy does not pick up the various roles of independent directors as well as the tensions between independent, executive and other non-executive members in formulating corporate disclosure (Michelon and Parbonetti, 2012; Roberts et al., 2005). However, the proxy used in the study overcomes some of these drawbacks by only including independent directors. Roberts et al. (2005) reported that the interactions between board executives and non-executives may either strengthen or deteriorates the board relationships and may result in withholding information. Hence, these unobserved interactions may add to the complexity of the relationship.

As evidenced in several prior studies, females seem to some extent be more concerned about corporate social and environmental issues to males (Kraft and Singhapakdi, 1995; Burton and Hegarty, 1999). However, regression results show that the percentage of female directors on the board "FEMALE" is not associated with the SE scores and hence hypothesis 6 is rejected. In fact, FEMALE is negatively associated with EMBED at 10% level when excluding financial firms.

The results are different to that of Frias-Aceituno et al. (2013b), where a significant positive relation was found between the proportion of female directors and the production of an integrated report. The results are also not in line with Wang and Coffey (1992) who found a

positive association between higher proportion of female directors and corporate charitable contributions. Bear et al. (2010) also found a positive association between proportion of female directors and corporate KLD rating. Instead, the finding is in line with Post et al. (2011), where they found no association between the existence of more than two female directors and the environmental disclosure.

The contradictory results with Frias-Aceituno et al. (2013b) can extrapolate that companies integrating their reports have higher female directorship. However, such integration may merely be in a form of combination of disclosures rather than bringing enhancements to SE. It is observed that about 75% of the boards had 2 female members or less. Hence, such low female representation may provide a justification for the insignificant association as Post et al. (2011) suggest that female effect would be minimal unless a critical mass of 3 or more women represented on the board. Another justification is that companies may enhance their reputation and show board diversification by having a female member on the board (Brammer et al., 2009).

CSR committee existence (CSRCOMM) is positive but insignificantly associated with EMBED in most regressions. CSRCOMM, however, was only marginally significant at 10% level in some of the regression sensitivity tests conducted below. Therefore, there is very limited evidence in favour of a positive relation between CSRCOMM and EMBED and hypothesis 7 is not supported.

The result is not in line with Mallin et al. (2013) finding a positive relation between CSR committee existence and CSR performance. The result, however, is in line with Michelon and Parbonetti (2012) finding no association between CSR committee and the extent of CSR disclosures. While, Michelon and Parbonetti (2012) fragmented CSR disclosures, they found a weak association with social disclosures (only at a 10% level).

Linking back to the cross tabulation between CSR committee and EMBED, the median scores for integrated reporters with CSR Committees were higher to these without such committee only at a 5% level. Thus, CSR committees may be more involved with reviewing and implementing the corporate CSR strategy (Post et al., 2002; Spitzeck, 2009) and undertaking the necessary stakeholder engagements to ensure stakeholder expectations are addressed (Grayson and Hodges, 2004). However, the existence of CSR committees does not provide support to Post et al. (2002) argument that CSR committees are effectively engaged in the reporting of social and environmental disclosures.

BOARDTIER was significantly and positively associated with SE scores across all regressions with the exception of the regression test after excluding financials, providing considerable evidence in support of hypothesis 8. The bivariate analysis using Wilcoxon rank-sum test on Table 4.6 and the correlation matrix on Table 4.10 showed a significant difference between unitary and dual boards in the SE scores in favour of dual boards.

Linking to findings of SE by country on Figure 3-2, it shows that countries with two-tier board (or allow for two-tier boards) including Germany, the Netherlands and Portugal (Krivogorsky, 2006), had high SE scores. It was argued that the two-tier boards have a greater ability to attract more stakeholder groups into its supervisory board than that of unitary boards (Douma, 1997; Jungmann, 2006). For instance, supervisory board may include union officials, professors, lawyers and chairmen of other companies (Douma, 1997). Supervisory board advice the managing board and ratifies the decisions to be implemented (Aste, 1999; Maassen and Van Den Bosch, 1999). Furthermore, Rose (2005) explains that such "pure" two-tier boards may lead the corporate managers and the supervisory board to obstruct a decision from the CEO if it was deemed to be in self-interest. Hence, the existence of pressures from more diversified stakeholder groups in the supervisory board may lead to less opportunistic actions and higher SE practices.

Firm characteristics do not seem to explain the variation in EMBED. Although the coefficient for SIZE was positive, it was insignificantly associated with EMBED except for the regression excluding financials at a 10% level. The previous does not provide sufficient evidence that larger size is related to EMBED. The coefficient of the SIZE variable was very low, suggesting that it may be caused by the scaling of the variable.[132] LEVERAGE and PROFIT were insignificantly related to EMBED in all regressions. These findings do not provide evidence to Westphal and Zajac (1998) postulate that decoupling may provide financial benefits to companies. Albeit, the relationship between firm characteristics and EMBED would be supposed to be negative, which is not the case here. Hence, the results indicate that firms with lower SE scores (i.e. higher decoupling) did not envisage financial benefits.

Regression results show that financial and health care industries had significantly lower SE scores to basic materials (the omitted dummy). These results can suggest that heavily polluting industries generally provided more substantive SE than less polluting and service industries. The result has to be interpreted with caution due to the limited number of observations within each industry group. Future studies may revisit this association using a larger sample of recent integrated reports to examine the statistical differences in indicator coverage between industries.

The binary variable "ONEREPORT" was positive, but insignificantly related to EMBED. Thus, this result suggests that companies producing a one report do not significantly differ to the companies producing more than one report in terms of the SE. The bivariate analysis between the one report dummy and SE scores (Table 4.9) also showed that there was hardly any difference between integrated reporters producing a "One report" and these producing

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[132] As noted earlier the natural log of size was used, which reduces the large decimal places of the values of total assets per observation and mitigates the scaling issue.

more than one report with relation to the SE scores. Thus, EMBED is not significantly enhanced for integrated reporters with one report. Consequently, it appears that the decision to produce ONEREPORT is not associated with the decision for SE.

4.6.3 Sensitivity tests

All other normal score formulas (Rankit, Tukey and Blom) to calculate SE normal scores were used as in Cooke (1998). The results (untabulated) were similar to that using Van der Waerden's Formula.[133] Additionally, regressions for the log transformation of SE and the rank transformation for both the base model and the model excluding influentials are conducted in Table 4.12. Rank transformation was discussed in Cooke (1998) as another alternative to normal scores.[134] Results are not dissimilar to the corresponding tests in Table 4.11. GRIL remained positive and significant at 1% level in all regressions. BOARDTIER significant at 10% and 5% level in the log-Embed and rank-Embed respectively, and ASSURED significant under the model excluding influentials. IRAGE was significant at 10% in the model using rank-EMBED and excluding influentials but not in the other regressions in Table 4.12.

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[133] The normal score values and ranks as outlined in Cooke (1998) were computed using the SPSS software package. Normal score values can be computed through, Transform< Rank Cases < Rank Types < Normal Scores; then choose any of the formulas required.

[134] The ranks can be computed on SPSS through, Transform< Rank Cases< Rank types< Rank. However, the regressions were then undertaken at the STATA.

Table 4.12: Regression results using Log and Rank transformations to EMBED (with and without excluding influential observations)

Variable	Pred. Sign	Log-EMBED	Exc. Inf.	Rank-EMBED	Exc. Inf.
Intercept		-1.403***	-1.305***	-0.619	2.987
		(-3.99)	(-4.10)	(-0.02)	(0.08)
IRAGE	(+)	0.008	0.013	1.964	2.210*
		(0.62)	(1.16)	(1.50)	(1.80)
GRIL	(+)	0.153***	0.141***	15.285***	13.682***
		(4.98)	(5.11)	(4.63)	(4.42)
ASSURED	(±)	0.087	0.123*	10.946	16.085**
		(1.19)	(1.91)	(1.47)	(2.33)
BOARDSIZE	(+)	-0.007	-0.008	-0.527	-0.640
		(-0.81)	(-1.19)	(-0.65)	(-0.84)
INDEP	(+)	0.103	0.194	12.840	18.728
		(0.74)	(1.57)	(0.90)	(1.43)
FEMALE	(+)	-0.326	-0.191	-38.380	-24.718
		(-1.29)	(-0.84)	(-1.31)	(-0.91)
CSRCOMM	(+)	0 .080	0.101*	10.312	8.484
		(1.37)	(1.92)	(1.67)	(1.45)
BOARDTIER	(?)	0 .154*	0.138*	17.800**	16.406**
		(1.85)	(1.91)	(2.14)	(2.16)
SIZE	(+)	0 .021	0.016	1.741	1.485
		(1.13)	(0.94)	(0.89)	(0.79)
PROFIT	(±)	0 .083	0.130	5.070	-1.091
		(0.60)	(0.80)	(0.37)	(-0.06)
LEVERAGE	(±)	-0.018	-0.012	-1.068	-0.295
		(-1.04)	(-0.74)	(-0.57)	(-0.15)
Industry control		Included	Included	Included	Included
C. Goods	(±)	-0.130	-0.135	-18.148	-15.517
		(-0.96)	(-1.13)	(-1.36)	(-1.26)
C. Services	(±)	-0.024	-0.050	-6.786	-5.427
		(-0.19)	(-0.44)	(-0.54)	(-0.47)
Financials	(±)	-0.183*	-0.161*	-18.172*	-14.813
		(-1.74)	(-1.71)	(-1.76)	(-1.53)
Health Care	(±)	-0.396**	-0.374**	-31.615**	-28.779**
		(-2.58)	(-2.35)	(-2.10)	(-2.10)
Industrials	(±)	-0.080	-0.094	-10.515	-10.368
		(-0.88)	(-1.18)	(-1.17)	(-1.25)
Oil and Gas	(±)	-0.104	-0.079	-10.743	-8.887
		(-0.67)	(-0.60)	(-0.71)	(-0.65)
Technology	(±)	0.103	0.090	2.079	3.787
		(0.59)	(0.61)	(0.12)	(0.25)
Telecomm.	(±)	-0.214	-0.207	-19.676	-17.794
		(-1.39)	(-1.51)	(-1.30)	(-1.25)
Utilities	(±)	0.298	0.117	23.379	9.029
		(0.66)	(0.71)	(1.05)	(0.51)
Legal origin control		Included	Included	Included	Included
F-value		4.81***	5.32***	4.81***	5.85***
R^2		0.407	0. 492	0.512	0.584
Adj. R^2		0.343	0. 433	0.406	0.484
Max VIF		1.80	1.80	2.54	2.49
No. of Observations		135	125	135	125

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.
See Table 4.1 for variable definitions

Regressions on Table 4.13 are for both cut-off methods for early and late adopters, using the base model and the model excluding influentials. Results are not dissimilar to the corresponding models using the IRAGE in Table 4.11. Hence, the IRAGE remained positive but insignificantly in all regressions, except in the regression excluding influential observations using observations as cut-off it was significant at 10%. BOARD and GRIL remained significant at 5% (10% using observation cut-off) and 1% respectively under the alternative measures used. As in Table 4.11, ASSURED is significant at 5% when excluding influentials, but insignificant under the other models. CSRCOMM appeared marginally significant at 10% when using cut-off by year, but insignificant under observation cut-off.

Table 4.13: Regression results using alternative measures for early and late adopters

Variable	Pred. Sign	Cut-off by observation "IRAGE1^"	Exc. Inf.	Cut-off by year "IRAGE2°"	Exc. Inf.
Intercept		0.187	0 .392***	0.203	0.396***
		(1.09)	(6.58)	(1.18)	(6.58)
IRAGE	(+)	0.033	0 .049*	0.060	0.046
		(1.14)	(1.89)	(1.51)	(1.25)
GRIL	(+)	0.074***	0 .064***	0.070***	0.616***
		(4.96)	(4.70)	(4.62)	(4.49)
ASSURED	(±)	0.042	0 .070**	0.047	0.071**
		(1.24)	(2.30)	(1.39)	(2.30)
BOARDSIZE	(+)	-0.002	-0.002	-0.001	-0.001
		(-0.63)	(-0.65)	(-0.10)	(-0.44)
INDEP	(+)	0.056	0.085	0.063	0.082
		(0.87)	(1.48)	(0.99)	(1.42)
FEMALE	(+)	-0.202	-0.102	-0.210	-0.139
		(-1.51)	(-0.87)	(-1.60)	(-1.18)
CSRCOMM	(+)	0 .042	0.036	0 .048*	0.043*
		(1.50)	(1.39)	(1.70)	(1.68)
BOARDTIER	(?)	0 .072*	0.068**	0 .076**	0.068**
		(1.90)	(2.05)	(2.01)	(2.04)
SIZE	(+)	0 .010	0.000	0 .001	0.000
		(1.18)	(0.96)	(0.87)	(1.01)
PROFIT	(±)	0 .040	0.001	0 .050	0.004
		(0.65)	(0.01)	(0.81)	(0.06)
LEVERAGE	(±)	-0.004	-0.001	-0.007	-0.003
		(-0.49)	(-0.11)	(-0.80)	(-0.36)
Industry control		Included	Included	Included	Included
C. Goods	(±)	-0.064	-0.052	-0.069	-0.061
		(-1.05)	(-0.96)	(-1.14)	(-1.11)
C. Services	(±)	-0.017	-0.015	-0.025	-0.023
		(-0.31)	(-0.29)	(-0.43)	(-0.44)
Financials	(±)	-0.084*	-0.068	-0.084*	-0.073*
		(-1.81)	(-1.58)	(-1.79)	(-1.69)

Health Care	(±)	-0.159**	-0.152**	-0.162**	-0.145
		(-2.33)	(-2.52)	(-2.38)	(-2.38)**
Industrials	(±)	-0.046	-0.050	-0.044	-0.046
		(-1.11)	(-1.37)	(-1.08)	(-1.24)
Oil and Gas	(±)	-0.065	-0.057	-0.048	-0.041
		(-0.94)	(-0.96)	(-0.69)	(-0.67)
Technology	(±)	0.020	0.023	0.018	0.019
		(0.26)	(0.35)	(0.23)	(0.29)
Telecomm.	(±)	-0.087	-0.077	-0.106	-0.090
		(-1.29)	(-1.26)	(-1.54)	(-1.41)
Utilities	(±)	0.119	0.049	0.112	0.040
		(0.96)	(0.95)	(1.18)	(0.76)
Legal origin control		Included	Included	Included	Included
F-value		4.73***	6.03***	4.76***	5.83***
R^2		0.508	0.591	0.509	0.583
Adj. R^2		0.400	0.493	0.402	0.483
Max VIF		2.55	2.60	2.57	2.58
No. of Observations		135	125	135	125

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.
^ Companies until 2008 are early adopters, beyond that they are late adopters (using the 40% to 60% of the sample cut-point)
° Companies until 2005 are early adopters, from 2006 till 2010 are considered late adopters (using the mean of years of adoption as a cut-off measure).
See Table 4.1 for variable definitions

Endogeneity may be caused by a loop of causality (Wooldridge, 2009). Legendre and Coderre (2013) emphasised that GRI application level is explained by corporate size, profitability and industry. Hence, similar to other accounting studies (see: Ratzinger-Sakel, 2013; Rodrigue et al., 2013) the study tests for endogeneity. A Durbin–Wu–Hausman test which uses a two-stage least-squares (2SLS) model is utilised.[135] Instrumental variables are commonly introduced to test for endogeneity (Larcker and Rusticus, 2010). Adding a suitable instrumental variable that satisfy all required characteristics is very hard, which is why many studies have mistakenly introduced weak instrumental variables (Larcker and Rusticus, 2010). As an alternative implementation, Davidson and MacKinnon (1993) suggested the use of the residuals of each endogenous variable as a surrogate to a suitable instrumental variable. The residuals can be then included as an instrumental variable in the main model to test for endogeneity. The process for these two equations and the results are shown in appendix 4.6.

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[135] Peel (2014) reports that the 2SLS model is to be used when both the outcome variable and the endogenous (selection) variable are continuous.

The test shows that the v2hat (i.e. the error term from GRI application level) is insignificant p-value= 0.649. Thus, the test indicates that there is no endogeneity issue in the model.

4.7 Conclusions

The purpose of the study was to examine the existence of decoupling in the integrated reports of early versus late adopters. Additionally, as CG is conceived to be an essential pillar for corporate sustainable CSR (Jamali et al., 2008; Aldama et al., 2009), the study also explores the CG mechanisms effects on the SE scores.

The study utilised the SE index scores computed for the 136 integrated reports published in 2010 as the dependent variable. The scores for the SE index were used to indicate for the level of organisational sustainability involvement and responsibility. The regressor variables were IR age as a proxy for early vs late adoption (i.e. early adopters less likely to decouple than later adopters), GRI application level, assurance, CG mechanisms and control for corporate characteristics, industry and legal origin.

Regression results show no support for the existence of decoupling practices by later adopters in embedding sustainability in the integrated reports. Therefore, although IR adoption was mainly driven by mimetic factors, findings indicate that the new companies providing integrated reports are not decoupling SE in their reporting practices. The descriptive results, however, showed the existence of large discrepancies in SE scores within the sample observations per year (Table 4.3). The study results are useful to enhance the understanding about the state of IR at its early emerging stages. However, these findings promotes the initiation of more in-depth case study research to help understand the motives of the companies in integrating their reports, their organisational culture and how that is reflected upon SE.

CG mechanisms did not explain the variation in SE scores in the integrated reports. However, results show evidence that integrated reporters with dual boards had better SE disclosures in their integrated reports as compared to companies with unitary boards. This may propose the need to prioritise sustainability aspects into the channels of board functions in any reforms undertaken to enhance the unitary board effectiveness.

Results revealed that a better level of application of the GRI is positively associated with the SE in integrated reports. Thus, integrated reporters with low GRI application levels were more likely to use decoupling practices as realised from having lower SE scores. This finding is in line with the assertion of Behnam and MacLean (2011) that low level GRI reporting is motivated by the low application cost of selected indicators. Results also have practical implications. Although G4 now requires the organisations to report on core indicators or comprehensive indicators which can be an improvement over the G3.1 giving room for picking the indicators, again G4 gives the organisations the ability to include some standard indicators without the necessity of reporting on core or comprehensive indicators. Therefore, I suggest abolishing such low reporting level especially among listed and large corporations to constrict management abilities to decouple the reporting practices.

Results show weak evidence that integrated reporters having external assurance for their reports were less likely to engage in decoupling practices. External assurance may yield considerable costs for the company (Behnam and MacLean, 2011). Additionally, SE in integrated reports was not a result of corporate higher profitability. Taken together, it is to an extent that integrated reporters used external assurance, not as a form of symbolic accountability as shown by Perego and Kolk (2012) in corporate sustainability reports, but rather to infer about the higher SE in their management and reporting. However, as external assurance practices currently stand, it appears to be heterogeneous with the existence of various assurance levels and the engagement of various groups to produce the assurance.

Therefore, eliminating such controversies by better assurance standardisation would help provide a more objective depiction on corporate reporting.

4.8 Limitations and further development

To elaborate on a limitation from the previous chapter, it would be beneficial to build the SE index using discrete categorisation that can further more insights in this area. The index may be built by relocating the indicators under distinctive categories (as environmental, social, strategic, legal, ethical… etc.) and to resolve issues may arise from indicators that can feed into more than one of these categories.

Due to the limited number of observations the study was only able to explore the existence of decoupling between early and late adopters. It would be beneficial to have explored the decoupling practices within these groups and to have shown whether integrated reporters in each group are different in their SE scores.

It will be interesting to revisit the study in later stages of IR development, which may reveal new evidence concerning decoupling. Additionally, more analysis of board characteristics, as (for example) the number of community influential members, board age, female directors' role and CSR committee meetings, would enrich future studies. It would be interesting to introduce outside directors' tenure as a variable as it was recently found to be positively related to board's monitoring and advising functions (Kim et al., 2014). Although the study captures SE in integrated reports of all companies identified with English reports in 2010, it would be useful to use larger samples/ periods in future studies. Hence, future studies may try to apply automated/computerised means for collecting larger data.

The study only focused on the early and late adopters and board power dynamics as predictors to decoupling. Although the diagnostics tests suggested the non-existence of omitted variable bias, there may be other predictors to decoupling. These include extrinsic

variables as influential shareholders/stakeholders and also the role of corporate image as a strategic corporate determinant for decoupling. Hence, future studies may explore the effects of these variables on corporate decoupling acts. Future research may also include the negative media attentions as an explanatory variable in the model.

Comparative studies using a matched pair of non-integrated reporters to integrated reporters may also reveal interesting insights into decoupling. It may show whether companies integrating their reports are performing better/worse to non-integrated reporters. Additionally, by using a similar approach to Aravind and Christmann (2011), future research can divide companies in both groups into high and low SE reporters and compare the differences between both groups.

Findings of this study open up for more case study research to further understand the motives and corporate reasons and conditions for embedding sustainability not only internally, but on the decisions made to report on that externally through their annual reporting.

Chapter 5 Conclusions and future directions

5.1 Introduction

This thesis conveys three studies related to IR adoption and SE using an institutional theory lens. The research aims to provide a better understanding on institutional factors influencing IR adoption and expand the understanding of the notion of decoupling by applying and testing its determinants within the context of IR. The thesis also develops a measure to explore the reporting on SE in integrated reports. Finally, the study tests empirically the link between corporate governance mechanisms and SE in the integrated reports.

IR is portrayed to be a replacement to the typical model of standalone sustainability and financial reporting (Burritt, 2012; De Villiers et al., 2014; Jones and Slack, 2012). The development of IR, especially after the formation of the IIRC, has attracted increasing attention (De Villiers et al., 2014; Humphrey et al., 2014). IR, as acclaimed by its promoters, is described as a holistic approach to reporting on corporate financial and non-financial aspects for the use of investors and all interesting stakeholders, in which linkages between strategy, governance, risk, financial and non-financial performance is provided with reflections among short and long-term performance metrics (FEE, 2011b, p. 1; IIRC, 2013b, p. 7).

Conversely, IIRC's development of IR was criticised. It is argued that IIRC is placing more emphasis on the financial "capitalist" ideology (Thomson, 2014; Flower, 2014). Thus, profit making corporations may sustain investor wealth through the use of IR as a better risk management reporting framework (Thomson, 2014). It is argued that IR practices proclaimed by the IIRC would have little if any change on corporate behaviour with regard to sustainability (Flower, 2014; Thomson, 2014), especially in the short run (Brown and Dillard, 2014). Hence, IR may be seen as an incremental phase and not a revolutionary transformation

of corporate financial and sustainability reporting as claimed by the IIRC (Stubbs and Higgins, 2014).

As IR has been a corporate innovation that has existed prior to the IIRC, there exist different versions of IR to that recently developed by the IIRC (Stubbs and Higgins, 2014). The academic literature has mainly focused on IIRC's case and its attempt to develop IR (e.g., Adams, 2014; Flower, 2014; Brown and Dillard, 2014), leaving the period prior to IIRC formation largely underresearched. The institutional environment and reporting practices before the IIRC formation is of importance to be studied, as the IIRC is currently building its own coalition of representatives from NGOs, civil society, accounting bodies, regulatory and standard setters with influential political and economic capitals (Humphrey et al., 2014; Flower, 2014). Therefore, the institutional context of IR is wider than the self-contained context that IIRC is developing in its promotion of IR. The nature of IR practices has been, and will continue, to be shaped by its institutional context (Humphrey et al., 2014). Thus, studying IR practices has to be linked to the institutional environment in order to understand patterns or changes in practice (Humphrey et al., 2014; Higgins et al., 2014).

The thesis builds on the extant body of literature, both on a conceptual and empirical basis, on the institutionalisation of CSR practices to explore institutional isomorphism in IR development. The thesis also applies the notion of decoupling and tests its relation to isomorphism in the IR case. The study develops and applies an index to test SE as it is a cornerstone to producing a better integrated report (A4S, 2007; Solomon and Maroun, 2012). This chapter offers a summary of the empirical studies and their findings in section 5.2. This is followed by the study contributions and implications presented in section 5.3. Finally, study limitations and suggestions for future research are provided in section 5.4.

5.2 Summary of the empirical chapters and their findings

This section provides an overall summary for each empirical study and presents its main findings.

5.2.1 Chapter 2: Determinants of adoption of IR: an exploration of institutional factors

The first study addresses the first two objectives for this thesis, which were to provide a portrayal for the IR adoption and, secondly, to test empirically the institutional factors at meso and macro levels affecting IR adoption. In order to fulfil the first study objective the study used these companies which self-declared to GRI that they have produced an integrated report in 2010 based on the GRI report list. The companies were subsequently approached to state the year they have produced their first integrated report. By so doing, the study was able to provide new insights into when IR was introduced within corporate reporting practices and provide a mapping for the development of these practices since inception until 2010.

In order to address the second objective, chapter 2 used a sample comprised of the GRI report list 2010 as a starting point. Data were collected for these companies from 2002 till 2010 and the final sample was included 10,337 observations from which integrated reporters represented on average 4%. The study utilised a logit regression model for the panel data to test for the effects of institutional factors. The study also provided several sensitivity checks using probit regression, omitting observations of non-respondents, testing for endogeneity and discrete hazard logit model, in order to ensure that results are robust.

The graphical representation for IR emergence showed that integrated reports were being prepared by companies in all continents in 2010.[136] The practices, however, were firstly embraced by European and South American companies in its first two years of emergence in 2001-2002. Recent years, however, show a domination of European followed by South

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[136] See Section 2.7 Graphical portrayal of IR

African integrated reporters. Notably, the UK and the US are among the countries where integrated reports emerged recently. The early emergence of IR in Europe and South America is conflicting to the recent IR development which is led by the UK where the IIRC is headquartered (Humphrey et al., 2014) and South Africa through mandating IR for listed companies (Cheng et al., 2014). There is also a move towards the production of more than one report (i.e. a declared integrated reports and other corporate annual documentations), which was particularly evident in 2009-2010.

Panel data logit regression results revealed that mimetic and normative factors drove IR adoption, while results provided limited support for the effect of regulative factors on IR adoption. The distinction between the levels of analysis in this study was particularly relevant as only normative factors on a meso (organisational field) level were significant in relation to IR adoption. Accordingly, such result provides empirical support for the postulation that different levels of institutional pressures may not have equal effects (Jones 1999; Campbell, 2007). All these results have practical and policy implications that will be highlighted in the section to follow.

The significant relation between mimetic isomorphism and IR adoption suggests that rival practices are screened and modelled, which is in line with institutional theory propositions (Scott, 2008; Jennings and Zanderbergen, 1995). However, such reporting practices were in need to be explored as addressed in chapter 3. The significant relation between DJSI inclusion and GRI adoption (as normative drivers on a meso level) and IR adoption indicate that business associations set normative institutional environment that aid in facilitating responsible reporting behaviour (Galaskiewicz, 1991).

The study also controlled for firm level and country level characteristics. Interestingly, it was found that IR adoption is negative associated with size. This may suggest that at the voluntary stage of IR adoption in the period studied, smaller listed companies were more likely to

publish integrated reports than large companies. This finding can be related to the complexity and dispersed operations of large firms and the motive of smaller listed companies to apply a differentiation strategy.

Sensitivity and endogeneity checks were conducted to ensure the results are robust. When using a probit model, a model excluding observations for non-respondents and a discrete hazard logit model, the results were identical to these presented in the main findings. Additionally, the study tested for endogeneity to check for simultaneity between GRI adoption and DJSI inclusion in the model. Results using a bivariate probit model suggest the non-existence of endogeneity issues in the model which enhances the robustness of the study findings.

5.2.2 Chapter 3: Sustainability embeddedness in the integrated reports: index development and corporate reporting

Chapter 3 addresses the third and fourth objectives for this thesis. The third objective was to develop a SE index to capture SE in corporate reports and situate the SE index to *de facto* sustainability reporting guidelines. The fourth objective was to provide a depiction for SE reporting practices in integrated reports.

The SE index developed in chapter 3 drew especially from three documents from A4S, CERES and IFAC which focused on SE. Moreover, the index reflects upon the limited literature on SE. The index consisted of 34 indicators from 10 categories covering various SE aspects. The study extracted from GRI guidelines G3.1 and G4 the indicators that were tangential to the SE indicators to draw a comparison between them.

Comparison of SE index to G3.1 and G4 showed that there were similarities, differences and incomparable indicators to the SE index indicators. Additionally, considerable improvement on G4 as compared to G3.1 was observed. These improvements were chiefly related to CEO

engagement and employee involvement in sustainability issues, and product and supplier sustainability standards. GRI guidelines, however, did not make references to various aspects on SE index, such as clarifying the terminologies used about sustainability, management commitment to sustainability issues and showcasing of good sustainability practices. Additionally, GRI overlooked including indicators that may help integrating financial and non-financial aspects as linking sustainability to business case, connecting sustainability performance to financial indicators and including sustainability as part of staff promotion.

Results of the SE index coding for the 136 integrated reports in 2010 shows that on average the integrated reporters scored 54.38% of the indicators. Hence, this suggests that integrated reporters will need to progress further to respond to deficiencies in their reporting. Additionally, results show that companies varied widely with regard to SE coverage in their integrated reports. The highest reporters covered 88.24% of the index, whereas, in a case, a company poorly covered only 11.76% of the index.

The descriptive statistics by industry and country demonstrated that there were differences between industries and same to countries. While some industries/countries scored higher than the average 54.38%, others exhibited very low scores. Remarkably, there were differences within industries and countries. Hence, not all integrated reporters in an industry with higher SE coverage scored highly, and vice versa. Such descriptive results indicate the existence of low (decoupled) as well as substantial SE reporting within peers and companies in the same country. However, such indicative cannot be tested empirically due to the limited number of observations in each group. Additionally, these indications do not hold for all industries/countries, as in some cases integrated reporters had similar SE scores within countries and industry.

Integrated reporters exhibited low coverage for some SE indicators. A quarter of them provided a definition to the sustainability and CSR terms used, provided sustainability targets

by departments and subsidiaries, had CEO's engagement on sustainability aspects and included sustainability as part of remuneration. Surprisingly, sustainability was almost uncovered as part of employee promoting by integrated reporters.

Concentration on financial aspects still dominates IR practices. Findings reveal that financial matters are the main reason for establishing a business case of sustainability. Additionally, although 62% of integrated reporters formed quantitative sustainability targets, only 27% used sustainability targets as part their employee remuneration and almost none include sustainability as part of appraisal and promoting of employees.

5.2.3 Chapter 4: Corporate decoupling, governance and sustainability embeddedness in integrated reports of early and late adopters.

Chapter 4 addresses objectives 5 and 6 for this thesis. Objective 5 was to explore the notion of decoupling between early and late integrated reporters. The study used SE index scores to gauge the integrated reporters' disclosures. Based on a decoupling lens, the study posits that early adopters will have higher SE coverage to late adopters (i.e. early adopters would have less decoupled practices to late adopters). GRI application level and assurance were also suggested to be positively related to SE. Secondly, objective 6 was to examine the effect of corporate governance mechanisms on SE. The study builds on the sample used in chapter 3, which includes the integrated reports of 2010 for all reporters (early and late adopters). Additionally, multiple OLS regression was utilised along with various sensitivity tests and Durbin–Wu–Hausman endogeneity check to ensure that the results are robust.

Regression results, however, show limited support to the postulate that late adopters of IR had low SE (i.e. high decoupled practices) to early adopters. However, some evidence in favour of early adopters was evidenced in the bivariate analysis and the histogram representation. Additionally, the histogram displayed that early adopters had relatively higher SE scores to these of late adopters. This suggests that albeit the limited evidence from

regression that early adopters have higher SE scores to later adopters, the bivariate and graphical analysis suggests that there is a decline in SE scores overtime. Hence, it may suggest a move towards a more fashionable practice among later adopters more to being an efficient corporate choice.

Integrated reporters were moving towards producing more than one report in 2009-2010. Additionally, integrated reporters producing their first integrated report in recent years had lower SE scores. Taken together, this implies that IR is moving towards a fashion trend, whereby companies are producing integrated reports to show alignment to the new reporting practices.

The study included board size, independence, female directorship, CSR committee existence and board tier to test for the corporate governance effects on SE. The findings offer no statistically significant evidence to suggest that board size, independence, female directorship, CSR committee existence are related to SE. Conversely, results indicate that corporations with a two-tier board exhibited higher SE scores to that of companies with a unitary board. The results favour the existence of a supervisory board as it allows for including wider groups of stakeholders (Douma, 1997 Jungmann, 2006) that may instil sustainability related motives, and deter opportunistic actions (Rose, 2005).

GRI application level was found to be positively related to SE. This result suggests that SE is a factor of the level of GRI application. It is implied that low level GRI reporters would cherry-pick the indicators they deem easy to disclose (Guthrie and Farneti, 2008) and has low cost for application (Behnam and MacLean 2011). Therefore, they are exposed to limited sustainability aspects and may not be deeply rooted towards embedding sustainability. Conversely, companies with higher application levels would cover more sustainability metrics and have to show their stakeholder engagement and their management approach to various sustainability aspects (GRI, 2006). Hence, it can be expected that companies which

embrace higher application of GRI, would involve a positive change in their approach towards sustainability. Some limited evidence on a positive association between report assurance and SE was found, suggesting that assurance may bring improvements in corporate reporting (Viehöver et al., 2010).

To ensure the results are robust, regressions using various normal scores, ranking and natural logarithm for SE were conducted as suggested by Cooke (1998). The study also used different cut-off points to separate early and late adopters into distinct groups as with Delmas and Montes-Sancho (2011) and Mahajan et al. (2000). As a result, regression tests were conducted for using both observation and year cut-off points for early and late adopters. Results of the sensitivity checks matched the main regression results. Endogeneity was tested due to the potential issues that may arise from the loop of causality between GRI application level and firm characteristics as suggested in Legendre and Coderre (2013). Findings of the Durbin–Wu–Hausman test for endogeneity revealed that there were no endogeneity concerns in the model.

Overall, findings in chapter 2 show that mimetic isomorphism explains IR adoption. However, while exploring corporate SE reporting for early and late adopters, the results in chapter 4 shows limited support that SE reporting of early adopters differed than late adopters. Taken together, this provides support that IR is in its early stages of diffusion. Hence, corporations in this stage would map and learn from the practices of one another (Lawrence et al., 2002).

Additionally, firm characteristics (profitability and leverage) seemed not to affect IR adoption and SE practices. Nonetheless, size was negatively related to IR adoption, suggesting that integrated reporters tended to be smaller than non-integrated reporters in the GRI report list. Size, however, was insignificantly related to SE scores, while there was a slight tendency that larger integrated reporters appeared to have better SE.

Corporate profitability does not seem to drive IR adoption and is not a factor to explain SE. Additionally, it was also found that few companies link sustainability aspects to staff remuneration or connect it to appraisal and promotion. Alternatively, integrated reporters covered various other indicators of SE highly. These results collectively may suggest that companies embed sustainability into some, but not all, of their business activities, while conducting business as usual in other activities.

5.3 Research contributions and implications

The findings discussion in the previous section provides several contributions to the literature, methodology and theory as well as offering insights relevant to corporate practice and standard setters.

5.3.1 Contributions

5.3.1.1 Contributions to theory

The study adds to the existing body of literature on exploring the institutional (mimetic, normative and regulative) factors related to the adoption of CSR practices, by adapting it in a new unexplored context "IR". Unlike most studies utilising an institutional theory lens, chapter 2 contributes by providing a clear distinction between the variables based on the level of analysis (macro and meso levels). Results using this clear depiction contributes to showing that the varying levels of analysis can help explain the subject matter. Therefore, segregating institutional factors by their level of adoption will be highly beneficial to be applied in future studies using an institutional theory lens.

By studying the macro level institutional factors the study builds on literature in this regard. Lee (2008) asserts that future research is urged to study the mechanisms that may explain corporate behaviour and reporting practices from a societal angle, to overcome this gap in current research. The study also contributes to institutional theory application in CSR studies.

Although prior empirical studies in CSR which used an institutional theory made reference to the conceptual studies, this study (and few other studies) converted some of the theoretical propositions of these conceptual studies (e.g., Campbell, 2006; 2007; Jones, 1999; Delmas and Toffel, 2004) into testable hypothesis.

Chapter 3 and 4 adds to the scant empirical studies exploring corporate decoupling between early and late adopters. The notion of decoupling is applied to IR, which has been not explored yet. The results provide evidence of the limited difference between early and late adopters' practices in the early stages of IR adoption. Hence, it would be interesting to revisit such relationship in the future to examine if there would be shifts in the SE disclosures.

Overall, the thesis contributes by relating decoupling and isomorphism through the study of early and late reporting behaviours. Studies in CSR literature mainly used decoupling to examine the difference between substantial and ceremonial practices (Jamali, 2010; Behnam and MacLean, 2011; Weaver et al., 1999; Collier and Esteban, 2007). These studies did not include the relation between the diffusion of practices through isomorphism and the decoupling of practices. Boxenbaum and Jonsson (2008, p. 79) claim that "despite the centrality of isomorphism and decoupling within institutional theory and their close theoretical ancestry, little attention has been devoted to examine how they relate to each other. We recognize that this absence provides for several interesting future research avenues". The insights are reflected upon in the findings of chapter 4 above.

5.3.1.2 Methodological contributions

A chief methodological contribution revolves around the development of a new tool to measure SE in corporate reports which was uncovered by indexes developed in prior research. The SE index was constructed by utilising three guidelines by A4S, CERES and IFAC with focus on SE and built in line with prior research on SE. In addition to being of key importance to the production of an integrated report, embedding sustainability is essential to

corporate activities and functions. Comparing the SE index to the GRI, as well-established sustainability guidance, contributes to showing the improvements in G4 as compared to G3.1 with regard to its potential to embed sustainability within corporate facets.

The use of a different method in this study as compared to prior IR adoption studies (Jensen and Berg, 2012; Frias-Aceituno et al., 2012, 2013a, 2013b; Sierra-García et al., 2013; Churet and Eccles, 2014), enabled providing a portrayal for IR first emergence and adoption. The self-declaration method also provided some insights towards corporate attitudes towards IR, which further the understanding on IR.

Using more refined methods to that used in prior studies in identifying early and late adopters is also another contribution to the study. Chapter 4 used both cut-off points by observations and year, as well as introducing the number of years as a more refined measure for early and late adopters. However, more measures need to be introduced to show early and late adoption and there is a need to apply such new measures to explore the differences in CSR practices.

The application of multi-method quantitative regression techniques is a contribution to this thesis. The study used a logit regression to explore IR adoption and used the OLS regression to explore the effects of early and late adopters decoupling practices and the CG mechanisms in the embeddedness of sustainability in integrated reports. In addition, the study qualitatively provided examples of SE disclosures in the integrated reports, and from the companies showing adverse responses in the data collection. Such examples provide a richer context and genuine insights into IR. Taken together, the application of various methods aided to exploring the overarching aims of this thesis related to IR adoption and corporate reporting practices using an institutional theory lens. Hence, the thesis adds to the limited body of knowledge on IR.

5.3.1.3 Contributions to literature

The thesis particularly contributes to the relatively small, but growing body of literature on IR adoption and reporting practices. Chapter 2 used a large cross country sample to study IR adoption as compared to other IR adoption studies (Jensen and Berg, 2012; Frias-Aceituno et al., 2013a, 2013b; Lodhia, 2014). The study is distinguished from other studies in IR adoption by using a longer time frame from 2002 till 2010 (Frias-Aceituno et al., 2012, 2013a, 2013b studying IR adoption in 2008-2010; Sierra-García et al., 2013). By so doing, the study provided a portrayal for IR adoption and studied the institutional factors affecting it, which was overlooked in previous research.

The thesis contributes to literature by broadly responding to various recent calls especially in the area of IR. Chapter 2 responds to calls on the need for analysis of factors under which IR emerged (De Villiers et al., 2011a; Adams, 2013; 2014), and the need to explore the emergence of corporate IR (Eccles and Krzus, 2010). Chapter 3 provided a novel tool to measure SE in integrated reports, which is in line with calls on the need for studies exploring the levels of integration (De Villiers et al., 2011a) and the IR practices (De Villiers et al., 2011a; Eccles and Krzus, 2010; Burritt, 2012). It also complements studies establishing the need to explore SE within corporate reporting (Adams and McNicholas, 2007; Adams, 2013; Solomon and Maroun, 2012).

The study adds to the extant CSR content analysis literature and to the limited SE literature by providing an index to measure SE in corporate reports. The importance of this contribution stems from the centrality of SE to the production of integrated reports (A4S, 2007; Solomon and Maroun, 2012). Additionally, the study adds to the scarce literature exploring the IR practices which has been asserted to exist prior to academic literature (Eccles and Saltzman, 2011). Extracting GRI indicators that are linked to indicators of SE index provides a unique angle of exploring GRI as compared to studies utilising GRI to depict CSR disclosure (e.g., Bouten et al., 2011; Guthrie et al., 2008).

The thesis also expands on the limited body of CSR literature on decoupling using early and late adopters (Meyskens and Paul, 2010; Bansal and Hunter, 2003; Montiel and Husted, 2009; Sirsly and Lamertz, 2008). Chapter 4 tests empirically corporate decoupling practices in relation to the diffusion of IR among early and late adopters. By so doing, it indirectly responds to calls from Adams (2014, p.5) concerning the need to explore the implications of IR diffusion and corporate reporting practices. Such relation may be adapted to other CSR contexts in order to explore the changes in behaviours and seek correcting actions from various involved groups.

Chapter 4 builds on the extant body of literature discussing the relationship between corporate governance mechanisms and CSR disclosures (e.g., Haniffa and Cooke, 2005; Huse et al., 2009; Post et al., 2011; Michelon and Parbonetti, 2012; Jizi et al., 2013). The study is one of the early attempts to test empirically the relationship between CG and SE. Hence, the study contributes to building on the limited discussion on the relationship between CG and SE in prior literature (e.g., Adams and Frost, 2008; Aldama et al., 2009).

5.3.2 Implications

The results of the three studies have policy related and practice implications. This is heightened as IR is yet in development steps and a holistic framework to guide such reporting is still a work in progress (Lodhia, 2014). Hence, its subsistence and development is contingent upon various interrelated aspects.

Coercive factors were found to have no effect on driving IR adoption at the early stages of its development. However, with the new listing requirements, this is expected to change. A clear disadvantage to listing requirements is that it will drive companies that were unwilling to produce integrated reports to conform to such practices. Therefore, the companies will be more likely to engage in decoupling practices in order to show adherence, while having their business conducted as usual. Conversely, listing requirements may signify that IR is to

dominate corporate reporting practices, in turn, raising awareness to other corporations in different countries to start initiating it. Furthermore, listing requirements for IR adoption seems to be applied beforehand. Setting a holistic guide for IR is a very essential step before any formal application is to be required.

Financial reporting and assurance standard bodies (as IASB, IFAC) and accounting professional associations (as GAA/ICAEW, AICPA, and CPA Australia) form part of the IIRC IR development process. Moreover, big 4 accounting and auditing firms are also involved in the IIRC's <IR> framework development. To that end, this provides support to Burritt (2012) and Jones and Slack (2012), who postulate that integrated reports may replace annual reports as the reporting vehicle and that environmental and social aspects would be promoted to mainstream reporting. It may also result in tightening the bonds between financial and non-financial aspects. For instance, they may develop integrated KPI using combinations of financial and non-financial measures or apply sustainability metrics for employee appraisal, which are currently overlooked in the GRI guidelines. Conversely, it may result in standardising the dominance of financial reporting, while marginalising societal and environmental aspects.

As GRI institutionalisation was found to depend on its founders strategies and the power relations of GRI involved groups (Brown et al. 2009), it is expected that power and political aspects would affect the future of IR. As there exist many groups in the IIRC's council including financial and auditing bodies, government representations, large corporations (few integrated reporters), NGOs and sustainability guidelines setters, where each would have an agenda concerning the development of IR. Thus, balancing different requirements without materially weakening the notion of IR would result in a better IR reporting practice.

IR tended to be practiced by smaller companies on the GRI report list. Hence, there is a concern that GRI development process may be dragged towards suiting the reporting

preferences of larger GRI reporters. For instance, although GRI is to have an IR standard by 2020 (Burritt, 2012, p. 391), this does not seem to resonate with GRI's current attempt. Current GRI G4 guidance describes IR as an emerging and evolving trend of corporate reporting (GRI, 2013a, p. 85). Moreover, GRI hardly mentions IR in its G4 guidelines and concentrates on sustainability reporting instead (see Appendix 5.1 for a word cloud representation of the G4).

Chapter 3 shows that there were improvements on G4 compared to its predecessor G3.1 in relation to SE disclosures. However, there were indicators on the SE index still not reflected under G4. Hence, GRI may use the results of this comparison to instil changes in developing their modified GRI guidelines. Likewise, the SE index would be of use to the ongoing IIRC pilot programme including companies and organisations currently developing IR practices. Additionally, current integrated reports included in the study would highly benefit by applying the SE index and making use of the exemplars provided.

GRI application level was positively associated with SE coverage. Nonetheless, there were SE indicators that were not existent under GRI. Therefore, addressing such issues in GRI by adding these indicators would give rise to newer and more innovative reporting. This is because GRI was found to be a significant normative factor in driving IR adoption.

Another aspect related to the future of IR revolves around the current move towards developing frameworks and guidelines for IR implementation (Cheng et al., 2014). Although normative factors are related to IR adoption, the content of the frameworks and guidelines designed for IR will have an effect on its future implementation. As Westphal et al. (1997) showed, early adopters customise the practices to attain better efficiencies. The same can be projected in the case of IR, whereby early reporters developed their own way of IR. Hence, forcing new practices (i.e. by implementation of the IIRC framework and/or GRI future guidelines on IR) may result in late adopters joining with more decoupled practices. As a

result, this may increase the gap between early and late adopters and cause early adopters to pursue adoption of different/innovative practices. In turn, this may lead to a deinstitutionalisation of IR adoption overtime as it will be perceived as a less legitimate corporate practice. In this regard, Thomson (2014) argues that such frameworks could hinder the development of essential sustainability elements and consider corporate unsustainable practices as sustainable. Hence, it is crucial that early adopters form an essential part of developing future GRI and IIRC IR guidelines.

As a point of critique, IR seems to be crossroads between a story of practice and success (Adams, 2014), a story of failure (Flower, 2014), or a new chapter in the oversimplification of the sustainability reporting dilemma (Thomson, 2014).[137] Flower (2014) heavily criticises IIRC (as the main body promoting IR) to follow a non-transparent process in IR development that is dominated by accounting bodies. He, therefore, suggests that the early IIRC objectives may have changed and that current IIRC have abandoned sustainability accounting. Contrarily, Adams (2014) postulate that IIRC's IR development provides a shift from Anglo-American profit maximisation thinking by aligning profit maximisation to societal and environmental wellbeing. She also contends that accounting bodies are currently practicing IR and including IR foundations into their syllabi. This, in turn, is argued to alter corporate management thinking from only focusing on financial matters towards an emphasis on long-term business value. Her arguments are basically echoing IIRC's rhetoric, which at the moment is still in need to be tested. Thomson (2014) argues that IIRC is oversimplifying the notion of sustainability, which may end up reframing unsustainable corporate practices as sustainable (p. 4). He, therefore, suggests that an integrated report must arguably account for unsustainable actions, and for that to happen IIRC has to construct a sustainability case and then build sustainability-accounting practices (p. 4). Likewise, Brown and Dillard (2014)

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[137] Adams (2014) and Thomson (2014) are commentaries to Flower (2014) criticism on the IIRC and its recently published IIRC framework on IR. The three papers were published online in the Critical Perspectives on Accounting in late July 2014.

suggest that the IIRC's framework offers limited critical insights in to altering the usual unsustainable thinking and would encourage the uptake of weak forms of sustainability reporting.

5.4 Limitations and suggestions for future research

5.4.1 Limitations

Limitations related to each of the empirical chapters were discussed in the devoted section within each chapter. Hence, general limitations related to the thesis are provided herein.

Data collection using the GRI database and corporate self-declaration had advantages over the other data sources as shown in chapter 2. However, it has several limitations that may have affected the study findings in chapter 2 and 4.

Firstly, companies not responding may have affected the findings. Chapter 2 runs a regression excluding the non-respondents which may mitigate, but not eliminate, the issue. There is a chance that if all the companies have stated the year they first adopted integrated reports the results may have altered (non-response bias). However, provided that the corporations were contacted multiple times, this may minimise the negative drawbacks of non-response bias (Saunders et al., 2012).

Secondly, the self-declaration is also a subjective measure as corporations may have different understandings for what represents an integrated report and accordingly may provide in consistent results to one another (response bias). However, in the absence of guidelines on IR and the existence of a reliable database, this technique is rather suitable for the study. Additionally, the technique suitability may stem from the idea that IR was developed by corporate practices in the early years of its development.

The number of integrated reporters was relatively low especially in the early years of adoption. Overall, integrated reporters represented 4% of the total observations of integrated

and non-integrated reporters which may be relatively low.[138] This is, however, not uncommon for many studies in the accounting and CSR discipline. For instance, Dhaliwal (2011) when studying the determinants of first-time CSR adoption, the dependent binary variable had a very low success rate of 1.79% and total number of observations of 11,900.[139] Other IR adoption studies possessed lower adoption rates in their samples, whereby, Frias-Aceituno et al. (2012) had an adoption rate of 2.1% and Frias-Aceituno (2013b) had an adoption rate of 2.8%. Both studies used Forbes 2,000 list and had sample size of 3,042 and 1,575 observations respectively. Their smaller sample sizes and smaller adoption rates elevate the issue of sample selection bias in these studies. Hence, this suggests that the sample selected from the GRI list may suffer lesser sample bias to the other studies in IR adoption using other data sources. The study may still suffer sample selection bias arising from the use of a non-random selected sample (Heckman, 1979). Chapter 2, however, have shown results omitting countries with high representations in the sample to view any changes in the results in order to verify the results were robust.

One of the limitations of the coding scheme is that it is limited to predetermined SE indicators, whereby companies were not consulted in developing these indicators. Hence, the index cannot represent an all-inclusive set of indicators that entirely capture SE.

SE may be best captured using in-depth interviews with company senior members, employees and stakeholders including their suppliers. In chapter 3, SE was captured through corporate reports, which in not expected to include all the rich details about SE as would be captured through case studies. This limitation may affect the SE scores in chapter 3 and its application empirically in chapter 4. However, the use of corporate reports to capture SE contributes to broadening the sample by including a large number of companies, which

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[138] See Table 2.6
[139] The determinants of CSR was a minor objective to the study, the main objective was to study the effects of CSR reports on the cost of equity capital.

wouldn't be feasible under case studies due to geographical, access and time limitations. Additionally, annual report is a material source for social and environmental information for many stakeholders with no access to internal information (Deegan and Rankin, 1997).

Finally, like most CSR indexes, any company meeting the requirements of the indicator would be given a score of 1, whereby if a company adds more details in their reports to the requirements of the indicator it would not attain a higher score. This limitation in the coding scheme of the SE index may affect the overall SE score for companies with better SE disclosures and would equate their disclosures to companies only meeting the index requirements. The index would limit the SE scores for better reporters, where these reporters may have attained higher scores if a scoring scale was introduced. Hence, such limitation may have affected the SE scores produced for integrated reporters in chapter 3 and the dependent variable "EMBED" in chapter 4. Although the current technique comes with its limitations, it provides a less subjective basis for coding corporate reports than the introduction of an alternative scale.

5.4.2 Future research suggestions

As in most other disclosure studies, future research may seek to determine the consequences of IR adoption as the practices start disseminating widely. For instance, studies may embrace the relationship between IR adoption and variables as cost of capital (Dhaliwal et al., 2011; El Ghoul et al., 2011), cost of debt (Sengupta, 1998), firm market value (Luo and Bhattacharya, 2006; Cho et al, 2014 on the association between CSR assurance and firm value), earnings quality (Kim et al., 2012), analyst forecasts accuracy (Dhaliwal et al., 2012), current stock prices to future earnings accuracy (Hussainey and Walker, 2009) non-financial consequences as customer loyalty and trust (Stanaland et al., 2011) and reputation risk management (Stanaland et al., 2011; Bebbington et al., 2008). Additionally, similar to Cho et

al. (2012), the relationship between corporate reputation (i.e. producing integrated reports) and corporate performance mediated by corporate SE disclosures may require attention.

Value relevance of IR adoption to corporate investors remains a novel area of research that needs to be addressed in future studies. The topic was already embraced in financial and voluntary disclosures (Tsalavoutas et al., 2012; Amir and Lev, 1996; Ali and Hwang, 2000), which paves the way to study IR adoption value relevance to investors. Another area is to compare the value relevance of integrated reporters to firms with high CSR reputation leadership (either using DJSI as a proxy for reputation as in Lourenço et al., 2014; Cho et al., 2012, or other proxies as CSR Rep Trak100[140], or indexes as FTSE4Good, STOXX, MSCI and so on).

Future studies may address the link between SE and corporate social and environmental performance, as addressed in prior research in environmental disclosure and performance (Clarkson et al., 2008; Al-Tuwaijri et al., 2004; Patten, 2002). Additionally, such relation may require special interest with respect to environmentally sensitive industries. As descriptively shown in chapter 3, companies in environmentally sensitive industries had SE scores at or above the median score. These companies had SE scores marginally higher than most other industries. The link between media attention and corporate visibility and IR can also be of interest.

Further to chapter 3 and 4 covering SE, future studies can descriptively and empirically compare SE of a sample of integrated reporters to a representative sample of non-integrated reporters (by using the SE index developed in chapter 3). As Flower (2014) argues, IR is currently very different than it was envisaged in 2009 before IIRC's formation. Therefore, potential studies may compare integrated reports of reporters prior to the formation of the IIRC to these currently initiating integrated reports after IIRC's framework.

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[140] It is published by the Reputation Institute, see: http://www.reputationinstitute.com/thought-leadership/csr-reptrak-100 (accessed 26 June 2014).

Another area of interest is to explore impression management and the language use in integrated reports. Studies may use a holistic model as the impression management model developed by Brennan et al. (2010) to uncover the disclosure tones, emphasis and repetition in integrated reports.[141] Additionally, it may be of interest to study impression management in integrated reports of companies involved in the IIRC's pilot study in 2011-2012. Wild and van Staden (2013) provided some initial insights into the reporting content of IIRC's pilot study constituents by showing corporate adherence to reporting different capitals and principles. Hence, language use seems yet unexplored. IIRC (2011, p. 9) and Eccles and Krzus, 2010 claim that by emphasizing transparency (e.g., covering a broader range of issues and disclosing the positive and the negative), IR helps to build trust. Impression management scores may also be derived and compared to a representative sample of non-integrated reports. Additionally, determinants of impression management may be also studied. With regard to language use in the integrated reports, future studies may use a similar methodology to the one applied by Cho et al. (2010) to measure the certainty and optimism scores in the language used in the integrated reports relying on DICTION software.[142]

Studies may need to explore the reporting shifts by the companies taking part of the IIRC's pilot study. The shifts in reporting may involve structural and content changes. Studies may also explore the relation between IIRC's discussion draft, comments on the draft and the final framework developed. Such study would help explain the power struggle of varies related groups and how that was reflected in the final published version. Noteworthy, Flower (2014) has very recently shed some light in this regard.

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[141] Disclosure tone relates to positive and negative keywords and quantitative amounts in the text, emphasis relates to the location of disclosures and repetition relates to repeating positive and negative statements and quantitative amounts in the text (Brennan et al., 2010).

[142] Cho et al. (2010) used a model adopted from an earlier study on impression management by Merkl-Davies and Brennan (2007), and used the Diction software in order to provide proxies for the impression management objectives.

Future research is urged to use the GRI newly established sustainability disclosure database[143] as it is developing extensively in 2014 especially in relation to IR. At the time of developing the data for the study, the database was still in its early development stages with respect to the integrated reports included. The database exhibited development overtime. However, it is still developing and I foresee that it can be used in academic research in the future. Using the database in the future provides several benefits. One benefit is that the database not only includes CSR reporting under the GRI guidelines, but also contains other CSR reporting for non-GRI reporters. Another benefit is that the data is publicly available unlike Corporate Register which requires a fee for accessing the search choices.[144] A limitation attributable to the GRI database is that it is relatively smaller compared to the Corporate Register database.

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[143] The GRI sustainability disclosure database is available at: http://database.globalreporting.org/ (accessed 25/03/2014).
[144] The download of corporate reports on CR website is free of charge.

References

A4S (2007), "Accounting for sustainability report", available at: http://www.accountingforsustainability.org/wp-content/uploads/2011/12/The-Accounting-for-Sustainability-Report-2007.pdf (accessed 02 February 2012).

A4S (2009), "Connected reporting in practice - a consolidated case study", available at: http://www.accountingforsustainability.org/wp-content/uploads/2011/10/Consolidated-Case-Study-FINAL.pdf (accessed 10 January 2013).

Abrahamson, E. (1991), "Managerial fads and fashions: the diffusion and rejection of innovations", *Academy of Management Review*, Vol. 16, pp. 586-612.

ACCA (2011), "Adoption of integrated reporting by the ASX 50", available at: http://www2.accaglobal.com/pubs/general/activitiesx/library/sustainability/reporting_pubs/tech-tp-air2.pdf (accessed 10 January 2013).

Acock, A.C. (2008), *A Gentle Introduction to Stata,* Second Edition, Stata press, Texas.

Acock, A.C. (2012), *A Gentle Introduction to Stata*, Revised Third Edition, Stata press, Texas.

Adams, C.A. (2004), "The ethical, social and environmental reporting-performance portrayal gap", *Accounting, Auditing and Accountability Journal*, Vol. 17 No. 5, pp. 731-757.

Adams, C.A. (2013), *Understanding Integrated Reporting: The Concise Guide to Integrated Thinking and the Future of Corporate Reporting*, Dō Publications: Oxford, ISBN: 9781909293847.

Adams, C.A. (2014), "The international integrated reporting council: a call to action", *Critical Perspectives on Accounting*, In press, http://dx.doi.org/10.1016/j.cpa.2014.07.001.

Adams, C.A. and Evans, R. (2004), "Accountability, completeness, credibility and the audit expectations gap", *Journal of Corporate Citizenship*, Vol. 2004 No. 14, pp. 97-115.

Adams, C.A. and Frost, G.R. (2008), "Integrating sustainability reporting into management practices", *Accounting Forum*, Vol. 32 No. 4, pp. 288-302.

Adams, C.A. and Larrinaga-González, C. (2007), "Engaging with organisations in pursuit of improved sustainability accounting and performance", *Accounting, Auditing and Accountability Journal*, Vol. 20 No. 3, pp. 333-355.

Adams, C.A. and McNicholas, P. (2007), "Making a difference: sustainability reporting, accountability and organisational change", *Accounting, Auditing and Accountability Journal*, Vol. 20 No. 3, pp. 382-402.

Adams, S. and Simnett, R. (2011), "Integrated reporting: an opportunity for Australia's non-for-profit sector", *Australian Accounting Review*, Vol. 21 No 3, pp. 292-301.

Aguilera, R.V. and Jackson, T. (2003), "The cross-national diversity of corporate governance: dimensions and determinants", *Academy of Management Review*, Vol. 28, pp. 447-466.

Aguilera, R.V., Williams, C.A., Conley, J.M. and Rupp, D.E. (2006), "Corporate governance and social responsibility: a comparative analysis of the UK and the US", *Corporate Governance: An International Review*, Vol. 14 No. 3, pp. 147-158.

Aitken, M. and Frino, A. (1996), "The determinants of market bid ask spreads on the Australian stock exchange: cross-sectional analysis", *Accounting and Finance*, Vol. 36 No. 1, pp. 51-63.

Aldama, L.R.P., Amar, P.A. and Trostianki, D.W. (2009), "Embedding corporate responsibility through effective organizational structures", *Corporate Governance*, Vol. 9 No. 4, pp. 506-516.

Ali, A. and Hwang, L.S. (2000), "Country-specific factors related to financial reporting and

References

the value relevance of accounting data", *Journal of Accounting Research*, Vol. 38 No. 1, pp. 1-21.

Allison, P.D. (1995), *Survival Analysis using the SAS System*, SAS Institute, Cary.

Allison, P.D. (2005), *Fixed Effects Regression Methods for Longitudinal Data using SAS*, SAS Press.

Altron (2010), "Altron integrated annual report 2010", available at: http://www.altron.com/annual2010/pdf/altronAR2010.pdf (accessed 07 June 2014).

Al-Tuwaijri, S.A., Christensen, T.E. and Hughes, K.E. (2004), "The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach", *Accounting, Organizations and Society*, Vol. 29 No. 5, p. 447-471.

American Electric Power (2010), "American Electric Power 2010 accountability report", available at: http://www.aepsustainability.com/fastfacts/docs/AEP-AccountabilityReport2010.pdf (accessed 07 June 14).

Amir, E. and Lev, B. (1996), "Value-relevance of nonfinancial information: the wireless communications industry", *Journal of Accounting and Economics*, Vol. 22 No. 1, pp. 3-30.

Amran, A. and Haniffa, R. (2011), "Evidence in development of sustainability reporting: a case of a developing country", *Business Strategy and the Environment*, Vol. 20 No. 3, pp. 141-156.

Anderson, D.A. and Aitkin, M. (1985), "Variance component models with binary response: interviewer variability", *Journal of the Royal Statistical Society, Series B (Methodological)*, Vol. 47 No. 2, pp. 203-210.

Anglo Platinum (2010), "Anglo Platinum 2010 annual report", available at: http://investoreports.com/angloplatinumar2010_pdfs/downloads/angloplatinum_2010.pdf (accessed 07 June 14).

Antena 3 (2010), "Antena 3 annual and corporate responsibility report 2010", available at: http://www.atresmediacorporacion.com/a3document/2011/03/30/DOCUMENTS/00004/00004.pdf (accessed 07 June 2014).

Aramex (2010), "Aramex annual report 2010" available at: http://www.aramex.com/content/uploads/100/55/44233/Annual-Report-2010.pdf (accessed 07 June 2014).

Aravind, D. and Christmann, P. (2011), "Decoupling of standard implementation from certification: does quality of ISO 14001 implementation affect facilities' environmental performance?", *Business Ethics Quarterly*, Vol. 21 No. 1, pp. 73-102.

Arenas, D., Lozano, J.M. and Albareda, L. (2009), "The role of NGOs in CSR: mutual perceptions among stakeholders", *Journal of Business Ethics*, Vol. 88 No. 1, pp. 175-197.

Arya, B. and Zhang, G. (2009), "Institutional reforms and investor reactions to CSR announcements: evidence from an emerging economy", *Journal of Management Studies*, Vol. 46 No. 7, pp. 1089-1112.

Aste, L.J. (1999), "Reforming French corporate governance: a return to the two-tier board?", *The George Washington Journal of International Law and Economics*, Vol. 32 No. 1, pp. 1- 72.

Austin, J. and Reavis, C. (2002), *Starbucks and Conservation International*, Harvard Business School Case Services.

Ayala Land (2010), "Ayala Land integrated annual and sustainability report 2010", available at: http://ir.ayalaland.com.ph/uploads/files/ALI_Annual_Report_2010a.pdf (accessed 07 June 2014).

References

Ayres, F.L. (1986), "Characteristics of firms electing early adoption of SFAS 52" , *Journal of Accounting and Economics*, Vol. 8 No. 2, pp. 143-158.

Azapagic, A. (2004), "Developing a framework for sustainable development indicators for the mining and minerals industry", *Journal of Cleaner Production*, Vol. 12 No. 6, pp. 639-662.

Baker, T.L. (1994), *Doing Social Research*, Second Edition, McGraw-Hill Inc, New York.

Ball, A., Owen, D.L. and Gray, R.H. (2000), "External transparency or internal capture? The role of third party statements in adding value to corporate environmental reports", *Business Strategy and the Environment*, Vol. 9 No. 1, pp. 1–23.

Ballou, B., Casey, R.J., Grenier, J.H. and Heitger, D.L. (2012), "Exploring the strategic integration of sustainability initiatives: opportunities for accounting research", *Accounting Horizons*, Vol. 26 No. 2, pp. 265-288.

Banerjee, S.B. (2011), "Embedding sustainability across the organization: a critical perspective", *Academy of Management Learning and Education*, Vol. 10 No. 4, pp. 719-731.

Bansal, P. (2005), "Evolving sustainably: a longitudinal study of corporate sustainable development", *Strategic Management Journal*, Vol. 26 No. 3, pp. 197-218.

Bansal, P. and Hunter, T. (2003), "Strategic explanations for the early adoption of ISO 14001", *Journal of Business Ethics*, Vol. 46 No. 3, pp. 289-299.

Bartocci, L. and Picciaia, F. (2013), "Towards integrated reporting in the public sector", in Busco, C., Frigo, M.L., Riccaboni, A. and Quattrone, P. (Eds), *Integrated Reporting: Concepts and Cases that Redefine Corporate Accountability*, Springer, pp. 191-204.

BASF (2010), "BASF report 2010", available at: http://www.basf.com/group/corporate/en_GB/function/conversions:/publish/content/about-basf/facts-reports/reports/2010/BASF_Report_2010.pdf (accessed 07 June 2014).

Bear, S., Rahman, N. and Post, C. (2010), "The impact of board diversity and gender composition on corporate social responsibility and firm reputation", *Journal of Business Ethics*, Vol. 97 No. 2, pp. 207-221.

Beattie, V. (2014), "Accounting narratives and the narrative turn in accounting research: issues, theory, methodology, methods and a research framework", *The British Accounting Review*, Vol. 46 No. 2, pp. 111-134.

Beattie, V. and Smith, S.J. (2013), "Value creation and business models: refocusing the intellectual capital debate", *The British Accounting Review*, Vol. 45 No. 4, pp. 243-254.

Beattie, V., McInnes, B. and Fearnley, S. (2004), "A methodology for analysing and evaluating narratives in annual reports: a comprehensive descriptive profile and metrics for disclosure quality attributes", *Accounting Forum*, Vol. 28 No. 3, pp. 205-236.

Bebbington, J. (1997), "Engagement, education and sustainability: a review essay on environmental accounting", *Accounting, Auditing and Accountability Journal*, Vol. 10 No. 3, pp. 365-381.

Bebbington, J. (2001), "Sustainable development: a review of the international development, business and accounting literature", *Accounting Forum*, Vol. 25 No. 2, pp. 128–157.

Bebbington, J., Higgins, C. and Frame, B. (2009), "Initiating sustainable development reporting: evidence from New Zealand", *Accounting, Auditing and Accountability Journal*, Vol. 22 No. 4, pp. 588-625.

Bebbington, J., Larrinaga, C. and Moneva, J.M. (2004), "An evaluation of the role of social, environmental and sustainable development reporting in reputation risk management", paper presented at the fourth Asian Pacific Interdisciplinary Research in Accounting (APIRA) Conference.

References

Bebbington, J., Larrinaga, C. and Moneva, J.M. (2008), "Corporate social reporting and reputation risk management", *Accounting, Auditing and Accountability Journal*, Vol. 21 No. 3, pp. 337-361.

Behnam, M. and MacLean, T. (2011), "Where is the accountability in international accountability standards?: a decoupling perspective", *Business Ethics Quarterly*, Vol. 21 No. 1, pp. 45-72.

Belgacom (2010), "Belgacom 2010 annual report", available at: http://www.belgacom.com/assets/content/mbimport/%7B5A00DA53-9815-443B-AB8C-A7BB2EB2702F%7D.pdf?transformationID=mbConnector&contentType=content/media (accessed 07 June 2014).

Belkaoui, A. and Karpik P.G. (1989), "Determinants of the corporate decision to disclose social information", *Accounting, Auditing and Accountability Journal*, Vol. 2 No. 1, pp. 36–51.

Bell, J., Soybel, V.E. and Turner, R.M. (2012), "Integrating sustainability into corporate DNA", *Journal of Corporate Accounting and Finance*, Vol. 23 No. 3, pp. 71-82.

Berger, I.E., Cunningham, P. and Drumwright, M.E. (2007), "Mainstreaming corporate social responsibility: developing markets for virtue", *California Management Review*, Vol. 49 No. 4, pp. 132–157.

Berger, P. and Luckmann, T. (1967), *The Social Construction of Reality: a Treatise in the Sociology of Knowledge*, Penguin Press, New York.

BES (2010), "BES annual report 2010", available at: http://www.bes.pt/SITEBES/cms.aspx?plg=6e59acac-3bc3-4a19-8802-7bad9311062c (accessed 07 June 2014).

Bhimani, A. and Soonawalla, K. (2005), "From conformance to performance: the corporate responsibilities continuum", *Journal of Accounting and Public Policy*, Vol. 24, pp. 165–74.

Bhimani, A. and Soonawalla, K. (2010), "Sustainability and organisational connectivity at HSBC", in Hopwood A.G., Unerman, J. and Fries, J. (Eds), *Accounting for Sustainability: Practical Insights*, Earthscan, pp. 215-232.

Bidvest (2010), "Bidvest 2010 annual report", available at: http://www.bidvest.com/results/2010/ar/bidvest_ar2010/downloads/bidvest_ar2010.pdf (accessed 07 June 2014).

Bies, R.J., Bartunek, J.M., Fort, T.L. and Zald, M.N. (2007), "Corporations as social change agents: individual, interpersonal, institutional, and environmental dynamics", *Academy of Management Review*, Vol. 32 No. 3, pp. 788-793.

Billerud (2010), "Billerud AB annual report 2010", available at: http://www.billerud.com/Documents/Cision/documents/2011/20110407-billeruds-annual-report-for-2010-released-en-2-561082.pdf (accessed 07 June 2014).

Birnik, A. (2013), "Developing climate change strategy: a framework for managers", *Thunderbird International Business Review*, Vol. 55 No. 6, pp. 699-717.

Black Sun (2011a), "Integrated thinking in reporting", available at, http://www.blacksunplc.com/corporate/177e609057867983abc4487a520bb0f5/thinking/sources/projet/Integrated-Reporting.pdf (accessed 10 January 2013).

Black Sun (2011b), "The integrated reporting journey", available at, http://www.blacksunplc.com/corporate/177e609057867983abc4487a520bb0f5/journey/sources/projet/The-Integrated-Journey.pdf (accessed 10 January 2013).

Black Sun (2011c), "Toward global sustainability", available at, http://www.blacksunplc.com/corporate/177e609057867983abc4487a520bb0f5/sustainability/sources/projet/Global-Sustainability-2010.pdf (accessed 10 January 2013).

References

Blasco, M. and Zølner, M. (2010), "Corporate social responsibility in Mexico and France exploring the role of normative institutions", *Business and Society*, Vol. 49 No. 2, pp. 216-251.

Bondy, K., Matten, D. and Moon, J. (2004), "The adoption of voluntary codes of conduct in MNCs: a three-country comparative study", *Business and Society Review*, Vol. 109 No. 4, pp. 449-477.

Boone, A.L., Casares, F.L., Karpoff, J.M. and Raheja, C.G. (2007), "The determinants of corporate board size and composition: an empirical analysis", *Journal of Financial Economics*, Vol. 85 No. 1, pp. 66-101.

Botero, J.C., Djankov, S., La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2004), "The regulation of labor", *The Quarterly Journal of Economics*, Vol. 119 No. 4, pp. 1339-1382.

Bourdieu, P. (1980), "Le capital social: notes provisoires", *Actes de la Recherche en Sciences Sociales*, Vol. 31 No. 1, pp. 2–3.

Bouten, L., Everaert, P., Van Liedekerke, L., De Moor, L. and Christiaens, J. (2011), "Corporate social responsibility reporting: a comprehensive picture?", *Accounting Forum*, Vol. 35 No. 3, pp. 187-204.

Bouten, L., Everaert, P. and Roberts, R.W. (2012), "How a Two-Step Approach Discloses Different Determinants of Voluntary Social and Environmental Reporting", *Journal of Business Finance & Accounting*, Vol. 39 No. 5-6, pp. 567-605.

Boxenbaum, E. and Jonsson, S. (2008), "Isomorphism, diffusion and decoupling", in Greenwood, R., Oliver, C., Sahlin, K. and Suddaby, R. (Eds), *The Sage Handbook of Organizational Institutionalism*, SAGE publications Ltd, London, pp. 78-98.

Boyatzis, R.E. (1998), *Transforming qualitative information: Thematic analysis and code development*, Sage Publications.

Braaksma, S. (2010), "Six reasons why CFOs should be interested in sustainability", in Eccles, R.G., Cheng, B. and Saltzman, D. (Eds), *The Landscape of Integrated Reporting Reflections and Next Steps*, Harvard Business School e-book, pp. 88-90, available at: http://hbswk.hbs.edu/pdf/The_Landscape_of_Integrated_Reporting.pdf (accessed 08 May 2013).

Brammer, S. and Millington A. (2004), "The development of corporate charitable contributions in the UK: a stakeholder analysis", *The Journal of Management Studies*, Vol. 41 No.8, pp. 1411–1434.

Brammer, S. and Millington A. (2006), "Firm size, organizational visibility and corporate philanthropy: an empirical analysis", *Business Ethics: A European Review*, Vol. 15 No. 1, pp. 6–18.

Brammer, S., Millington, A. and Pavelin, S. (2009), "Corporate reputation and women on the board", *British Journal of Management*, Vol. 20 No. 1, pp. 17–29.

Brennan, N.M., Daly, C.A. and Harrington, C.S. (2010), "Rhetoric, argument and impression management in hostile takeover defence documents", *The British Accounting Review*, Vol. 42 No. 4, pp. 253–268.

Broadbent, J., Dietrich, M. and Laughlin, R. (1996), "The development of principal-agent, contracting and accountability relationships in the public sector: conceptual and cultural problems", *Critical Perspectives on Accounting*, Vol. 7 No. 3, pp. 259–284.

Brown, H.S., de Jong, M. and Levy, D.L. (2009), "Building institutions based on information disclosure: lessons from GRI's sustainability reporting", *Journal of Cleaner Production*, Vol. 17 No. 6, pp. 571–580.

Brown, J. and Dillard, J. (2014), "Integrated reporting: on the need for broadening out and opening up", *Accounting, Auditing and Accountability Journal*, Vol. 27 No. 7, http://dx.doi.org/10.1108/AAAJ-04-2013-1313.

References

Bryman, A. and Bell, E. (2011), *Business Research Methods*, Third edition, Oxford University press.

Buhmann, K. (2006), "Corporate social responsibility: what role for law? Some aspects of law and CSR", *Corporate Governance*, Vol. 6 No.2, pp. 188-202.

Burrell, G. and Morgan, G. (1992), *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life*, Ashgate, Aldershot.

Burritt, R.L. (2012), "Environmental performance accountability: planet, people, profits", *Accounting, Auditing and Accountability Journal*, Vol. 25 No. 2, pp. 370-405.

Burritt, R.L. and Schaltegger, S. (2001), "Eco-efficiency in corporate budgeting", *Environmental Management and Health*, Vol. 12 No. 2, pp. 158-174.

Burritt, R.L. and Schaltegger, S. (2010), "Sustainability accounting and reporting: fad or trend?", *Accounting, Auditing and Accountability Journal*, Vol. 23 No. 7, pp. 829-846.

Burton, B.K. and Hegarty, W.H. (1999), "Some determinants of student corporate social responsibility orientation", *Business and Society*, Vol. 38, pp. 188-205.

Busco, C., Frigo, M.L., Quattrone, P. and Riccaboni, A. (2013b), "Towards integrated reporting: concepts, elements and principles", in Busco, C., Frigo, M.L., Riccaboni, A. and Quattrone, P. (Eds), *Integrated Reporting: Concepts and Cases that Redefine Corporate Accountability*, Springer, pp. 3-18.

Busco, C., Frigo, M.L., Riccaboni, A. and Quattrone, P. (2013a), *Integrated Reporting: Concepts and Cases that Redefine Corporate Accountability*, Springer.

Buysse, K. and Verbeke, A. (2003), "Proactive environmental strategies: a stakeholder management perspective", *Strategic Management Journal*, Vol. 24 No. 5, pp. 453-470.

Campbell, J.L. (2006), "Institutional analysis and the paradox of corporate social responsibility", *American Behavioral Scientist*, Vol. 49 No. 7, pp. 925-938.

Campbell, J.L. (2007), "Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility", *Academy of Management Review*, Vol. 32 No.3, pp. 946–967.

Carroll, A.B. (1979), "A three-dimensional conceptual model of corporate performance", *Academy of Management Review*, Vol. 4 No. 4, pp. 497–505.

Carroll, A.B. and Shabana, K.M. (2010), "The business case for corporate social responsibility: a review of concepts, research and practice", *International Journal of Management Reviews*, Vol. 12 No. 1, pp. 85-105.

CERES (2010), "The 21st century corporation: the CERES roadmap for sustainability", available at: http://www.ceres.org/resources/reports/ceres-roadmap-to-sustainability-2010 (accessed 20 February 2012).

Cetindamar, D. and Husoy, K. (2007), "Corporate social responsibility practices and environmentally responsible behavior: the case of the United Nations Global Compact", *Journal of Business Ethics*, Vol. 76 No. 2, pp. 163–176.

Chaganti, R.S., Mahajan, V. and Sharma, S. (1985), "Corporate board size, composition and corporate failures in retailing industry", *Journal of Management Studies*, Vol. 22 No. 4, pp. 400-417.

Chen, C.J. and Jaggi, B. (2000), "Association between independent non-executive directors, family control and financial disclosures in Hong Kong", *Journal of Accounting and Public Policy*, Vol. 19 No. 4, pp. 285-310.

Chen, S. and Bouvain, P. (2009), "Is corporate responsibility converging? A comparison of corporate responsibility reporting in the USA, UK, Australia, and Germany", *Journal of Business Ethics*, Vol. 89, pp. 299-317.

Chen, X., Ender, P., Mitchell, M. and Wells, C. (2013), "Introduction to logistic regression with Stata", in Chen, X., Ender, P., Mitchell, M. and Wells, C. (Eds), *Logistic Regression with Stata*, available at:

References

http://www.ats.ucla.edu/stat/stata/webbooks/logistic/chapter1/statalog1.htm (accessed 25 April 2013).

Cheng, E. and Courtenay, S.M. (2006), "Board composition, regulatory regime and voluntary disclosure", *The International Journal of Accounting*, Vol. 41 No. 3, pp. 262-289.

Cheng, M., Green, W., Conradie, P., Konishi, N. and Romi, A. (2014), "The international integrated reporting framework: key issues and future research opportunities", *Journal of International Financial Management and Accounting*, Vol. 25 No. 1, pp. 90-119.

Chih, H.L., Chih, H.H. and Chen, T.Y. (2010), "On the determinants of corporate social responsibility: international evidence on the financial industry", *Journal of Business Ethics*, Vol. 93, pp. 115–135.

Cho, C.H., Guidry, R.P., Hageman, A.M. and Patten, D.M. (2012), "Do actions speak louder than words? An empirical investigation of corporate environmental reputation", *Accounting, Organizations and Society*, Vol. 37 No. 1, pp. 14–25.

Cho, C.H., Michelon, G., Patten, D.M. and Roberts, R.W. (2014), "CSR report assurance in the USA: an empirical investigation of determinants and effects", *Sustainability Accounting, Management and Policy Journal*, Vol. 5 No. 2, pp. 130-148.

Cho, C.H., Roberts, R.W. and Patten, D.M. (2010), "The language of US corporate environmental disclosure", *Accounting, Organizations and Society*, Vol. 35 No. 4, pp. 431-443.

Chua, W.F. (1986), "Radical developments in accounting thought", *The Accounting Review*, Vol. 61 No. 4, pp. 601-632.

Churet, C. and Eccles, R.G. (2014), "Integrated reporting, quality of management, and financial performance", *Journal of Applied Corporate Finance*, Vol. 26 No. 1, pp. 56-64.

Citycon (2010), "Citycon annual and sustainability report 2010", available at: http://www.citycon.fi/UserFiles/citycon_2010/File/Citycon_vsk2010_ENG.pdf (accessed 07 June 2014).

Clarkson, P.M., Li, Y., Richardson, G.D. and Vasvari, F.P. (2008), "Revisiting the relation between environmental performance and environmental disclosure: an empirical analysis", *Accounting, Organizations and Society*, Vol. 33 No. 4, pp. 303-327.

Collier, J. and Esteban, R. (2007), "Corporate social responsibility and employee commitment", *Business Ethics: A European Review*, Vol. 16 No. 1, pp. 19-33.

Collins, R. (1979), *The Credential Society: a Historical Sociology of Education and Stratification*, Academic Press, New York.

Collison, D., Cross, S., Ferguson, J., Power, D. and Stevenson, L. (2012), "Legal determinants of external finance revisited: the inverse relationship between investor protection and societal well-being", *Journal of Business Ethics*, Vol. 108 No. 3, pp. 393-410.

Cook, R.D. (1977), "Detection of influential observation in linear regression", *Technometrics*, Vol. 19 No. 1, pp. 15-18.

Cooke, T.E. (1989), "Disclosure in the corporate annual reports of Swedish companies", *Accounting and Business Research*, Vol. 19 No. 74, pp. 113-124.

Cooke, T.E. (1998), "Regression analysis in accounting disclosure studies", *Accounting and Business Research*, Vol. 28 No. 3, pp. 209-224.

Cooper, S.M. and Owen, D.L. (2007), "Corporate social reporting and stakeholder accountability: the missing link", *Accounting, Organizations and Society*, Vol. 32 No. 7, pp. 649-667.

Cormier, D., Magnan, M. and van Velthoven, B. (2005), "Environmental disclosure quality in large German companies: economic incentives, public pressures or institutional conditions?", *European Accounting Review*, Vol. 14 No. 1, pp. 3–39.

References

Cowen, S.S., Ferreri, L.B. and Parker, L.D. (1987), "The impact of corporate characteristics on social responsibility disclosure: a typology and frequency-based analysis", *Accounting, Organizations and Society*, Vol. 12 No. 2, pp. 111-122.

CPVDC (2010), "Cebu Property Ventures integrated report 2010", available at: http://www.cpvdc.com/filebrowser/download/44 (accessed 07 June 2014).

Cramer, J., Jonker, J. and van der Heijden, A. (2004), "Making sense of corporate social responsibility", *Journal of Business Ethics*, Vol. 55 No. 2, pp. 215-222.

Cyert, R.M. and March, J.G. (1963), *A Behavioral Theory of the Firm*, Englewood Cliffs, New Jersey.

Dahlsrud, A. (2008), "How corporate social responsibility is defined: an analysis of 37 definitions", *Corporate Social Responsibility and Environmental Management*, Vol. 15 No. 1, pp. 1-13.

Daily, C.M., Certo S.T. and Dalton D.R. (1999), "A decade of corporate women: some progress in the boardroom, none in the executive suite", *Strategic Management Journal*, Vol. 20, pp. 93–99.

Daniel, J. (2012), *Sampling Essentials: Practical Guidelines for Making Sampling Choices*, SAGE Publications Inc., Thousand Oaks, California.

Dao, V., Langella, I. and Carbo, J. (2011), "From green to sustainability: information technology and an integrated sustainability framework", *The Journal of Strategic Information Systems*, Vol. 20 No. 1, pp. 63-79.

Daub, C.H. (2007), "Assessing the quality of sustainability reporting: an alternative methodological approach", *Journal of Cleaner Production*, Vol. 15 No. 1, pp. 75-85.

Davidson R. and MacKinnon J. G. (1993), *Estimation and Inference in Econometrics*, Oxford University Press, New York.

De Villiers, C. and Alexander, D. (2010), "Isomorphism in social and environmental disclosures", APIRA Conference, working paper, available at: http://apira2010.econ.usyd.edu.au/conference_proceedings/APIRA-2010-196-deVilliers-Isomorphism-in-social-and-environmental-disclosures.pdf (accessed 03 June 2013).

De Villiers, C. and Alexander, D. (2014), "The institutionalisation of corporate social responsibility reporting", *The British Accounting Review*, Doi: 10.1016/j.bar.2014.03.001.

De Villiers, C., Naiker, V. and van Staden, C.J. (2011b), "The effect of board characteristics on firm environmental performance", *Journal of Management*, Vol. 37, pp. 1636–1663.

De Villiers, C., Rinaldi, L. and Unerman, J. (2014), "Integrated reporting: insights, gaps and an agenda for future research", *Accounting, Auditing and Accountability Journal*, Vol. 27 No. 7, http://dx.doi.org/10.1108/AAAJ-06-2014-1736.

De Villiers, C., Unerman, J. and Rinaldi, L. (2011a), "Special issue on integrated reporting", *Accounting, Auditing and Accountability Journal*, available at: http://www.emeraldinsight.com/authors/writing/calls.htm?id=4032 (accessed 05 May 2013).

Deakin, S. and Whittaker, D.H. (2007), "Re-embedding the corporation? Comparative perspectives on corporate governance, employment relations and corporate social responsibility", *Corporate Governance: An International Review*, Vol. 15 No. 1, pp. 1-4.

Debreceny, R., Gray, G.L. and Rahman, A. (2003), "The determinants of internet financial reporting", *Journal of Accounting and Public Policy*, Vol. 21 No. 4, pp. 371-394.

Deegan, C. (2002), "Introduction: the legitimising effect of social and environmental disclosures – a theoretical foundation", *Accounting, Auditing and Accountability Journal*, Vol. 15 No. 3, pp. 282–311.

References

Deegan, C. and Rankin, M. (1997), "The materiality of environmental information to users of annual reports", *Accounting, Auditing and Accountability Journal*, Vol. 10 No. 4, pp. 562–583.

Deegan, C. and Unerman, J. (2011), *Financial Accounting Theory: Second European Edition*, McGraw-Hill, Maidenhead.

Delmas, M. and Toffel, M.W. (2004), "Stakeholders and environmental management practices: an institutional framework", *Business Strategy and the Environment*, Vol. 13 No. 4, pp. 209-222.

Delmas, M.A. and Montes-Sancho, I.M.J. (2011), "An institutional perspective on the diffusion of international management system standards: the case of the environmental management standard ISO 14001", *Business Ethics Quarterly*, Vol. 21 No. 1, pp. 103-132.

Delta Lloyd (2010), "Delta Lloyd annual report 2010", available at: http://www.deltalloydgroep.com/en/investor-relations/results/archive/?y=3494 (accessed 07 June 2014).

Denzin, N.K. and Lincoln, Y.S. (2005), *The Sage Handbook of Qualitative Research*, Sage Publications, London.

Dey, C. (2007), "Social accounting at Traidcraft plc: a struggle for the meaning of fair trade", *Accounting, Auditing and Accountability Journal*, Vol. 20 No. 3, pp. 423-445.

Dey, C.R. and Burns, J. (2010), "Integrated reporting at Novo Nordisk", in Hopwood A.G., Unerman, J. and Fries, J. (Eds), *Accounting for Sustainability: Practical Insights*, Earthscan, pp. 215–232.

Dhaliwal, D.S., Li, O.Z., Tsang, A. and Yang, Y.G. (2011), "Voluntary nonfinancial disclosure and the cost of equity capital: the initiation of corporate social responsibility reporting", *The Accounting Review*, Vol. 86 No. 1, pp. 59-100.

Dhaliwal, D.S., Radhakrishnan, S., Tsang, A. and Yang, Y.G. (2012), "Nonfinancial disclosure and analyst forecast accuracy: international evidence on corporate social responsibility disclosure", *The Accounting Review*, Vol. 87 No.3, pp. 723-759.

Dillard, J.F., Rigsby, J.T. and Goodman, C. (2004), "The making and remaking of organization context: duality and the institutionalization process", *Accounting, Auditing and Accountability Journal*, Vol. 17 No. 4, pp. 506-542.

DiMaggio, P.J. (1988), "Interest and agency in institutional theory", in Zucker L.G. (Ed.), *Institutional Patterns and Organizations*, Ballinger, Cambridge, pp. 3-22.

DiMaggio, P.J. and Powell, W.W. (1991a), "Introduction", in Powell, W.W. and DiMaggio, P.J. (Eds), *The New Institutionalism in Organizational Analysis*, The University of Chicago Press, Chicago, pp. 1-38.

DiMaggio, P.J. and Powell, W.W. (1991b), "The iron cage revisited: institutional isomorphism and collective rationality in organizational fields", in Powell, W.W. and DiMaggio, P.J. (Eds), *The New Institutionalism in Organizational Analysis*, The University of Chicago Press, Chicago, pp. 63-82.

Dingweth, K. and Eichinger, M. (2010), "Tamed transparency: how information disclosure under the global reporting initiative fails to empower", *Global Environmental Politics*, Vol. 10 No.3, pp.74-96.

Doh, J.P. and Guay, T.R. (2006), "Corporate social responsibility, public policy, and NGO activism in Europe and the United States: an institutional-stakeholder perspective", *Journal of Management Studies*, Vol. 43 No. 1, pp. 47-73.

Doh, J.P. and Teegen, H. (2003), *Globalization and NGOs: Transforming Business, Government, and Society*, Greenwood Publishing Group.

Donaldson, L. and Davis, J.H. (1994), "Boards and company performance-research challenges the conventional wisdom", *Corporate Governance: An International Review*, Vol. 2 No. 3, pp. 151-160.

Douma, S. (1997), "The two-tier system of corporate governance", *Long Range Planning*, Vol. 30 No. 4, pp. 612-614.

Dragu, I.M. and Tiron-Tudor, A. (2014), "Integrating best reporting practices for enhancing corporate social responsibility", in Mermod, A.Y. and Samuel O.I. (Eds), *Corporate Social Responsibility in the Global Business World*, Springer, Berlin Heidelberg, pp. 27-47.

Druckman, P. (2013), "Forward", in Adams, C. (Ed.), *Understanding Integrated Reporting: The Concise Guide to Integrated Thinking and the Future of Corporate Reporting*, Dō Publications, Oxford, pp. 19-21.

Dumay, J., Guthrie, J. and Farneti, F. (2010), "GRI sustainability reporting guidelines for public and third sector organizations: a critical review", *Public Management Review*, Vol. 12 No. 4, pp. 531-548.

Duratex (2010), "Duratex SA annual report 2010", available at: http://www.duratex.com.br/RAO/2010/eng/download/Duratex_2010.pdf (accessed 07 June 2014).

Dyllick, T. and Hockerts, K. (2002), "Beyond the business case for corporate sustainability", *Business Strategy and the Environment*, Vol. 11 No. 2, pp. 130-141.

EC (2013), "Disclosure of non-financial and diversity information by certain large companies and groups", available at: http://europa.eu/rapid/press-release_MEMO-13-336_en.htm?locale=FR (accessed 12 July 2014).

Eccles, R.G. and Kiron, D. (2012), "Get ready: mandated integrated reporting is the future of corporate reporting", *MIT Sloan Management Review*, Vol. 53 No.3, pp. 1-6.

Eccles, R.G. and Krzus, M.P. (2010), *One Report: Integrated Reporting for a Sustainable Strategy*, John Wiley and Sons Inc., New Jersey.

Eccles, R.G. and Saltzman, D. (2011), "Achieving sustainability through integrated reporting", *Stanford Social Innovation Review*, pp. 56-61.

Eccles, R.G. and Serafeim, G. (2011), "Accelerating the adoption of integrated reporting", in de Leo, F. and Vollbracht, M. (Eds), *CSR Index*, InnoVatio Publishing, Boston, pp. 70-92.

EDC (2010), "EDC 2010 integrated annual and sustainability report", available at: http://www.energy.com.ph/wp-content/uploads/2011/07/EDC_IASR2010.pdf (accessed 07 June 2014).

EDP Renováveis (2010), "EDP Renováveis 2010 annual report", available at: http://www.edpr.com/investors/reports-and-results/company-reports/ (accessed 07 June 2014).

El Ghoul, S., Guedhami, O., Kwok, C.C. and Mishra, D.R. (2011), "Does corporate social responsibility affect the cost of capital?", *Journal of Banking and Finance*, Vol. 35 No. 9, pp. 2388-2406.

Elkington, J. (1997), *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*, Capstone Publishing Limited, Oxford.

Elshandidy, T., Fraser, I. and Hussainey, K. (2013), "Aggregated, voluntary, and mandatory risk disclosure incentives: evidence from UK FTSE all-share companies", *International Review of Financial Analysis*, Vol. 30, pp. 320-333.

Elzahar, H. and Hussainey, K. (2012), "Determinants of narrative risk disclosures in UK interim reports", *The Journal of Risk Finance*, Vol. 13 No. 2, pp. 133-147.

ENDESA (2010), "ENDESA sustainability report 2010", available at: http://www.endesa.com/EN/SALADEPRENSA/CENTRODOCUMENTAL/Informes%20Anuales/SostenibilidadING[1].pdf (accessed 07 June 2014).

Eng, L.L. and Mak, Y.T. (2003), "Corporate governance and voluntary disclosure", *Journal of Accounting and Public Policy*, Vol. 22 No. 4, pp. 325-345.

Evraz Highveld (2010), "Evraz Highveld annual report 2010", http://www.evrazhighveld.co.za/annual_reports/Evraz%20Highveld%20Steel%20Final%202010.pdf (accessed 07 June 2014).

Exxaro Resources (2010), "Exxaro Resources integrated annual report 2010", available at: http://financialresults.co.za/2011/exxaro_ar2010/downloads/exxaro_ar2010.pdf (accessed 07 June 2014).

Fama, E.F. (1980), "Agency problems and theory of the firm", *Journal of Political Economy*, Vol. 88 No. 2, pp. 288-307.

Fama, E.F. and Jensen, M.C. (1983), "Separation of ownership and control", *Journal of Law and Economics*, Vol. 26 No. 2, pp. 301-325.

FEE (1999), "FEE discussion paper: providing assurance on environmental reports", available at: http://www.fee.be/images/publications/sustainability/DP_Assurance_Environmental_Reports173200531524.pdf (accessed 12 July 2014).

FEE (2011a), "Environmental, social and governance (ESG) indicators in annual reports: an introduction to current frameworks", available at: http://www.fee.be/images/publications/sustainability/ESG_indicators_in_annual_reports_An_introduction_to_current_frameworks_1105_Colour2652011551650.pdf (accessed 12 July 2014).

FEE (2011b), "Integrated reporting factsheet", available at: http://www.fee.be/images/publications/sustainability/Integrated_Reporting_January_2013112011421157.pdf (accessed 14 July 2014).

Firth, M., Fung, P.M. and Rui, O.M. (2007), "Ownership, two-tier board structure, and the informativeness of earnings–Evidence from China", *Journal of Accounting and Public Policy*, Vol. 26 No. 4, pp. 463-496.

Flower, J. (2014), "The international integrated reporting council: a story of failure", *Critical Perspectives on Accounting*, In press, http://dx.doi.org/10.1016/j.cpa.2014.07.002.

Forker, J.J. (1992), "Corporate governance and disclosure quality", *Accounting and Business Research*, Vol. 22 No. 86, pp. 111–124.

Fortanier, F., Kolk, A. and Pinkse, J. (2011), "Harmonization in CSR reporting: MNEs and global CSR standards", *Management International Review*, Vol. 51 No. 5, pp. 665-696.

Foster, J., Barkus, E. and Yavorsky, C. (2006), *Understanding and Using Advanced Statistics*, SAGE Publications Limited, London.

Fowler, S.J. and Hope, C. (2007), "A critical review of sustainable business indices and their impact", *Journal of Business Ethics*, Vol. 76 No. 3, pp. 243-252.

Fransen, L. (2013), "The embeddedness of responsible business practice: exploring the interaction between national-institutional environments and corporate social responsibility", *Journal of Business Ethics*, Vol. 115 No. 2, pp. 213-227.

Freeman, I. and Hasnaoui, A. (2011), "The meaning of corporate social responsibility: the vision of four nations", *Journal of Business Ethics*, Vol. 100 No. 3, pp. 419-443.

Frias-Aceituno, J.V., Rodriguez-Ariza, L. and Garcia-Sánchez, I.M. (2013a), "Is integrated reporting determined by a country's legal system? An exploratory study", *Journal of Cleaner Production*, doi: 10.1016/j.jclepro.2012.12.006.

References

Frias-Aceituno, J.V., Rodriguez-Ariza, L. and Garcia-Sánchez, I.M. (2013b), "The role of the board in the dissemination of integrated corporate social reporting", *Corporate Social Responsibility and Environmental Management*, Vol. 20 No. 4, pp. 219–233.

Frias-Aceituno, J.V., Rodriguez-Ariza, L. and Garcia-Sánchez, I.M. (2012), "Explanatory factors of integrated sustainability and financial reporting", *Business Strategy and the Environment*, doi: 10.1002/bse.1765.

Fries, J., McCulloch, K. and Webster, W. (2010), "The Prince's accounting for sustainability project: creating 21st-century decision-making and reporting systems to respond to 21st-century challenges and opportunities", in Hopwood, A. Unerman, J. and Fries, J. (Eds), *Accounting for Sustainability: Practical Insights*, Routledge, pp. 29-45.

Fung, A., O'Rourke, D. and Sabel, C. (2001), *Can We Put an End to Sweatshops?*, Beacon Press, Boston.

Galaskiewicz, J. (1991), "Making corporate actors accountable: institution-building in Minneapolis-St. Paul" , In Powell, W.W. and DiMaggio, P.J. (Eds), *The New Institutionalism in Organizational Analysis*, University of Chicago Press, Chicago, pp. 293–310.

Garcia-Sánchez, I.M., Rodríguez-Ariza, L. and Frias-Aceituno, J.V. (2013), "The cultural system and integrated reporting", *International Business Review*, Vol. 22, pp. 828–838.

Gasperini, A., Doni, F. and Pavone, P. (2012), "The integrated report in the South African mining companies listed on the Johannesburg stock exchange (JSE): analysis of non-financial information and impacts on external disclosure", in EIASM 8th Interdisciplinary workshop on Intangibles, Intellectual Capital and extra financial information, Working Paper.

Gladstein, D.G. (1984), "Groups in context: a model of task group effectiveness", *Administrative Science Quarterly*, Vol. 29, pp. 499-517.

Gonzálbez, J.M. and Rodríguez, M.M. (2012), "XBRL and integrated reporting: the Spanish accounting association taxonomy approach", *The International Journal of Digital Accounting Research*, Vol. 12 No. 6, pp. 59-91.

Goodstein, J., Gautam, K. and Boeker, W. (1994), "The effects of board size and diversity on strategic change", *Strategic Management Journal*, Vol. 15 No. 3, pp. 241-250.

Gray, R.H. (2010), "Is accounting for sustainability actually accounting for sustainability… and how would we know? An exploration of narratives of organisations and the planet", *Accounting, Organizations and Society*, Vol. 35 No. 1, pp. 47-62.

Gray, R.H. and Bebbington, J. (2000), "Environmental accounting, managerialism and sustainability: is the planet safe in the hands of business and accounting?", *Advances in Environmental Accounting and Management*, Vol. 1 No. 1, pp. 1-44.

Gray, R.H. and Bebbington, J. (2007), "Corporate sustainability, accountability and the pursuit of the impossible dream", in Atkinson G., Dietz, S. and Neumayer, E. (Eds), *Handbook of Sustainable Development*, Edward Elgar Publishing, pp. 376-394.

Gray, R.H. and Milne, M.J. (2002), "Sustainability reporting: who's kidding whom?", *Chartered Accountants Journal of New Zealand*, pp. 66-70.

Grayson, D. and Hodges, A. (2004), *Corporate Social Opportunity*, Greenleaf, Sheffield.

Greenwood, M. (2007), "Stakeholder engagement: beyond the myth of corporate responsibility", *Journal of Business Ethics*, Vol. 74 No. 4, pp. 315-327.

GRI (2006), "GRI 3 guidelines", available at: https://www.globalreporting.org/resourcelibrary/G3-Guidelines-Incl-Technical-Protocol.pdf (accessed 13 March 2014).

GRI (2009), "GRI year in review 2009/2010", https://www.globalreporting.org/resourcelibrary/GRI-Year-in-Review-2009-2010.pdf (accessed 15 December 2014).

References

GRI (2010a), "Act amending the Danish financial statements act (Accounting for CSR in large businesses)", available at: https://www.globalreporting.org/information/policy/initiatives-worldwide/Pages/Denmark.aspx (accessed 13 July 2014).

GRI (2010b), "GRI sustainability report 2010/2011", https://www.globalreporting.org/resourcelibrary/GRI-Sustainability-Report-2010-2011.pdf (accessed 15 December 2014).

GRI (2011), "Global reporting initiative G3.1 sustainability reporting guidelines", available at: https://www.globalreporting.org/resourcelibrary/g3.1-guidelines-incl-technical-protocol.pdf (accessed 13 August 2013).

GRI (2013a), "Global reporting initiative G4 sustainability reporting guidelines", available at: https://www.globalreporting.org/resourcelibrary/GRIG4-Part1-Reporting-Principles-and-Standard-Disclosures.pdf (accessed 16 August 2013).

GRI (2013b), "The sustainability content of integrated reports: a survey of pioneers", available at: https://www.globalreporting.org/resourcelibrary/GRI-IR.pdf (accessed 29 May 2014).

Guay, T., Doh, J. and Sindair, G. (2004), "Non-governmental organizations, shareholder activism and socially responsible investments: ethical, strategic and governance implications", *Journal of Business Ethics*, Vol. 52, pp. 125–139.

Gujarati, D. and Porter, D. (2009), *Basic Econometrics*, McGraw Hill.

Gunningham, N. and Grabowsky P. (1998), *Smart Regulation: Designing Environmental Policy*, Clarendon Press, Oxford.

Guthrie, J. and Farneti, F. (2008), "GRI sustainability reporting by Australian public sector organizations", *Public Money and Management*, Vol. 28 No. 6, pp. 361-366.

Guthrie, J., Cuganesan, S. and Ward, L. (2008), "Industry specific social and environmental reporting: the Australian food and beverage industry", *Accounting Forum*, Vol. 32 No. 1, pp. 1-15.

Haberberg, A., Gander, J., Rieple, A., Martin-Castilla, J. and Helm, C. (2008), "Patterns in the adoption of corporate social responsibility practices", Corporate Responsibility Research Conference, University of Leeds.

Hackston, D. and Milne, M.J. (1996), "Some determinants of social and environmental disclosures in New Zealand companies", *Accounting, Auditing and Accountability Journal*, Vol. 9 No. 1, pp. 77-108.

Hahn, R. and Kühnen, M. (2013), "Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research", *Journal of Cleaner Production*, Vol. 59, pp. 5-21.

Haigh, M. and Jones, M.T. (2006), "The drivers of corporate social responsibility: a critical review", *The Business Review*, Vol. 5 No. 2, pp. 245-251.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1995), *Multivariate Data Analysis with Readings*, Prentice-Hall, New York.

Haji, A.A. (2013), "Corporate social responsibility disclosures over time: evidence from Malaysia", *Managerial Auditing Journal*, Vol. 28 No. 7, pp. 647-676.

Haller, A. and van Staden, C. (2014), "The value added statement−An appropriate instrument for integrated reporting", *Accounting, Auditing and Accountability Journal*, Vol. 27 No. 7, http://dx.doi.org/10.1108/AAAJ-04-2013-1307.

Hamilton, L. (2006), *Statistics with Stata: Updated for Version 9*, Curt Hinrichs, Canada.

Haniffa, R.M. and Cooke, T.E. (2002), "Culture, corporate governance and disclosure in Malaysian corporations", *Abacus*, Vol. 38 No. 3, pp. 317-349.

Haniffa, R.M. and Cooke, T.E. (2005), "The impact of culture and governance on corporate social reporting", *Journal of Accounting and Public Policy*, Vol. 24 No. 5, pp. 391-430.

References

Hannan, M.T. and Freeman J. (1977), "The population ecology of organizations", *American Journal of Sociology*, Vol. 82, pp. 929-64.

Harjoto, M.A. and Jo, H. (2011), "Corporate governance and CSR nexus", *Journal of Business Ethics*, Vol. 100 No. 1, pp. 45-67.

Hart, S.L. (1995), "A natural-resource-based view of the firm", *Academy of Management Review*, Vol. 20 No. 4, pp. 986-1014.

Hartman, L., Rubin R. and Dhanda K. (2007), "The communication of corporate social responsibility: United States and European Union multinational corporations", *Journal of Business Ethics*, Vol. 74 No. 4, pp. 373–389.

Haugh, H.M. and Talwar, A. (2010), "How do corporations embed sustainability across the organization?", *Academy of Management Learning and Education*, Vol. 9 No. 3, pp. 384-396.

Heckman, J.J. (1978), "Dummy endogenous variable in a simultaneous equation system", *Econometrica*, Vol. 46 No. 4, pp. 931-959.

Heckman, J.J. (1979), "Sample selection bias as a specification error", *Econometrica: Journal of the econometric society*, Vol. 47 No. 1, pp. 153-161.

Hedberg, C.J. and von Malmborg, F. (2003), "The global reporting initiative and corporate sustainability reporting in Swedish companies", *Corporate Social Responsibility and Environmental Management*, Vol. 10 No. 3, pp. 153–164.

Higgins, C., Stubbs, W. and Love, T. (2014), "Walking the talk(s): organisational narratives of integrated reporting", *Accounting, Auditing and Accountability Journal*, Vol. 27 No. 7, http://dx.doi.org/10.1108/AAAJ-04-2013-1303.

Hillman, A.J., Cannella, A.A. and Harris, I.C. (2002), "Women and racial minorities in the boardroom: how do directors differ?", *Journal of Management*, Vol. 28, pp. 747–763.

Hillman, A.J., Cannella, A.A. and Paetzold, R.I. (2000), "The resource dependence role of corporate directors: strategic adaptation of board composition in response to environmental change", *Journal of Management Studies*, Vol. 37, pp. 235–255.

Hoffman, A.J. (1999), "Institutional evolution and change: environmentalism and the US chemical industry", *Academy of Management Journal*, Vol. 42 No. 4, pp. 351-371.

Hofstede, G.H. (2001), *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations across Nations*, Sage Publications, Thousand Oaks.

Hopwood, A., Unerman, J. and Fries, J. (2010a), "Introduction to the accounting for sustainability case studies", in Hopwood, A. Unerman, J. and Fries, J. (Eds), *Accounting for Sustainability: Practical Insights*, Routledge, pp. 1-28.

Hopwood, A., Unerman, J. and Fries, J. (2010b), *Accounting for Sustainability: Practical Insights*, Routledge.

Hosmer, D.W., Taber, S. and Lemeshow, S. (1991), "The importance of assessing the fit of logistic regression models: a case study", *American Journal of Public Health*, Vol. 81 No. 12, pp. 1630-1635.

Howard-Grenville, J.A. (2006), ""Inside the "black box": how organizational culture and subcultures inform interpretations and actions on environmental issues", *Organization and Environment*, Vol. 19 No. 1, pp. 46-73.

Hsu, A., Johnson, L.A. and Lloyd, A. (2013), "Measuring progress: a practical guide from the developers of the environmental performance index (EPI)", Yale Center for Environmental Law and Policy, New Haven, available at: http://epi.yale.edu/files/ycelp_measuring_progress_manual.pdf (accessed 20 April 2014).

Humphrey, C., O'Dwyer, B. and Unerman, J. (2014), "The rise of integrated reporting: understanding attempts to institutionalize a new reporting framework", 26th CSEAR Conference, University of St Andrews.

References

Humphreys, A. (2010), "Megamarketing: the creation of markets as a social process", *Journal of Marketing*, Vol. 74 No. 2, pp. 1–19.

Huse, M. (2007), *Boards, Governance and Value Creation: the Human Side of Corporate Governance*, Cambridge University Press, Cambridge, UK.

Huse, M. and Solberg, A.G. (2006), "Gender-related boardroom dynamics: how Scandinavian women make and can make contributions on corporate boards", *Women in Management Review*, Vol. 21 No. 2, pp. 113-130.

Huse, M., Nielsen, S.T. and Hagen, I.M. (2009), "Women and employee-elected board members, and their contributions to board control tasks", *Journal of Business Ethics*, Vol. 89 No. 4, pp. 581-597.

Hussainey, K. and Walker, M. (2009), "The effects of voluntary disclosure and dividend propensity on prices leading earnings", *Accounting and Business Research*, Vol. 39 No. 1, pp. 37-55.

Husted, B.W. and Allen, D.B. (2006), "Corporate social responsibility in the multinational enterprise: strategic and institutional approaches", *Journal of International Business Studies*, Vol. 37, pp. 838-849.

Ibrahim, N.A. and Angelidis, J.P. (1995), "The corporate social responsiveness orientation of board members: are there differences between inside and outside directors?", *Journal of Business Ethics*, Vol. 14, pp. 405-410.

ICB (2012), "Industry classification benchmark brochure", available at: http://www.icbenchmark.com/ICBDocs/FTSE_ICB_Corporate_Brochure.pdf (accessed 10 May 2012).

IFAC (2006), "IFAC consultation paper explores assurance aspects of proposed sustainability reporting guidelines", available at: http://www.ifac.org/news-events/2006-02/ifac-consultation-paper-explores-assurance-aspects-proposed-sustainability-repor http://www.iasplus.com/en/binary/ifac/0602g3assurance.pdf (accessed 13 July 2014).

IFAC (2011), "Sustainability framework 2.0: professional accountants as integrators", available at: http://viewer.zmags.com/publication/052263e2#/052263e2/1 (accessed 18 February 2012).

IFAC (2012), "Global sustainability and growth: recommendations for the G-20 leaders' summit", available at: http://www.ifac.org/sites/default/files/publications/files/Global%20Sustainability%20and%20Growth%20Recommendations%20for%20the%20G-20%20Leadersa%20Summit.pdf (accessed 12 July 2014).

IFAC (2013), "IFAC welcomes release of international integrated reporting framework", Available at: http://www.ifac.org/news-events/2013-12/ifac-welcomes-release-international-integrated-reporting-framework (accessed 13 July 2014).

IIRC (2010), "Formation of the international integrated reporting committee (IIRC)", available at: http://www.theiirc.org/wp-content/uploads/2011/03/Press-Release1.pdf (accessed 14 January 2013).

IIRC (2011), "Towards integrated reporting: communicating value in the 21st century", available at: http://theiirc.org/wp-content/uploads/2011/09/IR-Discussion-Paper-2011_single.pdf (accessed 01 March 2013).

IIRC (2012), "Capturing the experiences of global businesses and investors, the pilot programme 2012 yearbook", available at: http://www.theiirc.org/wp-content/uploads/Yearbook_2012/sources/projet/THE-PILOT-PROGRAMME-2012-YEARBOOK.pdf (accessed 01 May 2013).

IIRC (2013a), "Consultation draft of the international <IR> framework", available at: http://www.theiirc.org/wp-content/uploads/Consultation-Draft/Consultation-Draft-of-the-InternationalIRFramework.pdf (accessed 10 May 2013).

References

IIRC (2013b), "The international integrated reporting framework", available at http://www.theiirc.org/wp-content/uploads/2013/12/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf (accessed 07 June 2014).

IIRC (2013c), "IIRC pilot programme yearbook 2013: business and investors explore the sustainability perspective", available at: http://www.theiirc.org/wp-content/uploads/2013/12/IIRC-PP-Yearbook-2013_PDF4_PAGES.pdf (accessed 15 June 2014).

Inditex (2010), "Inditex 2010 annual report", http://www.inditex.com/documents/10279/18789/Grupo_INDITEX_Annual_Report_INDITEX_10.pdf/6a118e14-c3bc-4b48-a6f4-cd41c00c9cd8 (accessed 07 June 2014).

Islam, M.A. and Deegan, C. (2008), "Motivations for an organisation within a developing country to report social responsibility information: evidence from Bangladesh", *Accounting, Auditing and Accountability Journal*, Vol. 21 No. 6, pp. 850-874.

Jackson, G. and Apostolakou, A. (2010), "Corporate social responsibility in Western Europe: an institutional mirror or substitute?", *Journal of Business Ethics*, Vol. 94 No. 3, pp. 371-394.

Jamali, D. (2010), "MNCs and international accountability standards through an institutional lens: evidence of symbolic conformity or decoupling", *Journal of Business Ethics*, Vol. 95 No. 4, pp. 617–640.

Jamali, D. and Keshishian, T. (2009), "Uneasy alliances: lessons learned from partnerships between businesses and NGOs in the context of CSR", *Journal of Business Ethics*, Vol. 84 No. 2, pp. 277-295.

Jamali, D., Safieddine, A.M. and Rabbath, M. (2008), "Corporate governance and corporate social responsibility synergies and interrelationships", *Corporate Governance: An International Review*, Vol. 16 No. 5, pp. 443-459.

Jenkins, S.P. (1995), "Easy estimation methods for discrete-time duration models", *Oxford Bulletin Economics Statists*, Vol. 57, pp. 129–138.

Jennings, P.D. and Zanderbergen, P.A. (1995), "Ecologically sustainable organisations: an institutional approach", *Academy of Management Review*, Vol. 20 No. 4, pp. 1015–1052.

Jensen, J.C. and Berg, N. (2012), "Determinants of traditional sustainability reporting versus integrated reporting: an institutionalist approach", *Business Strategy and the Environment*, Vol. 21 No. 5, pp. 299-316.

Jeurissen, R. (2004), "Institutional conditions of corporate citizenship", *Journal of Business Ethics*, Vol. 53 No.1-2, pp. 87-96.

Jeyaretnam, T.L. and Niblock-Siddle, K. (2010), "Integrated reporting: a perspective from net balance", in Eccles, R.G., Cheng, B. and Saltzman, D. (Eds), *The Landscape of Integrated Reporting Reflections and Next Steps*, Harvard Business School e-book, pp. 33-37, available at: http://hbswk.hbs.edu/pdf/The_Landscape_of_Integrated_Reporting.pdf (accessed 08 May 2013).

Jizi, M.I., Salama, A., Dixon, R. and Stratling, R. (2013), "Corporate governance and corporate social responsibility disclosure: evidence from the US banking sector", *Journal of Business Ethics*, pp. 1-15, DOI 10.1007/s10551-013-1929-2.

John, K. and Senbet, L.W. (1998), "Corporate governance and board effectiveness", *Journal of Banking and Finance*, Vol. 22, pp. 371−403.

Johnson, G., Melin, L. and Whittington, R. (2003), "Guest editors' introduction", *Journal of Management Studies*, Vol. 40 No. 1, pp. 3-22.

References

Johnson, R.A. and Greening, D.W. (1999), "The effects of corporate governance and institutional ownership types on corporate social performance", *Academy of Management Journal*, Vol. 42 No. 5, pp. 564-576.

Johnson, R.B. and Onwuegbuzie, A.J. (2004), "Mixed methods research: a research paradigm whose time has come", *Educational Researcher*, Vol. 33 No. 7, pp. 14-26.

Jones, M. and Slack R.E. (2012), "The future of financial reporting 2011: global crisis and accounting at a crossroads", Discussion Paper, Association of Certified Chartered Accountants, London, available at: http://www.baa.ac.uk/group/assets/files/FAR%20SIG/Symposium%202011.pdf (accessed 21 July 2014).

Jones, M.J. and Solomon J.F. (2010), "Social and environmental report assurance: some interview evidence", *Accounting Forum*, Vol. 34, pp. 20–31.

Jones, M.T. (1999), "The institutional determinants of social responsibility", *Journal of Business Ethics*, Vol. 20 No. 2, pp. 163–179.

Judge, G., Hill, R.C., Griffiths, W.E., Lutkepohl, H. and Lee, T.C. (1980), *Introduction to the Theory and Practice of Econometrics*, John Wiley and Sons, New York.

Juerissen, R. (2004), "Institutional conditions of corporate citizenship", *Journal of Business Ethics*, Vol. 53, pp. 87-96.

Jungmann, C. (2006), "The effectiveness of corporate governance in one-tier and two-tier board systems–evidence from the UK and Germany", *European Company and Financial Law Review*, Vol. 3 No. 4, pp. 426-474.

Kagan, R.A., Gunningham, N. and Thornton, D. (2003), "Explaining corporate environmental performance: how does regulation matter?", *Law and Society Review*, Vol. 37 No. 1, pp. 51-90.

Kanzer, A.M. (2010), "Toward a model for sustainable capital allocation", in Eccles, R.G., Cheng, B. and Saltzman, D. (Eds), *The Landscape of Integrated Reporting Reflections and Next Steps*, Harvard Business School e-book, pp. 45-57, available at: http://hbswk.hbs.edu/pdf/The_Landscape_of_Integrated_Reporting.pdf (accessed 08 May 2013).

Keck, M. and Sikkink, K. (1998), *Activists Beyond Borders: Advocacy Networks in International Relations*, Cornell University Press, Ithaca, New York.

Kesner, I.F. (1988), "Directors' characteristics and committee membership: an investigation of type, occupation, tenure, and gender", *Academy of Management Journal*, Vol. 31, pp. 66-84.

Kesner, I.F., Victor, B. and Lamont, B.T. (1986), "Research notes: board composition and the commission of illegal acts: an investigation of fortune 500 companies", *Academy of Management Journal*, Vol. 29 No. 4, pp. 789-799.

Kim, C.H., Amaeshi, K., Harris, S. and Suh, C.J. (2013), "CSR and the national institutional context: the case of South Korea", *Journal of Business Research*, Vol. 66 No. 12, pp. 2581-2591.

Kim, J.B., Simunic, D.A., Stein, M.T. and Yi, C.H. (2011), "Voluntary audits and the cost of debt capital for privately held firms: Korean evidence", *Contemporary Accounting Research*, Vol. 28 No. 2, pp. 585-615.

Kim, K., Mauldin, E. and Patro, S. (2014), "Outside directors and board advising and monitoring performance", *Journal of Accounting and Economics*, Vol. 57 No. 2, pp. 110-131.

Kim, Y., Park, M.S. and Wier, B. (2012), "Is earnings quality associated with corporate social responsibility?", *The Accounting Review*, Vol. 87 No. 3, pp. 761–796.

King III (2009), "The King III Code on Governance", available at: http://c.ymcdn.com/sites/www.iodsa.co.za/resource/collection/94445006-4F18-4335-

References

     [B7FB-](#)
[7F5A8B23FB3F/King_Code_of_Governance_for_SA_2009_Updated_June_2012.pdf](#)
(accessed 12 December 2014).

Kolk, A. (2005), "Corporate social responsibility in the coffee sector: the dynamics of MNC responses and code development", *European Management Journal*, Vol. 23 No. 2, pp. 228-236.

Kolk, A. and Perego, P. (2010), "Determinants of the adoption of sustainability assurance statements: an international investigation", *Business Strategy and the Environment*, Vol. 19, pp. 182–198.

Kostova, T. and Roth, K. (2002), "Adoption of an organizational practice by subsidiaries of multinational corporations: institutional and relational effects", *Academy of Management Journal*, Vol. 45 No. 1, pp. 215-233.

KPMG (2011a), "Integrated reporting: performance insights through better business reporting", available at: [http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/road-to-integrated-reporting.pdf](#) (accessed 12 January 2013).

KPMG (2011b), "KPMG international survey of corporate responsibility reporting 2011", available at: [http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/corporate-responsibility/Documents/2011-survey.pdf](#) (accessed 30 May 2014).

Kraft, K.L. and Singhapakdi, A. (1995), "The relative importance of social responsibility in determining organizational effectiveness: student responses", *Journal of Business Ethics*, Vol. 14, pp. 315-326.

Kreft, I. and De Leeuw, J. (1998), *Introducing Multilevel Modelling*, Sage, London.

Krippendorff, K. (1980), *Content Analysis: an Introduction to its Methodology*, Sage Publications, Beverly Hills, California.

Krivogorsky, V. (2006), "Ownership, board structure, and performance in continental Europe", *The International Journal of Accounting*, Vol. 41 No. 2, pp. 176-197.

La Porta, R., Lopez-de-Silanes, F., Pop-Eleches, C. and Shleifer. A. (2004), "Judicial checks and balances", *Journal of Political Economy*, Vol. 112 No. 2, pp. 445-470.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1999), "The quality of government", *Journal of Law, Economics, and Organization*, Vol. 15 No. 1, pp. 222-279.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1998), "Law and finance", *Journal of Political Economy,* Vol. 106 No. 6, pp. 1113-1155.

Lacy, P., Cooper, T., Hayward, R. and Neuberger, L. (2010), "A new era of sustainability: UN Global Compact-Accenture CEO Study 2010", available at: [http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture_A_New_Era_of_Sustainability_CEO_Study.pdf](#) (accessed 29 May 2014).

Lai, A., Melloni, G. and Stacchezzini, R. (2014), "Why do companies adopt an integrated report? First insights into a legitimacy theory explanation", Working paper, [http://frworkshop.com/roma/download-papers/38.pdf](#) (accessed 07 May 2014).

Lamberton, G. (2005), "Sustainability accounting: a brief history and conceptual framework", *Accounting Forum*, Vol. 29 No. 1, pp. 7-26.

Landsman, W.R. and Maydew, E.L. (2002), "Has the information content of quarterly earnings announcements declined in the past three decades?", *Journal of Accounting Research*, Vol. 40 No. 3, pp. 797-808.

Läpple, D. and Rensburg, T.V. (2011), "Adoption of organic farming: are there differences between early and late adoption?", *Ecological Economics*, Vol. 70 No. 7, pp. 1406-1414.

Larcker, D.F. and Rusticus, T.O. (2010), "On the use of instrumental variables in accounting research", *Journal of Accounting and Economics*, Vol. 49 No. 2, pp. 186–205.

Larson, M.S. (1977), *The Rise of Professionalism: A Sociological Analysis*, University of California Press, Berkeley.

Lawrence, T.B., Hardy, C. and Phillips, N. (2002), "Institutional effects of interorganizational collaboration: the emergence of proto-institutions", *Academy of Management Journal*, Vol. 45 No. 1, pp. 281-290.

Lee, C.I. (2001), "Finite sample bias in IV estimation of intertemporal labor supply models: is the intertemporal substitution elasticity really small?", *Review of Economics and Statistics*, Vol. 83 No. 4, pp. 638-646.

Lee, M.D.P. (2008), "A review of the theories of corporate social responsibility: its evolutionary path and the road ahead", *International Journal of Management Reviews*, Vol. 10 No. 1, pp. 53-73.

Legendre, S. and Coderre, F. (2013), "Determinants of GRI G3 application levels: the case of the fortune global 500", *Corporate Social Responsibility and Environmental Management*, Vol. 20 No. 3, pp. 182-192.

Levy, D.L. and Kaplan R. (2008), "CSR and theories of global governance: strategic contestation in global issue arenas", in Crane, A., McWilliams, A., Matten, D., Moon, J. and Siegel, D. (Eds), *Oxford Handbook of Corporate Social Responsibility*, Oxford University Press, Oxford, pp. 432-451.

Levy, D.L., Brown, H.S. and de Jong, M. (2010), "The contested politics of corporate governance: the case of the global reporting initiative", *Business and Society*, Vol. 49 No. 1, pp. 88–115.

Lin, T.T., Lee, C.C. and Chiu, T.F. (2009), "Application of DEA in analyzing a bank's operating performance", *Expert Systems with Applications*, Vol. 36 No.5, pp. 8883-8891.

Linnenluecke, M.K. and Griffiths, A. (2010), "Corporate sustainability and organizational culture", *Journal of World Business*, Vol. 45 No. 4, pp. 357-366.

Linsley, P.M. and Shrives, P.J. (2006), "Risk reporting: a study of risk disclosures in the annual reports of UK companies", *The British Accounting Review*, Vol. 38 No. 4, pp. 387-404.

Lodhia, S. (2014), "Exploring the transition to integrated reporting through a practice lens: an Australian customer owned bank perspective", *Journal of Business Ethics*, pp. 1-14, DOI: 10.1007/s10551-014-2194-8.

Lodhia, S. and Martin, N. (2012), "Revisiting a corporate sustainability framework in an integrated reporting era: a diversified resources firm perspective", in Proceedings of the RMIT accounting for sustainability conference, Melbourne, Australia, working paper.

Long, B.S. and Driscoll, C. (2008), "Codes of ethics and the pursuit of organizational legitimacy: theoretical and empirical contributions", *Journal of Business Ethics*, Vol. 77 No. 2, pp. 173-189.

Long, J.S. (1997), *Regression Models for Categorical and Limited Dependent Variables*, SAGE Publications, Incorporated.

Lopez, M.V., Garcia, A. and Rodriguez, L. (2007), "Sustainable development and corporate performance: a study based on the Dow Jones Sustainability Index", *Journal of Business Ethics*, Vol. 75 No. 3, pp. 285-300.

Lourenço, I.C., Callen, J.L., Branco, M.C. and Curto, J.D. (2014), "The value relevance of reputation for sustainability leadership", *Journal of Business Ethics*, Vol. 119 No. 1, pp. 17-28.

References

Lowe, A. and Locke, J. (2005), "Perceptions of journal quality and research paradigm: results of a web-based survey of British accounting academics", *Accounting, Organizations and Society*, Vol. 30 No. 1, pp. 81-98.

Lozano, R. (2012), "Towards better embedding sustainability into companies' systems: an analysis of voluntary corporate initiatives", *Journal of Cleaner Production*, Vol. 25, pp. 14-26.

Lozano, R. and Huisingh, D. (2011), "Inter-linking issues and dimensions in sustainability reporting", *Journal of Cleaner Production*, Vol. 19 No. 2, pp. 99-107.

Luo, X. and Bhattacharya, C.B. (2006), "Corporate social responsibility, customer satisfaction, and market value", *Journal of Marketing*, Vol. 70 No. 4, pp. 1-18.

Maak, T. (2007), "Responsible leadership, stakeholder engagement, and the emergence of social capital", *Journal of Business Ethics*, Vol. 74 No. 4, pp. 329-343.

Maassen, G. and Van Den Bosch, F. (1999), "On the supposed independence of two-tier boards: formal structure and reality in the Netherlands", *Corporate Governance: An International Review*, Vol. 7 No. 1, pp. 31-37.

Mace, M. (1971), *Directors: Myth and Reality*, Harvard University Press.

Mahajan, V., Müller, E. and Wind, Y. (2000), *New-Product Diffusion Models*, Kluwer Academic Press, Boston.

Mallin, C., Michelon, G. and Raggi, D. (2013), "Monitoring intensity and stakeholders' orientation: how does governance affect social and environmental disclosure?", *Journal of Business Ethics*, Vol. 114 No. 1, pp. 29-43.

Malmi, T. (1999), "Activity-based costing diffusion across organizations: an exploratory empirical analysis of Finnish firms", *Accounting, Organizations and Society*, Vol. 24 No. 8, pp. 649-672.

Marquis, C. (2003), "The pressure of the past: network imprinting in inter-corporate communities", *Administrative Science Quarterly*, Vol. 48, pp. 655–689.

Marquis, C., Glynn, M.A. and Davis, G.F. (2007), "Community isomorphism and corporate social action", *Academy of Management Review*, Vol. 32 No. 3, pp. 925-945.

Marston, C.L. and Shrives, P.J. (1991), "The use of disclosure indices in accounting research: a review article", *The British Accounting Review*, Vol. 23 No. 3, pp. 195–210.

Mason, R.O. and Mitroff I.I. (1981), *Challenging Strategic Planning Assumptions: Theory, Cases, and Techniques*, John Wiley & Sons, New York.

Matten, D. and Moon, J. (2008), ""Implicit" and "explicit" CSR: a conceptual framework for a comparative understanding of corporate social responsibility", *Academy of Management Review*, Vol. 33 No. 2, pp. 404-424.

Merafe Resources (2010), "Merafe Resources annual report 2010", available at: http://www.meraferesources.co.za/pdf/reports/2010/ar_2010.pdf (accessed 07 June 2014).

Merkl-Davies, D.M. and Brennan, N.M. (2007), "Discretionary disclosure strategies in corporate narratives: incremental information or impression management?", *Journal of Accounting Literature*, Vol. 26, pp. 116–194.

Meyer, J.W. and Rowan, B. (1977), "Institutionalized organizations: formal structure as myth and ceremony", *American Journal of Sociology*, Vol. 83 No. 2, pp. 340-363.

Meyer, J.W. and Scott, W.R. (1983), *Organizational Environments: Ritual and Rationality*, Sage, Beverly Hills.

Meyer, J.W., Boli, J., Thomas, G.M. and Ramirez, F.O. (1997), "World society and the nation-state", *American Journal of Sociology*, Vol. 103 No. 1, pp. 144-181.

Meyskens, M. and Paul, K. (2010), "The evolution of corporate social reporting practices in Mexico", *Journal of Business Ethics*, Vol. 91 No. 2, pp. 211-227.

Michelon, G. and Parbonetti, A. (2012), "The effect of corporate governance on sustainability disclosure", *Journal of Management and Governance*, Vol. 16 No. 3, pp. 477-509.

Milne, M.J., Kearins, K. and Walton, S. (2006), "Creating adventures in wonderland: the journey metaphor and environmental sustainability", *Organization*, Vol. 13 No. 6, pp. 801-839.

Mirvis, P. (2012), "Employee engagement and CSR: transactional, relational, and developmental approaches", *California Management Review*, Vol. 54 No. 4, pp. 93-117.

Mirvis, P. and Googins, B. (2006), "Stages of corporate citizenship: a developmental framework", *California Management Review*, Vol. 48 No. 2, pp. 104-126.

Mohd Ghazali, N.A. and Weetman, P. (2006), "Perpetuating traditional influences: voluntary disclosure in Malaysia following the economic crisis", *Journal of International Accounting, Auditing and Taxation*, Vol. 15 No. 2, pp. 226-248.

MOL (2010), "MOL integrated annual report 2010", available at: http://ir.mol.hu/sites/default/files/en/down2/Annual_Reports/Book_mar10_ENG_2011 0504.pdf (accessed 07 June 2014).

Moneva, J.M., Archel, P. and Correa, C. (2006), "GRI and the camouflaging of corporate unsustainability", *Accounting forum*, Vol. 30 No. 2, pp. 121-137.

Montiel, I. and Husted, B.W. (2009), "The adoption of voluntary environmental management programs in Mexico: first movers as institutional entrepreneurs", *Journal of Business Ethics*, Vol. 88 No. 2, pp. 349-363.

Moon, J. and Vogel, D. (2008) "Corporate social responsibility, government, and civil society," in Crane, A., McWilliams, A., Matten, D., Moon, J. and Siegel, D. (Eds), *Oxford Handbook of Corporate Social Responsibility*, Oxford University Press, Oxford, pp. 303-323.

Muthuri, J.N. and Gilbert, V. (2011), "An institutional analysis of corporate social responsibility in Kenya", *Journal of Business Ethics*, Vol. 98 No. 3, pp. 467-483.

Natura (2010), "Natura report 2010", available at: http://natura.infoinvest.com.br/enu/3766/GRI_INGLES_COMPLETO_impressao.pdf (accessed 07 June 2014).

Natura (2012), "Natura report 2012", available at: http://natura.infoinvest.com.br/enu/4381/RA_NATURA_2012_ENG_Final.pdf (accessed 14 April 2014).

NBS (2010), "Embedding sustainability in organizational culture", available at: http://nbs.net/wp-content/uploads/dec6_embedding_sustainability.pdf (accessed 20 February 2012).

Neter, J., Wasserman, W. and Kutner, M.H. (1990), *Applied Linear Statistical Models: Regression, Analysis of Variance, and Experimental Designs*, Third Edition, Irwin, Homewood.

Neu, D., Warsame, H. and Pedwell, K. (1998), "Managing public impressions: environmental disclosures in annual reports", *Accounting, Organizations and Society*, Vol. 23 No. 3, pp. 265-282.

Nikolaev, V. and Van Lent, L. (2005), "The endogeneity bias in the relation between cost-of-debt capital and corporate disclosure policy", *European Accounting Review*, Vol. 14 No. 4, pp. 677-724.

Nikolaeva, R. and Bicho, M. (2011), "The role of institutional and reputational factors in the voluntary adoption of corporate social responsibility reporting standards", *Journal of the Academy of Marketing Science*, Vol. 39 No 1, pp. 136-157.

NovaGold (2010), "NovaGold integrated report 2010", available at: http://www.novagold.com/upload/investor_info/2011/NG_IR_2010_Web.pdf (accessed 07 June 2014).

Novo Nordisk (2000), "Novo Nordisk annual report 2000", available at: http://www.novonordisk.com/investors/download-centre/reports/english.pdf (accessed 12 July 2014).

Novo Nordisk (2010), "Novo Nordisk annual report 2010", available at: http://annualreport2010.novonordisk.com/web-media/pdfs/Novo-Nordisk-AR-2010-en.pdf (accessed 30 April 2014).

Novo Nordisk (2011a), "Novo Nordisk supports global dialogue on integrated reporting", available at: http://www.novonordisk.com/sustainability/news/2011-09-Novo-Nordisk-supports-global-dialogue-on-integrated-reporting.asp (accessed 02 June 2013).

Novo Nordisk (2011b), "Novo Nordisk on integrated reporting", available at: http://www.novonordisk.com/images/Sustainability/PDFs/NN_GRI_QnA_.pdf (accessed 14 April 2014).

Novo Nordisk (2012), "20 years in the business of sustainability", available at: http://www.novonordisk.com/images/Sustainability/PDFs/20-years-anniversary.pdf (accessed 27 June 2013).

O'Brien, R.M. (2007), "A caution regarding rules of thumb for variance inflation factors", *Quality and Quantity*, Vol. 41 No. 5, pp. 673-690.

O'Dwyer, B. and Owen, D.L. (2007), "Seeking stakeholder-centric sustainability assurance: an examination of recent sustainability practice", *Journal of Corporate Citizenship*, Vol. 25, pp. 77–94.

O'Dwyer, B. and Owen, D.L. (2005), "Assurance statement practice in environmental, social and sustainability reporting: a critical evaluation", *The British Accounting Review*, Vol. 37 No. 2, pp. 205-229.

Oliver, C. (1991), "Strategic responses to institutional processes", *Academy of Management Review*, Vol. 16 No. 1, pp. 145-179.

Oliver, R.L. (1996), *Satisfaction: a Behavioral Perspective on the Consumer*, McGraw-Hill, London.

Olson, M. (1982), *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*, Yale University Press, New Haven, CT.

O'Reilly, C.A., Caldwell, D.F. and Barnett, W.P. (1989), "Work group demography, social integration, and turnover", *Administrative Science Quarterly*, Vol. 34 No. 1, pp. 21-37.

Outokumpu (2010), "Outokumpu annual report 2010", available at: http://www.outokumpu.com/SiteCollectionDocuments/Annual%20Report%202010.pdf (accessed 07 June 14).

Owen, D.L., Swift, T. and Hunt, K. (2001), "Questioning the role of stakeholder engagement in social and ethical accounting, auditing and reporting", *Accounting Forum*, Vol. 25 No. 3, pp. 264-282.

Owen, G. (2013), "Integrated reporting: a review of developments and their implications for the accounting curriculum", *Accounting Education*, Vol. 22 No. 4, pp. 340-356.

Paine, L.S. (2014), "Sustainability in the boardroom", *Harvard Business Review*, Vol. 92 No. 7, pp. 86-95.

Palenberg, M., Reinicke, W. and Witte, J.M. (2006), *Trends in Non-Financial Reporting*, GPPI/UNEP, Berlin.

Patig, S., Casanova-Brito, V. and Vögeli, B. (2010), "IT requirements of business process management in practice–an empirical study", in Hull, R., Mendling, J., Tai, S. (Eds), *Business Process Management*, *Lecture Notes in Computer Science*, Vol. 6336, Springer, Hoboken, New Jersey, pp. 13–28.

Patten, D.M. (1991), "Exposure, legitimacy, and social disclosure", *Journal of Accounting and Public Policy*, Vol. 10, pp. 297-308.

Patten, D.M. (2002), "The relation between environmental performance and environmental disclosure: a research note", *Accounting, Organizations and Society*, Vol. 27 No. 8, pp. 763-773.

Paul, K., Cobas, E., Ceron, R., Frithiof, M., Maass, A., Navarro, I., Palmer, L., Serrano, L. and Deaton, L.Z. (2006), "Corporate social reporting in Mexico", *Journal of Corporate Citizenship*, Vol. 22, pp. 67–80.

Pearce, J. and Zahra S. (1992), "Board composition from a strategic contingency perspective", *Journal of Management Studies*, Vol. 29, pp. 411-438.

Peel, M.J. (2014), "Addressing unobserved endogeneity bias in accounting studies: control and sensitivity methods by variable type", *Accounting and Business Research*, Vol. 44 No. 5, pp. 545–571.

Peng, C.Y.J., Lee, K.L. and Ingersoll, G.M. (2002), "An introduction to logistic regression analysis and reporting", *The Journal of Educational Research*, Vol. 96 No. 1, pp. 3-14.

Peng, G.Z. and Beamish, P.W. (2008), "The effect of national corporate responsibility environment on Japanese foreign direct investment", *Journal of Business Ethics*, Vol. 80 No. 4, pp. 677-695.

Perego, P. and Kolk, A. (2012), "Multinationals' accountability on sustainability: the evolution of third-party assurance of sustainability reports", *Journal of Business Ethics*, Vol. 110 No. 2, pp. 173-190.

Perez-Batres, L.A., Miller, V.V. and Pisani, M.J. (2011), "Institutionalizing sustainability: an empirical study of corporate registration and commitment to the United Nations global compact guidelines", *Journal of Cleaner Production*, Vol. 19 No. 8, pp. 843–851.

Peterson, C.A. and Philpot, J. (2007), "Women's roles on US fortune 500 boards: director expertise and committee memberships", *Journal of Business Ethics*, Vol. 72 No. 2, pp. 177-196.

Pevalin, D. and Robson K. (2012), *The Stata Survival Manual*, Open University Press, Maidenhead.

Pfeffer, J. (1973), "Size, composition and function of hospital boards of directors: a study of organization-environment linkage", *Administrative Science Quarterly*, Vol. 18, pp. 349-364.

Pfeffer, J. (1992), "Size and composition of corporate boards of directors: the organization and its environment", *Administrative Science Quarterly*, Vol. 17, pp. 218-228.

Pfeffer, J. and Salancik, G.R. (1978), *The External Control of Organizations: a Resource Dependence Perspective*, Harper and Rob Publishers, New York.

Philips (2010), "Philips annual report 2010", available at: http://www.philips.com/shared/assets/Investor_relations/pdf/Annual_Report_English_2010.pdf (accessed 07 June 2014).

Porter, M.E. and Kramer, M.R. (2006), "The link between competitive advantage and corporate social responsibility", *Harvard Business Review*, Vol. 84 No. 12, pp. 78-93.

Porter, M.E. and Kramer, M.R. (2002), "The competitive advantage of corporate philanthropy", *Harvard Business Review*, Vol. 80 No. 12, pp. 56-68.

Post, C., Rahman, N. and Rubow, E. (2011), "Green governance: boards of directors' composition and environmental corporate social responsibility", *Business and Society*, Vol. 50 No. 1, pp. 189-223.

Post, J.E., Preston, L.E. and Sachs, S. (2002), *Redefining the Corporation, Stakeholder Management and Organizational Wealth*, Stanford University Press, Stanford, CT.

Powell, W.W. and DiMaggio, P.J. (1991), *The New Institutionalism in Organizational Analysis*, The University of Chicago Press, Chicago.

References

Pregibon, D. (1981), "Logistic regression diagnostics", *Annals of Statistics*, Vol. 9 No. 4, pp. 705–724.

PUMA (2010), "PUMA annual report 2010", available at: http://ir2.flife.de/data/puma/igb_html/index.php?bericht_id=1000004&index=&lang=ENG (accessed 07 June 2014).

PWC (2010), "Insight or fatigue? FTSE 350 reporting", available at: http://www.pwc.com/en_GX/gx/corporate-reporting/assets/cr_ftse350.pdf (accessed 10 January 2013).

Raheja, C.G. (2005), "Determinants of board size and composition: a theory of corporate boards", *Journal of Financial and Quantitative Analysis*, Vol. 40 No. 2, pp. 283-306.

Rao, K.K., Tilt, C.A. and Lester, L.H. (2012), "Corporate governance and environmental reporting: an Australian study", *Corporate Governance*, Vol. 12 No. 2, pp. 143-163.

Ratzinger-Sakel, N.V. (2013), "Auditor fees and auditor independence-evidence from going concern reporting decisions in Germany", *Auditing: a Journal of Practice and Theory*, Vol. 32 No. 4, pp. 129-168.

Rautaruukki (2010), "Rautaruukki report 2010", available at: http://www.ruukki.com/~/media/Files/Investors/Annual%20reports/2010/Rautaruukki-Annual-report-2010.ashx (accessed 07 June 2014).

Reverte, C. (2009), "Determinants of corporate social responsibility disclosure ratings by Spanish listed firms", *Journal of Business Ethics*, Vol. 88 No. 2, pp. 351-366.

Ricart, J.E., Rodríguez, M.Á. and Sánchez, P. (2005), "Sustainability in the boardroom: an empirical examination of Dow Jones Sustainability World Index leaders", *Corporate Governance*, Vol. 5 No. 3, pp. 24-41.

Roberts, J. (1996), "From discipline to dialogue: individualizing and socializing forms of accountability", in Munro R. and Mouritsen J. (Eds), *Accountability: Power, Ethos and the Technologies of Managing*, International Thomson, London, pp. 40-61.

Roberts, J. (2003), "The manufacture of corporate social responsibility: constructing corporate sensibility", *Organization*, Vol. 10 No. 2, pp. 249–265.

Roberts, J., McNulty, T. and Stiles, P. (2005), "Beyond agency conceptions of the work of the non-executive director: creating accountability in the boardroom", *British Journal of Management*, Vol. 16 No. S1, pp. S5-S26.

Roche (2010), "Roche Holding 2010 annual report", available at: http://www.roche.com/gb10e.pdf (accessed 07 June 2014).

Rodrigue, M., Magnan, M. and Cho, C.H. (2013), "Is environmental governance substantive or symbolic? An empirical investigation", *Journal of Business Ethics*, Vol. 114 No. 1, pp. 107-129.

Rose, C. (2005), "The composition of semi-two-tier corporate boards and firm performance", *Corporate Governance: an International Review*, Vol. 13 No. 5, pp. 691-701.

Rosenkopf, L. and Abrahamson, E. (1999), "Modeling reputational and informational influences in threshold models of bandwagon innovation diffusion", *Computational and Mathematical Organization Theory*, Vol. 5 No. 4, pp. 361-384.

Rousseeuw, P.J. and Van Zomeren, B.C. (1990), "Unmasking multivariate outliers and leverage points", *Journal of the American Statistical Association*, Vol. 85 No. 411, pp. 633-639.

Rowbottom, N. and Locke, J. (2014), "Tensions and detours in the emergence of integrated reporting", in Proceedings of 50th BAFA conference, London, UK, available at: https://bafa.group.shef.ac.uk/submission_system/view_submissions/ (accessed: 19 September 2014).

References

Royal DSM (2010), "DSM N.V 2010 integrated annual report", available at: http://www.annualreport2010.dsm.com/downloads/DSM-Annual-Report-2010.pdf (accessed 07 June 2014).

Ruigrok, W., Peck, S. and Tacheva, S. (2007), "Nationality and gender diversity on Swiss corporate boards", *Corporate Governance: an International Review*, Vol. 15 No. 4, pp. 546-557.

SABAF (2010), "SABAF annual report 2010", available at: http://www.sabaf.it/opencms/opencms/Risorse/investorRelations/documentazioneOnline/bilanci/annual_report_2010.pdf (accessed 07 June 2014).

Sage, A.P. (1999), "Sustainable development: issues in information, knowledge, and systems management", *Information, Knowledge and System Management*, Vol. 1 No. 3-4, pp. 185-223.

Salzmann, O., Ionescu-Somers, A. and Steger, U. (2005), "The business case for corporate sustainability: literature review and research options", *European Management Journal*, Vol. 23 No. 1, pp. 27-36.

Sami, H. and Welsh, M.J. (1992), "Characteristics of early and late adopters of pension accounting standard SFAS No. 87", *Contemporary Accounting Research*, Vol. 9 No. 1, pp. 212-236.

Saunders, M.N., Saunders, M., Lewis, P. and Thornhill, A. (2012), *Research Methods for Business Students*, Sixth Edition, Pearson Education, Essex.

Scalet, S. and Kelly T.F. (2010), "CSR rating agencies: what is their global impact?", *Journal of Business Ethics*, Vol. 94, pp. 69–88.

Scania (2010), "Scania annual report 2010", available at: http://www.scania.com/images/14582-Scania_ENG%2072%20indexed_tcm40-240606.pdf (accessed 07 June 2014).

Schaltegger, S. and Burritt, R.L. (2006), "Corporate sustainability accounting: a nightmare or a dream coming true?", *Business Strategy and the Environment*, Vol. 15 No. 5, pp. 293-295.

Schaltegger, S. and Burritt, R.L. (2010), "Sustainability accounting for companies: catchphrase or decision support for business leaders?", *Journal of World Business*, Vol. 45 No. 4, pp. 375-384.

Schatzki, T.R. (2002), *The Site of the Social: a Philosophical Account of the Constitution of Social Life and Change*, Pennsylvania State University Press, University Park.

Scholte, J.A. (2000), "Cautionary reflections on Seattle", *Millennium: Journal of International Studies*, Vol. 29 No. 1, pp. 115–121.

Scholz, J.T. (1984), "Cooperation, deterrence, and the ecology of regulatory enforcement", *Law and Society Review*, Vol. 18, pp. 179-224.

Schwartz, B. and Tilling, K. (2009), "'ISO-lating' corporate social responsibility in the organizational context: a dissenting interpretation of ISO 26000", *Corporate Social Responsibility and Environmental Management*, Vol. 16 No. 5, pp. 289-299.

Scott, W.R. (2008), *Institutions and Organizations: Ideas and Interests*, Third edition, Sage Publications, London.

Sengupta, P. (1998), "Corporate disclosure quality and the cost of debt", *The Accounting Review*, Vol. 73 No. 4, pp. 459-474.

Shaw, S., Grant, D.B. and Mangan, J. (2010), "Developing environmental supply chain performance measures", *Benchmarking: an International Journal*, Vol. 17 No. 3, pp. 320-339.

Sierra-García, L., Zorio-Grima, A. and García-Benau, M.A. (2013), "Stakeholder engagement, corporate social responsibility and integrated reporting: an exploratory

References

study", *Corporate Social Responsibility and Environmental Management*, DOI: 10.1002/csr.1345.

Simnett, R., Vanstraelen, A. and Chua, W.F. (2009), "Assurance on sustainability reports: an international comparison", *The Accounting Review*, Vol. 84 No. 3, pp. 937-967.

Sinclair, A. (1995), "The chameleon of accountability: forms and discourses", *Accounting, Organizations and Society*, Vol. 20 No. 2, pp. 219-237.

Singh, H. and Harianto, F. (1989), "Management-board relationships, takeover risk, and the adoption of golden parachutes", *Academy of Management Journal*, Vol. 32 No. 1, pp. 7-24.

Singh, V. and Vinnicombe S. (2004), "Why so few women directors in top UK boardrooms? Evidence and theoretical explanations", *Corporate Governance: an International Review*, Vol. 12, pp. 479–488.

Sirsly, C.A.T. and Lamertz, K. (2008), "When does a corporate social responsibility initiative provide a first-mover advantage?", *Business and Society*, Vol. 47 No. 3, pp. 343-369.

Sirsly, C.A.T. and Sur, S. (2013), "Strategies for sustainability initiatives: why ownership matters", *Corporate Governance*, Vol. 13 No. 5, pp. 541-550.

Skouloudis, A., Evangelinos, K. and Nikolaou, I. (2011), "An overview of corporate social responsibility in Greece: perceptions, developments and barriers to overcome", *Business Ethics: a European Review*, Vol. 20 No. 2, pp. 205-226.

Slack, R.E., Corlett, S. and Morris, R. (2014), "Exploring employee engagement with (corporate) social responsibility: a social exchange perspective on organisational participation", *Journal of Business Ethics*, pp. 1-12, Doi: 10.1007/s10551-014-2057-3.

Sojitz (2010), "Sojitz Corporation 2010 annual report", available at: https://www.sojitz.com/jp/ir/reports/annual/upload/ar2010e_b.pdf (accessed 07 June 2014).

Solarworld (2010), "Solarworld annual group report 2010", available at: http://annualgroupreport2010.solarworld.de/fileadmin/GB2010/PDF/EN/SolarWorld_AR2010_English.pdf (accessed 07 June 2014).

Solomon, J. and Maroun, W. (2012), "Integrated reporting: the influence of King III on social, ethical and environmental reporting", available at: http://www.accaglobal.com/content/dam/acca/global/PDF-technical/integrated-reporting/tech-tp-iirsa.pdf (accessed 20 May 2014).

Sotorrío, L.L. and Sánchez, J.L.F. (2008), "Corporate social responsibility of the most highly reputed European and North American firms", *Journal of Business Ethics*, Vol. 82 No. 2, pp. 379-390.

Southwest (2010), "Southwest one report 2010", available at: http://www.southwestonereport.com/2010/_pdfs/2010SouthwestAirlinesOneReport.pdf (accessed 07 June 14).

Spence, L.J. and Rinaldi, L. (2010), "Sainsbury's: embedding sustainability within the supermarket supply chain", in Hopwood A.G., Unerman, J. and Fries, J. (Eds), *Accounting for Sustainability: Practical Insights*, Earthscan, pp. 47-71.

Spence, L.J. and Rinaldi, L. (2012), "Governmentality in accounting and accountability: a case study of embedding sustainability in a supply chain", *Accounting, Organizations and Society*, In press, DOI: 10.1016/j.aos.2012.03.003.

Spitzeck, H. (2009), "The development of governance structures for corporate responsibility", *Corporate Governance*, Vol. 9 No. 4, pp. 495-505.

Stanaland, A.J., Lwin, M.O. and Murphy, P.E. (2011), "Consumer perceptions of the antecedents and consequences of corporate social responsibility", *Journal of Business Ethics*, Vol. 102 No. 1, pp. 47-55.

References

Stead, J.G. and Stead, E. (2000), "Eco-enterprise strategy: standing for sustainability", *Journal of Business Ethics*, Vol. 24 No. 4, pp. 313-329.

Stock, J.H. and Watson, M.W. (2007), *Introduction to Econometrics*, Second edition, Pearson Education.

Stubbs, W. and Higgins, C. (2014), "Integrated reporting and internal mechanisms of change", *Accounting, Auditing and Accountability Journal*, Vol. 27 No. 7, http://dx.doi.org/10.1108/AAAJ-03-2013-1279.

Suchman, M.C. (1995), "Managing legitimacy: strategic and institutional approaches", *Academy of Management Review*, Vol. 20 No. 3, pp. 571-610.

Sun International (2010), "Sun International annual report 2010", available at: http://suninternational.investoreports.com/sun_ar_2010/downloads/sun_ar_2010.pdf (accessed 07 June 2014).

SustainAbility (2004), "Values for money: reviewing the quality of SRI research", available at: http://www.sustainability.com/library/values-for-money (accessed 21 January 2013).

Swanson, D.L. (2008), "Top managers as drivers for corporate social responsibility", in Crane, A., McWilliams, A., Matten, D., Moon, J. and Siegel, D. (Eds), *Oxford Handbook of Corporate Social Responsibility*, Oxford University Press, Oxford, pp. 227-248.

Teece, D.J. (2010), "Business models, business strategy and innovation", *Long Range Planning*, Vol. 43 No. 2, pp. 172-194.

Teegen, H., Doh, J.P. and Vachani, S. (2004), "The importance of non-governmental organizations (NGOs) in global governance and value creation: an international business research agenda", *Journal of International Business Studies*, Vol. 35, pp. 463–483.

Terlaak, A. (2007), "Order without law? The role of certified management standards in shaping socially desired firm behaviors", *Academy of Management Review*, Vol. 32 No. 3, pp. 968-985.

The Hauser Center for Nonprofit Organizations; Initiative for Responsible Investment, (2013) "Current Corporate Social Responsibility Disclosure Efforts by National Governments and Stock Exchanges", available at: http://hausercenter.org/iri/wp-content/uploads/2011/08/CSR-Disclosures-Update-6-27-13.pdf (accessed 11 April 2014).

Thomson, I. (2014), "But does sustainability need capitalism or an integrated report' a commentary on 'The International Integrated Reporting Council: a story of failure' by Flower", *Critical Perspectives on Accounting*, In press, http://dx.doi.org/10.1016/j.cpa.2014.07.003.

TNT (2010), "TNT annual report 2010", available at: http://www.tnt.com/content/dam/corporate/archive/Images/TNT-Annual-Report-2010_tcm177-540040.pdf (accessed 07 June 2014).

Tolbert, P.S. and Zucker, L.G. (1983), "Institutional sources of change in the formal structure of organizations: the diffusion of civil service reform, 1880-1935", *Administrative Science Quarterly*, Vol. 28 No. 1, pp. 22-39.

Trotman, K. and Bradley, G.W. (1981), "Associations between social responsibility disclosure and characteristics of companies", *Accounting, Organisations and Society*, Vol. 6 No. 4, pp. 355-362.

Tsalavoutas, I., André, P. and Evans, L. (2012), "The transition to IFRS and the value relevance of financial statements in Greece", *The British Accounting Review*, Vol. 44 No. 4, pp. 262-277.

References

Tsalavoutas, I., Evans, L. and Smith, M. (2010), "Comparison of two methods for measuring compliance with IFRS mandatory disclosure requirements", *Journal of Applied Accounting Research*, Vol. 11 No. 3, pp. 213-228.

Tuttle, B. and Dillard, J. (2007), "Beyond competition: institutional isomorphism in US accounting research", *Accounting Horizons*, Vol. 21 No. 4, pp. 387-409.

Udayasankar, K. (2008), "Corporate social responsibility and firm size", *Journal of Business Ethics*, Vol. 83 No. 2, pp. 167-175.

UN (2001), *Principles and Recommendations for a Vital Statistics System*, Volume 19, United Nations Publications.

Unerman, J. and Bennett, M. (2004), "Increased stakeholder dialogue and the internet: towards greater corporate accountability or reinforcing capitalist hegemony?", *Accounting, Organizations and Society*, Vol. 29 No. 7, pp. 685-707.

Unerman, J. and O'Dwyer, B. (2010), "Evolution of risk, opportunity and the business case in embedding connected reporting at BT", in Hopwood A.G., Unerman, J. and Fries, J. (Eds), *Accounting for Sustainability: Practical Insights*, Earthscan, pp. 215-232.

United Nations World Commission on Environment and Development (UNWCED) (1987), *Our Common Future (the Brundtland Report)*, Oxford University Press, Oxford, available at: http://conspect.nl/pdf/Our_Common_Future-Brundtland_Report_1987.pdf (accessed 19 July 2013).

Uzzi, B. (1999), "Embeddedness in the making of financial capital: how social relations and networks benefit firms seeking financing", *American Sociological Review*, Vol. 64, pp. 481-505.

Valente, M. (2012a), "Business sustainability embeddedness as a strategic imperative: a process framework", *Business and Society*, Doi: 10.1177/0007650312443199.

Valente, M. (2012b), "Indigenous resource and institutional capital the role of local context in embedding sustainable community development", *Business and Society*, Vol. 51 No. 3, pp. 409-449.

van Bommel, K. (2014), "Towards a legitimate compromise?: An exploration of Integrated Reporting in the Netherlands", *Accounting, Auditing and Accountability Journal*, Vol. 27 No. 7, http://dx.doi.org/10.1108/AAAJ-04-2013-1309.

van Marrewijk, M. (2003), "Concepts and definitions of CSR and corporate sustainability: between agency and communion", *Journal of Business Ethics*, Vol. 44 No. 2-3, pp. 95-105.

Vance, S.C. (1983), *Corporate Leadership: Boards, Directors, and Strategy*, McGraw-Hill, New York.

Vancity (2005), "Integrated reporting: issues and implications for reporters", available at: https://www.vancity.com/lang/fr/SharedContent/documents/IntegratedReporting.pdf (accessed 12 July 2014).

Viehöver, M.G., Türk, V. and Vaseghi, S. (2010), "CSR assurance in practice: measuring and auditing sustainability", in Pohl M. and Tolhurst N. (Eds), *Responsible Business: How to Manage a CSR Strategy Successfully*, Wiley, Chichester, pp. 91-106.

Vilanova, M., Lozano, J.M. and Arenas, D. (2009), "Exploring the nature of the relationship between CSR and competitiveness", *Journal of Business Ethics*, Vol. 87 No. 1, pp. 57-69.

Wallerstein, I. (1976), "Modernization: requiescat in pace" in Coser, L.A. and Larsen, O.N. (Eds), *The Uses of Controversy in Sociology*, Free Press, New York, pp. 131-135.

Wang, J. and Coffey, B.S. (1992), "Board composition and corporate philanthropy", *Journal of Business Ethics*, Vol. 11 No. 10, pp. 771-778.

References

Wapner, P. (1997), "Governance in global civil society", in Young, O.R. (Ed.), *Global Governance: Drawing Insights from the Environmental Experience*, MIT Press, Cambridge, MA, pp. 65-84.

Weaver, G.R., Trevino, L.K. and Cochran, P.L. (1999), "Integrated and decoupled corporate social performance: management commitments, external pressures, and corporate ethics practices", *Academy of Management Journal*, Vol. 42 No. 5, pp. 539-552.

Weber, R.P. (1985), *Basic Content Analysis, Quantitative Applications in the Social Sciences*, Sage Publications, Beverly Hills, California.

Weisbach, M.S. (1988), "Outside directors and CEO turnover", *Journal of Financial Economics*, Vol. 20, pp. 431-460.

Westphal, J.D. and Zajac, E.J. (1994), "Substance and symbolism in CEOs' long-term incentive plans", *Administrative Science Quarterly*, Vol. 39, pp. 367-390.

Westphal, J.D. and Zajac, E.J. (1998), "The symbolic management of stockholders: corporate governance reforms and shareholder reactions", *Administrative Science Quarterly*, Vol. 43, pp. 127-153.

Westphal, J.D. and Zajac, E.J. (2001), "Decoupling policy from practice: the case of stock repurchase programs", *Administrative Science Quarterly*, Vol. 46 No. 2, pp. 202-228.

Westphal, J.D., Gulati, R. and Shortell, S.M. (1997), "Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption", *Administrative Science Quarterly*, Vol. 42 No. 2, pp. 366-394.

White, A.L. (2005a), "Fade, integrate or transform? The future of CSR, business for social responsibility", available at: http://www.jussemper.org/Newsletters/Resources/BSR_Allen-White.pdf (accessed 25 February 2013).

White, A.L. (2005b), "New wine, new bottles: the rise of non-financial reporting", *Business for Social Responsibility Business Brief*, available at: http://www.businesswire.com/portal/binary/com.epicentric.contentmanagement.servlet. ContentDeliveryServlet/services/ir_and_pr/ir_resource_center/editorials/2005/BSR.pdf (accessed 30 June 2014).

Whiteman, G. and Cooper, W.H. (2000), "Ecological embeddedness", *Academy of Management Journal*, Vol. 43 No. 6, pp. 1265-1282.

Wild, S. and van Staden, C.J. (2013), "Integrated reporting: initial analysis of early reporters– an institutional theory approach", paper presented at the 7th Asia Pacific Interdisciplinary Accounting Research (APIRA) Conference, Kobe, available at: http://www.apira2013.org/proceedings/pdfs/K236.pdf (Accessed 10 June 2014).

Williams, C.A. and Aguilera, R.V. (2008), "Corporate social responsibility in comparative perspective", in Crane, A., McWilliams, A., Matten, D., Moon, J. and Siegel, D. (Eds), *Oxford Handbook of Corporate Social Responsibility*, Oxford University Press, Oxford, pp. 452–472.

Williams, R.J. (2003), "Women on corporate boards of directors and their influence on corporate philanthropy", *Journal of Business Ethics*, Vol. 42, pp. 1–10.

Willis, A. (2003), "The role of the global reporting initiative's sustainability reporting guidelines in the social screening of investments", *Journal of Business Ethics*, Vol. 43 No. 3, pp. 233-237.

Winship, C. and Mare, R.D. (1984), "Regression models with ordinal variables", *American Sociological Review*, Vol. 49, pp. 512-525.

Wiseman, J. (1982), "An evaluation of environmental disclosures made in corporate annual reports", *Accounting, Organizations and Society*, Vol. 7 No. 1, pp. 53-63.

Wooldridge, J.M. (2009), *Introductory Econometrics: a Modern Approach*, Fourth Edition, Cengage Learning.

Wooldridge, J.M. (2010), *Econometric Analysis of Cross Section and Panel Data*, MIT press.

Wright, C. and Rwabizambuga, A. (2006), "Institutional pressures, corporate reputation, and voluntary codes of conduct: an examination of the Equator Principles", *Business and Society Review*, Vol. 111 No. 1, pp. 89–117.

Wright, M., Filatotchev, I., Hoskisson, R.E. and Peng, M.W. (2005), "Strategy research in emerging economies: challenging the conventional wisdom", *Journal of Management Studies*, Vol. 42, pp. 1-33.

Yongvanich, K. and Guthrie, J. (2006), "An extended performance reporting framework for social and environmental accounting", *Business Strategy and the Environment*, Vol. 15, pp. 309-321.

Zadek, S. (2006), "Responsible competitiveness: reshaping global markets through responsible business practices", *Corporate Governance*, Vol. 6 No. 4, pp. 334-348.

Zahra, S.A. and Stanton, W.W. (1988), "The implications of board of directors composition for corporate strategy and performance", *International Journal of Management*, Vol. 5 No. 2, pp. 229-236.

Zaltman, G., Duncan, R. and Holbek, J. (1973), *Innovations and Organizations*, Wiley, New York.

Zollo, M., Minoja, M., Casanova, L., Hockerts, K., Neergaard, P., Schneider, S. and Tencati, A. (2009), "Towards an internal change management perspective of CSR: evidence from project response on the sources of cognitive alignment between managers and their stakeholders, and their implications for social performance", *Corporate Governance*, Vol. 9 No. 4, pp. 355-372.

Zucker, L.G. (1987), "Institutional theories of organization", *Annual Review of Sociology*, Vol. 13, pp. 443-464.

Appendix 2.1: Email enquiry

Dear Madam/ Sir

Integrated Reporting Disclosure Study: Request for Information

My name is Mohamed Elmaghrabi, and I am a PhD candidate at the University of Stirling in Scotland. As part of my Doctoral studies, I am currently undertaking a research project examining the emergence of integrated reporting, particularly amongst leading corporations that produce sustainability disclosures according to current GRI guidelines.

GRI currently asks firms to self-declare whether they produce integrated reports, and I understand that your prestigious company has stated they now do so. However, GRI have confirmed to me that they have only collected such information from 2009 onwards. At the same time, I am aware that integrated reports have been published by a number of leading companies for some years prior to this, but as far as I am aware, no reliable or definitive source of information relating to integrated reporting practices prior to 2009 currently exists.

A key aim of my research is to address this gap in knowledge relating to the emergence of integrated reporting disclosure practice. I would therefore be extremely grateful if you could simply confirm to me when your company published its first integrated annual report.

Many thanks in advance for your kind assistance.

Looking forward to hearing from you,

Mohamed Elmaghrabi
PhD Candidate
Accounting and Finance Division
Stirling Management School
University of Stirling
Stirling, FK9 4LA
Tel: +44 (0)1786 467328

Appendix 2.2: IR by year and country

Year	Countries with IRs
2001	Brazil, Norway, Sweden
2002	Brazil, Norway, Sweden, Spain, Switzerland
2003	Brazil, Norway, Spain, Sweden, Switzerland, Italy, Portugal
2004	Brazil, Italy, Norway, Portugal, Spain, Sweden, Switzerland, Canada, Denmark, Greece, South Africa
2005	Brazil, Canada, Denmark, Greece, Italy, Norway, Portugal, South Africa, Spain, Sweden, Switzerland, Chile
2006	Brazil, Canada, Chile, Denmark, Greece, Italy, Norway, Portugal, South Africa, Spain, Sweden, Switzerland, Finland, France
2007	Brazil, Canada, Chile, Denmark, Finland, France, Greece, Italy, Norway, Portugal, South Africa, Spain, Sweden, Switzerland, Australia, Austria, Germany, New Zeeland, Philippines
2008	Australia, Austria, Germany, New Zeeland, Philippines, Finland, France, Chile, Canada, Denmark, Greece, South Africa, Italy, Portugal, Brazil, Norway, Spain, Sweden, Switzerland, Hungary, Japan, Netherlands
2009	Australia, Austria, Brazil, Canada, Chile, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Japan, Netherlands, New Zeeland, Norway, Philippines, Portugal, South Africa, Spain, Sweden, Switzerland, Argentina, Belgium, Colombia, Poland, United Kingdom, United States of America
2010	Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Japan, Netherlands, New Zeeland, Philippines, Poland, Portugal, South Africa, United Kingdom, United States of America, Norway, Spain, Sweden, Switzerland, Sri Lanka

Countries where IR was introduced for the first time in each year are labelled in red.

Appendix 2.3: Country variables

Country	NGOs	EPI	CSRLAW	STAKELAWS	LORIGIN
Argentina	74	67.87	0	21.41	French
Australia	196	69.60	2	23.13	English
Austria	529	74.57	1	24.14	German
Belgium	541	56.67	1(until 2005);2(2006-2010)	24.39	French
Brazil	18	67.05	0	17.62	French
Canada	133	75.02	1	23.81	English
China	2	47.50	0	5.63	Socialist
Chile	140	66.82	0	20.39	French
Colombia	45	69.72	0	15.41	French
Denmark	914	69.80	0(until 2008);2(2009/10)	24.97	Scandinavian
Ecuador	101	64.62	0	21.17	French
Finland	829	80.43	0	25.21	Scandinavian
France	118	70.83	1(until 2009);2(in 2010)	24.05	French
Germany	75	68.75	1	25.00	German
Greece	355	62.57	0	22.19	French
Hungary	329	67.67	0	24.68	Socialist
India	3	47.33	0	12.81	English
Indonesia	9	51.33	0	8.81	French
Ireland	941	68.52	0	23.88	English
Israel	383	61.08	0	19.35	English
Italy	98	64.78	1	23.01	French
Japan	28	67.57	0	20.86	German
Jordan	133	56.37	0	16.57	French
Korea	45	55.13	0	15.17	German
Malaysia	83	64.25	0(until 2006);1(2007-2010)	15.39	English
Mexico	27	58.22	0	16.42	French
Netherlands	392	66.48	1	24.96	French
New Zeeland	687	73.73	0	24.78	English
Nigeria	14	42.47	0	12.44	English
Norway	918	79.83	0(until 2006);1(2007-2010)	24.79	Scandinavian
Pakistan	10	45.57	0	10.78	English
Peru	66	64.00	0	13.90	French
Philippines	26	55.43	0	18.37	French
Poland	87	59.85	0	21.21	Socialist
Portugal	390	69.07	0	23.55	French
Russia	19	64.00	0	14.06	Socialist
Singapore	477	58.20	0	15.28	English
South Africa	67	54.67	0	12.86	English
Spain	134	65.88	0	15.27	French
Sri Lanka	69	59.57	0	12.04	English
Sweden	559	81.38	2	25.03	Scandinavian
Switzerland	673	78.47	0	24.42	German
Thailand	29	59.12	0	15.81	English
Turkey	33	58.80	0	11.34	French
UK	128	67.75	1(until 2005);2(2006-2010)	23.54	English
USA	22	65.87	0	22.78	English

Appendix 2.4: Identifying influential observations

Predicted residuals, deviance residuals and Pregibon leverage are the three main elements in logistic regression diagnostics (Pregibon, 1981; Hosmer, 1991). The scatter-plot for the three techniques is provided below.

Scatter-plot of the predicted residuals
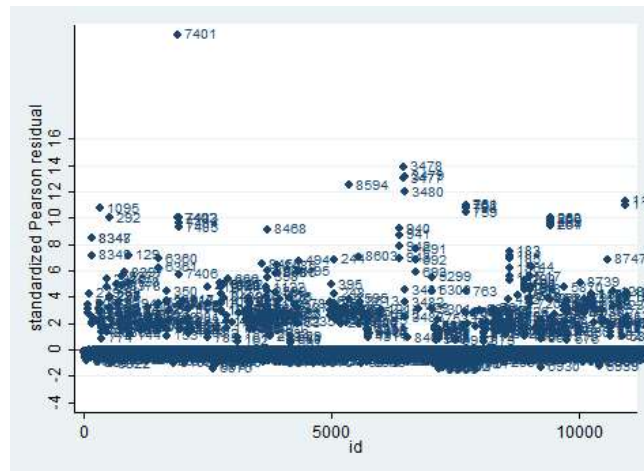
Scatter-plot of deviance residual
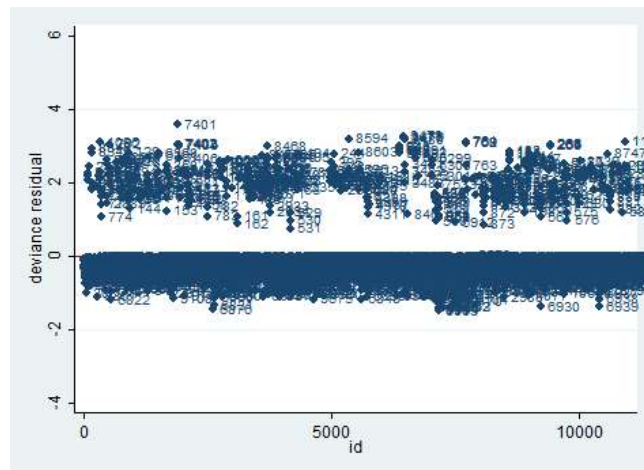
Scatter-plot of Pregibon leverage
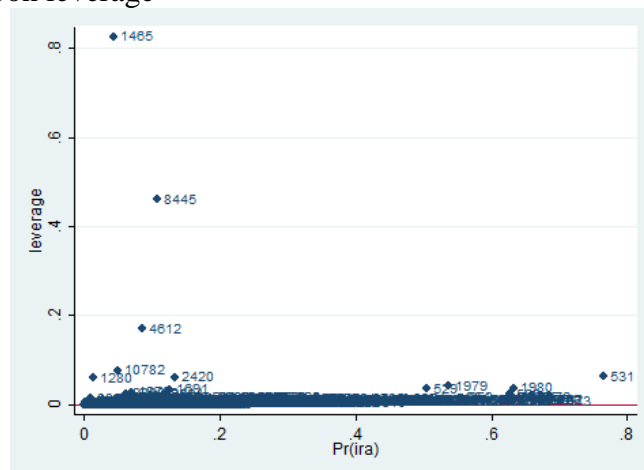
Leverage highlights the influence on the regression, based on its particular combination of x values (Hamilton, 2006, p. 204). High leverage occurs as a consequence to unusual x values or uncommon combinations in an observation (Hamilton, 2006; Rousseeuw and Van Zomeren, 1990). In a logistic regression model an observation will be considered influential when it is above 3 times the average leverage or residual value (Hosmer, 1991). These observations are given in the table below.

Influential observations omitted from the regression model due to high residual and leverage values

Influential observations: Residual (Pearson and deviance)
7401
3478
3480
3477
3479
8594
7403
265
760
Influential observations: Leverage
1465
8445

Appendix 2.5: Results of the bivariate probit model to test endogeneity

		IRA		GRIAD		DJSIIN
Mimetic:						
Organisational field	IRD	5.891***		29.003***		-3.211***
		(3.95)		(50.05)		(-6.08)
Normative:	DJSIIN	0.357***		0 .746***		
Organisational field		(4.57)		(16.88)		-
	GRIAD	0.891***		-		0.648***
		(4.40)				(15.47)
Country level	NGOs	0.001**		0.001***		0.001***
		(2.19)		(6.19)		(3.84)
	EPI	0.573		-1.269***		1.153***
		(1.01)		(-4.04)		(2.92)
Regulative:	CSRLAW	-0.121**		0 .031		0.149***
Country level		(-2.53)		(1.06)		(4.80)
	STAKELAWS	1.824***		1.053***		1.369***
		(3.36)		(3.55)		(3.67)
Controls	LORIGIN-English	-0.378		0 .280***		0.633***
		(-2.57)		(2.94)		(5.85)
	LORIGIN-French	-0.224*		0.566***		0.079
		(-1.74)		(6.40)		(0.82)
	LORIGIN-German	-0.505***		0.217**		0.433***
		(-4.05)		(2.42)		(4.56)
	LORIGIN-Socialist	-0.897***		-0.042		-0.126
		(-3.79)		(-0.35)		(-0.82)
	SIZE	-0.153***		0.143***		0.382***
		(-8.27)		(13.85)		(28.74)
	PROFIT	0.422***		0.393***		0.290***
		(2.97)		(5.09)		(3.07)
	LEVERAGE	0.021		-0.015*		-0.040***
		(1.55)		(-1.85)		(-4.54)
	Constant	-0.593		-4.644***		-12.208***
		(-1.10)		(-15.69)		(-30.72)
Industry control		Included		Included		Included
/athrho (ρ)		**Coefficient -0.029**	**Z-value -0.25**	**Significance 0.799**	**Coef. 0.321 Z-value 1.67***	**Significance 0.094**
No. of Observations		10,337		10,337		
No. of companies		1,215		1,215		
* Significant at 10%;** Significant at 5%;*** Significant at 1% based on a two-tailed test						

Appendix 2.6: Results using a discrete hazard logit model

		Coefficient	Z-value
Mimetic:			
Organisational field	IRD	40.866***	3.99
Normative: *Organisational field*	DJSIIN	1.717***	2.94
	GRIAD	3.335***	5.79
Country level	NGOs	0.003**	2.27
	EPI	-3.529	-0.74
Regulative:			
Country level	CSRLAW	-0.727*	-1.83
	STAKELAWS	10.743**	2.16
Controls	LORIGIN-English	-0.986	-0.73
	LORIGIN-French	-0.699	-0.59
	LORIGIN-German	-2.692**	-2.25
	LORIGIN-Socialist	-7.998***	-3.01
	SIZE	-0.654***	-3.77
	PROFIT	0.202	0.23
	LEVERAGE	0.061	0.56
	Constant	-8.794**	-2.02
Industry control		Included	
No. of Observations		10,337	
No. of companies		1,215	
* Significant at 10%;** Significant at 5%;*** Significant at 1%			

Appendix 2.7: Results using alternative measurements

	Variable	Pred. Sign	Coefficient	Odds ratio	Z-statistic
Mimetic:					
Organisational field	IRD	(+)	43.221***	5.90e^{+18}	3.04
Normative: *Organisational field*	DJSIIN	(+)	1.849***	6.355	2.66
	GRIAD	(+)	3.303***	27.186	5.16
Country level	ln(NGOs)	(+)	1.248***	3.482	2.73
	EPI	(+)	-6.360	0.002	-1.31
Regulative: *Country level*	CSRLAW	(±)	-0.570	0.566	-1.30
	STAKELAWS	(+)	5.629	278.282	1.08
Control Variables	LORIGIN-English	(±)	-2.507*	0.082	-1.83
	LORIGIN-French	(±)	-1.618	0.198	-1.58
	LORIGIN-German	(±)	-3.517***	0.030	-2.77
	LORIGIN-Socialist	(±)	-7.269***	0.001	-2.60
	SIZE	(+)	-0.720***	0.487	-3.10
	PROFIT (ROA)	(±)	-0.188	0.829	-0.13
	LEVERAGE (D/TA)	(±)	-0.009	0.991	-0.13
	Constant	(±)	-2.351		-0.46
Industry control		Included			
Likelihood-ratio test			960.99***		
Wald test			145.45***		
Max VIF			2.93		
No. of Observations			10,337		
No. of companies			1,215		

*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively, using 2-tailed tests.

Using natural log of NGOs, ROA and debt-to-assets to replace NGOs, ROE, debt-to-equity

Appendix 3.1: Items on SE index and their reference in GRI G3.1 and G4

Category/Indicators	Source	Equivalence to G3.1	Application level (A, B, C)	Equivalence to G4	Level (Core or Comprehensive
Category 1. Board and senior management commitment to sustainability issues					
1.1. Board's (CEO/Chairman/CFO or other directors) message on commitment to sustainability	A4S/CERES/ IFAC	Partial equivalence to 1.1 on G3.1 (notes below)	A,B,C	G4-1	Core
1.2. Existence of a sustainability committee/ or audit committee commitment	A4S/CERES/ IFAC	Partial equivalence with 4.1.	A,B,C	G4-34,G4-36	Core/Comprehensive
1.3 Identifying sustainability issues in organisation's vision and mission.	IFAC	Overlap between 1.1 and 4.8 on G3.1 with 1.3 on embeddedness index	A,B	4-1,4-42	G4-1-Core G4-42-Comprehensive
Category 2. Understanding and analysing key sustainability drivers for the organisation					
2.1 Identifying materiality issues in reporting sustainability	A4S	Partial equivalence with 3.5	A,B,C	Materiality Principle	Core
2.2 reporting on the financial and operating implication of sustainability	A4S/IFAC	Partial equivalence to EC2	N/A	G4-2	Comprehensive
2.3 Defining and clarifying the terminology the organisation uses (sustainability, corporate responsibility, or CSR) and what it means in relation to the organisation.	IFAC	N/A	N/A	N/A	N/A
2.X (Omitted indicator) Reporting in accordance to an international or national framework (guidance) for sustainability					
2.4 Incorporating environmental and social opportunities and risks into strategy, operations and policies.	IFAC/CERES	Slightly similar to 1.2; Disclosure of management approach	A,B	G4-2	Comprehensive
2.5 Identifying organisation's stakeholders and engagement process	IFAC/CERES	Covered in 4.14, 4.15, 4.16	4.14-15= A,B,C. 4.16= A,B	G4-24-27	Core/ Comprehensive
2.6 Investor engagement	CERES	Mostly 4.16-17	A,B	G4-26	Core/ Comprehensive
2.7 CEO/Chairman/CFO engagement	CERES	N/A	N/A	G4-37	Comprehensive
2.8 Engaging with suppliers	IFAC/CERES	Mostly 4.16-17	A,B	G4-26	Core/ Comprehensive
2.9 Other stakeholder dialogue	CERES/IFAC	Mostly 4.16-17	A,B	G4-27	Core/ Comprehensive
Category 3. Integrating the key sustainability drivers into the organisation's strategy					
3.1 Key sustainability drivers incorporated and reflected in the organisation's strategy	A4S	Partial equivalence to 1.1	A,B,C	Partial equivalence to G4-1	Core
3.2 Linking sustainability to business case	IFAC	N/A	N/A	N/A	N/A
3.3 Setting qualitative and quantitative goals and targets	IFAC	DMA Similar to S05	A,B	Accuracy principle;G4-2	Core; Comprehensive
3.4 Commitment to public policy sustainability issues	CERES		N/A	G4-SO6	N/A(Specific standard disclosure)
Category4. Ensuring that sustainability is the responsibility of everyone in					

the organisation					
4.1 Employee involvement in sustainability issues	A4S	N/A	N/A	G4-35	Comprehensive
4.2 Management commitment to achieving sustainability goals	CERES	N/A	N/A	N/A	N/A
Category 5. Breaking-down sustainability targets of the organisation as a whole to subsidiaries, departments and divisions					
5.1 Breaking-down sustainability targets of the organisation to its individual subsidiaries and departments.	A4S/CERES	Slightly similar to 3.6	A,B,C	G4-17	Core/ Comprehensive
Category 6. Processes enabling sustainability issues to be taken on a day-to-day decision making					
6.1 Review products sustainability standards	A4S/IFAC	N/A	N/A	G4-PR1	N/A(Specific standard disclosure)
6.2 Review products sustainability performance	IFAC	Slightly covered in EN26,EN27	N/A	G4-EN2,G4-EN7	N/A(SSD)
6.3 Review suppliers' sustainability management practices	IFAC	N/A	N/A	G4-EN32-33;G4-LA15;G4-HR5-6;G4-HR10-11;G4-SO9-10	N/A(SSD)
6.4 Improve the sustainability performance of products.	A4S/IFAC	EN26	N/A	G4-EN27	N/A(SSD)
Category 7. Extensive and effective sustainability training					
7.1 Training employees on sustainability (from inside the company or proving training by a party outside the company)	A4S/CERES	DMA	A,B	G4-HR2,G4-HR7,G4-SO4	Core/Comprehensive
7.2 Raising awareness of employees	A4S/CERES	DMA	A,B	G4-HR2,G4-HR7,G4-SO4	Core/Comprehensive
Category 8. Including sustainability targets and objectives in performance appraisal					
8.1 Sustainability is part of assessment and staff remuneration	A4S/CERES/IFAC	In part similar to 4.5	A,B	G4-51;G4-52; G4-53	Comprehensive
8.2 Sustainability is part of employee promotion	A4S	N/A	N/A	N/A	N/A
Category 9. Champions to promote sustainability and celebrate success					
9.1 showcasing of good sustainability practices to encourage future practices and innovation	A4S	N/A	N/A	N/A	N/A
Category 10. Monitoring and reporting sustainability performance					
10.1 Connecting sustainability performance measures to key financial and general measures (KPIs)	A4S/IFAC	N/A	N/A	N/A	N/A
10.2 Reporting on emissions and energy efficiency	A4S/CERES/IFAC	EN16-20	N/A	G4-EN3-7,15-21.	N/A(SSD)
10.3 Reporting on wastes	A4S/CERES/IFAC	EN22	N/A	G4-EN22-26.	N/A(SSD)
10.4 Reporting on water usage	A4S/CERES/IFAC	EN8,EN21	N/A	G4-EN8-10.	N/A(SSD)

10.5 Reporting on finite resource usage	A4S/IFAC	Partial equivalence EN1,EN2	N/A	G4-EN1&3.	N/A(SSD)
10.6 Reporting on the progress made on sustainability targets.	A4S/IFAC	Similar to "Reporting on trends" in G3.1	A,B,C	Sustainability context principle, G4-2	N/A-Comprehensive

Appendix 3.2: Detailed comparison between SE index indicators to the related items on GRI G3.1 and G4

Embeddedness index	G3.1	G4
1.1. Board's (CEO/Chairman/CFO or other directors) message on commitment to sustainability. Senior management needs to be committed to the process of embedding sustainability (A4S, 2007, p. 8). The board of directors will provide oversight and accountability for corporate sustainability strategy and performance (CERES, 2010, p. 12). Therefore, this indicator represents C-level directors stating their commitment to sustainability issues.	Extract from GRI 3.1: *Statement from the most senior decision maker of the organization (e.g., CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and its strategy.* **Difference:** 1.1 on the SE index states explicitly that the Board message should include **commitment** to sustainability, while 1.1 on G3.1 asks the board to state the **relevance** of sustainability to the organisation and its strategy.	G4-1 (Same as in G3.1) **Difference:** Same as in G3.1
1.2. Existence of a sustainability committee/ or audit committee commitment. This item is self-explanatory. The existence of a specialised committee mainly called CSR or sustainability committee, or addressing/monitoring sustainability aspects via an audit committee represents this item.	4.1 Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight. *Describe the mandate and composition (including number of independent members and/or non-executive members) of the highest governance body and its committees, and indicate each individual's position and any direct responsibility for economic, social, and environmental performance.* [Extract from GRI indicator 1.1]. **Difference:** 1.2 on the SE index states **explicitly** whether the company has a CSR/sustainability committee or audit committee that is responsible for monitoring sustainability. 4.1 on GRI involves other elements like non-executive members and **doesn't explicitly** clarify the need on the existence of CSR/sustainability committee or even an audit committee responsible for sustainability issues.	G4-34 Identify any committees responsible for decision-making on economic, environmental and social impacts G4-36 Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body. **Difference:** Same as G3.1. Moreover, it only wants companies to show which committee is responsible for economic, environmental and social impacts.
1.3 Identifying sustainability issues in organisation's vision and mission. A sustainable vision helps to ensure that an organization looks at its business through a new lens, to ensure that sustainability forms part of its mission, goals and objectives, and strategy (IFAC, 2011, p. 27). Therefore, this item includes whether the organisation includes sustainability as part in its vision and mission statement or not.	1.1 Statement from the most senior decision maker of the organization (e.g., CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and its strategy. *The statement should present the overall vision and strategy for the short-term, medium-term (e.g., 3-5 years), and long-term, particularly with regard to managing the key challenges associated with economic, environmental, and social performance.* [Extract from GRI 1.1]. 4.8 Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation. **Differences:** 1.3 on SE index makes clear the **inclusion** of sustainability issues into the corporate vision and mission statements. Conversely, item 1.1 shows the need to include the sustainability vision in the **board statement** not to be stated in a vision statement as in 1.1. Item 4.8 on GRI doesn't focus solely on sustainability goals and aims in the	G4-1 (Same as G3.1 indicator 1.1) G4-42 Report the highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts. **Differences:** Same as G3.1. Additionally, G4-42 wants top level management to disclose their role in updating the mission statements.

	corporate mission statement, but on codes of conduct and the forth.	
2.1 Identifying materiality issues in reporting sustainability. Materiality, as a vital filter for organizations to use in their sustainability and IR, helps organizations to decide on the relevant issues to disclose for the benefit of stakeholders (IFAC, 2011, p. 167) and the omission of such material information may influence stakeholders' decisions. In this item, materiality in reporting sustainability includes identifying significant environmental and social issues, and how materiality testing, measurement and reporting of these issues will be applied (IFAC, 2011, p. 23); also, determining materiality in relation to the needs of various stakeholders (IFAC, 2011, p. 12).	3.5 Process for defining report content, including: • Determining materiality; • Prioritizing topics within the report; and •Identifying stakeholders the organization expects to use the report. **Difference:** 2.1 necessitate determining materiality in relation to needs of stakeholders, while 3.5 on GRI determine which stakeholders are using the report.	Indicator 2.1 in large agreement with G4 materiality principle.
2.2 Reporting on the financial and operating implication of sustainability. It is important for each organisation to determine which sustainability areas are the most important for it, and to understand how sustainability in these areas affects profitability and brand. It is, of course, important that this analysis should focus on the financial or operating case for sustainability (A4S, 2007, p. 8). Companies should disclose sustainability-related liabilities and costs in their report (CERES, 2010, p. 36).	EC2 Financial implications and other risks and opportunities for the organization's activities due to climate change. Difference: 2.2 make explicit the reporting of both financial and operational implications of sustainability. EC2 focus on financial implications and only from environmental aspects.	G4-2 involves numerous aspects covering not only social and environmental implications, but also disclosures about sustainability related risks and opportunities as in indicator 2.4 on the SE index.
2.3 Defining and clarifying the terminology the organisation uses (sustainability, corporate responsibility, or CSR) and what it means in relation to the organisation. This item is self-explanatory, whereby a company is to include a description to the sustainability term(s) it is using and the context being used for.	No reference under GRI (N/A)	N/A
2.4 Incorporating environmental and social opportunities and risks into strategy, operations and policies. A good measure of whether sustainable development is embedded into organizational operations and general good management is the extent to which an organization (a) astutely manages risks, attuned to social and environmental sensitivities, and (b) recognizes the opportunities for improving both its financial and sustainability performance (IFAC, 2011, p. 48). This item looks at embedding sustainability into risk reporting.	1.2 Description of key impacts, risks, and opportunities. *Section Two should focus on the impact of sustainability trends, risks, and opportunities on the long-term prospects and financial performance of the organization. This should concentrate specifically on information relevant to financial stakeholders or that could become so in the future. Section Two should include the following:* • *A description of the most important risks and opportunities for the organization arising from sustainability trends;* • *Prioritization of key sustainability topics as risks and opportunities according to their relevance for long-term organizational strategy, competitive position, qualitative and (if possible) quantitative financial value drivers.* [Part of item 1.2 on GRI]. **Similarity:** Item 2.4 on SE index is only similar to the second section of 1.2 on GRI.	See Indicator 2.2
2.5 Identifying organisation's stakeholders and engagement process. The organisation has to show its stakeholders and on what basis they were identified. The organisations are to show how they approach their stakeholders and the channels used for engagement (IFAC, 2011).	4.14 List of stakeholder groups engaged by the organization. • Civil society; • Customers…etc. 4.15 Basis for identification and selection of stakeholders with whom to engage. This includes the organization's process for defining its stakeholder groups, and for determining the groups with which to engage and	Collectively covered by G4-24-26. G4-24 requires disclosing on stakeholders list; G4-25 for identification basis and G4-26 for engagement approach.

	not to engage. 4.16 Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group. This could include surveys, focus groups, community panels, corporate advisory panels, written communication, management/union structures, and other vehicles. **Similarity:** 2.5 is basically items 4.14,15,16 together.	
2.6 Investor engagement Companies will address specific sustainability risks and opportunities during annual meetings, analyst calls and other investor communications (CERES, 2010, p. 30) and reflected in its report.	4.16 Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group. 4.17 Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. **Similarity:** 2.6 is items 4.16,17 together, but in particular reference to investors (shareholders)	G4-26 includes the identification process to various stakeholder including investors.
2.7 CEO/Chairman/CFO (C-level) engagement with stakeholders. Ensuring regular engagements of C-level (CEO/Chairman/CFO) director with various stakeholders (including NGOs, investors, customers, suppliers, and members of the community). Stakeholder engagement processes may inform strategy, risk management and enterprise wide decision-making (CERES, 2010, p. 31).	N/A	G4-37 Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body.
2.8 Engaging with suppliers. Engagement with suppliers takes different orientations for example to Identify the opportunities associated with sustainable procurement (IFAC, 2011, p. 57). Considering a systematic process for supplier selection that is clear to all potential and current suppliers (p. 59) or communicating how an organization builds relationships and does business with business partners and suppliers (p. 59).	**Similarity:** 2.8 is items 4.16,17 together, but in particular reference to suppliers.	See indicator 2.6
2.9 Other stakeholders dialogue Companies will engage stakeholders in a manner that is on-going, in-depth, timely and involves all appropriate parts of the business. Companies will disclose how they are incorporating stakeholder input into corporate strategy and business decision-making (CERES, 2010, p. 28). Stakeholder dialogue may include discussing a) significant challenges and inconsistencies with current strategy, and (b) options for moving toward a more sustainable business model (IFAC, 2011, 39).	**Similarity:** 2.9 is items 4.16,17 together, but in particular reference to other stakeholders (excluding investors and suppliers).	G4-27 reporting on issues raised by various stakeholders and how the company addressed them.
3.1 Key sustainability drivers incorporated and reflected in the organisation's strategy Key sustainability drivers (mainly quantified) are incorporated and reflected in the organisation's strategy as an integrated and connected part of the whole, rather than as standalone issues and objectives (A4S, 2007, p. 9).	1.1 Statement from the most senior decision maker of the organization (e.g., CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and its strategy. Difference: 3.1 looks at reporting sustainability issues into the company's strategy statement in an integrated manner. Conversely, GRI 1.1 requires reporting of key sustainability issues in the strategy statement but with no reference to integration.	G4-1 statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability. *Same as G3.1*
3.2 Linking sustainability to business case (Establishing the sustainability development	N/A	N/A

business case).

Business case is a very useful tool for promoting and communicating commitment to sustainable development (for external audiences), but a more detailed business case and implementation plan might be necessary to define and deliver organizational commitments to sustainable development strategies, principles, values, and policies (IFAC, 2011, p. 23).

Example of linking sustainability to business case:

Shell: Delivering on Our Commitment to Sustainable Development

The business case for sustainable development is becoming increasingly clear. Our commitment to contribute to sustainable development can be a significant factor in:
☐ Attracting and motivating employees
☐ Reducing costs through efficient use of materials and energy
☐ Reducing risks to both new investments and on-going activities
☐ Anticipating new markets and developing business portfolios
☐ Influencing product and service innovation
☐ Attracting more loyal customers
☐ Enhancing our reputation

3.3 Setting qualitative and quantitative goals and targets Organizations can also consider a broad set of qualitative and quantitative measures reflecting cultural, social, economic, and environmental issues, and subject these measures to frequent review (IFAC, 2011, p. 44).	Management disclosure approach: *The Disclosure(s) on Management Approach is intended to address the organization's approach to managing the sustainability topics associated with risks and opportunities.* *DMA include:* • *Goals and performance*	Accuracy principle: Responses to economic, environmental and social DMA and Indicators can be expressed in many different ways, ranging from qualitative responses to detailed quantitative measurements. G4-2 Prioritization of key sustainability topics as risks and opportunities according to their relevance for long-term organizational strategy, competitive position, qualitative, and (if possible) quantitative financial value drivers.
3.4 Commitment to public policy sustainability issues Companies will clearly state their position on relevant sustainability public policy issues. Any lobbying will be done transparently and in a manner consistent with sustainability commitments and strategies (CERES, 2010, p. 23).	**Equivalent to:** *SO5 Public policy positions and participation in public policy development and lobbying.*	G4-S06 includes disclosures to political contributions, but not disclosures on lobbying practices.
4.1 Employee involvement in sustainability issues. A wider group of operational staff should participate in development of these measures to (a) ensure that they feel ownership, and (b) better ensure identification of key issues and opportunities (IFAC, 2011, p. 44). This represents a bottom-up approach to setting sustainability objectives (i.e. sustainability is not kept in isolation within the organisation and all are involved in its development).	N/A	G4-35 Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees.
4.2 Management commitment to achieving sustainability goals. Sustainability is embedded in mainstream management processes (A4S, 2007, p. 9).	N/A	N/A

Management retains responsibility for achieving sustainability targets and programs through day-to-day operations and decision making. Specific senior individuals responsible for sustainability related outcomes could be identified in corporate communications in order to underscore that personal accountability (CERES, 2010, p. 18).		
5.1 Breaking-down sustainability targets of the organisation to its individual subsidiaries and departments. This item is self-explanatory, the main theme here is whether the sustainability targets are locked into the parent or headquarters or targets are set to subsidiaries and departments as well.	3.6 Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). **Difference:** 5.1 in embeddedness index refers to showing how to organisation breaks down sustainability goals and targets to divisions and departments to attain the overall sustainability aims. Unlike 3.6 GRI which refers to showing which departments or divisions are covered in this report.	G4-17 Same as G3.1
6.1 Review products sustainability standards. Review current product sustainability standards in line with the overall organisational sustainability policies (A4S, 2007, p. 15) and international standards.	N/A	G4-PR1 Report the percentage of significant product and service categories for which health and safety impacts are assessed for improvement. Difference: Overemphasising one item of product sustainability in G4-PR1, as opposed to a more general stand in indicator 6.1
6.2 Review products sustainability performance. Including product energy use, wastes, materials used and compare them against targets and organisational product policies and standards.	EN26 Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation. EN27 Percentage of products sold and their packaging materials that are reclaimed by category. **Difference:** 6.2 in embeddedness index requires companies to show sustainability performance (materials use, wastes, energy...etc.) per product. GRI EN26 and EN27 shows some of the performance attributes put for products in general.	G4-EN2 requires disclosures on material use and recycling on primary products only. G4-EN7 requires showing energy reductions on sold product intact. Hence, it is similar to G3.1.
6.3 Review suppliers' sustainability management practices. Supplier monitoring and support is on-going via periodic meetings and training, and with the consideration of collaborative opportunities (IFAC, 2011, p 58). Assessing the supplier's sustainability management practices and performance, and identifying areas requiring further improvement to match expected sustainability product or service standards (A4S, 2007, p. 16).	N/A	Supplier management practices collectively covered by numerous indicators (G4-EN32-33 environmental practices; G4-LA15 labour practices; G4-HR5-6 forces labour; G4-HR10-11 human rights screening; G4-SO9-10 societal impacts).
6.4 Improve the sustainability performance of products. Integrating the newly generated information about the product's or service's sustainability performance rating, into the organisation's commercial decision-making processes of producing, buying products … etc. (A4S, 2007, p. 17).	This is **equivalent to**: EN26 Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	Similar to G4-27
7.1 Training employees on sustainability (from inside the company or proving training by a party outside the company) This item is self-explanatory as to whether the organisation is introducing employee training programs on sustainability.	*DMA include:* *Training and awareness*	G4-HR2 covers employee training on human rights; G4-HR7 includes security personnel human rights training and G4-S04 relates to anti-corruption training. Hence SE index covers various sustainability training aspects and is not limited to

		human rights and anti-corruption as in G4.
7.2 Raising awareness of employees Companies should devote resources to employee education on sustainability and tools that empower them to take action at work and outside of work (CERES, 2010, p. 75). Things like green ride campaigns, recycling old unwanted goods...etc.	Same as previous indicator	Minimal coverage by G4, as in G3.1.
8.1 Sustainability is part of assessment and staff remuneration Sustainability performance results must be a core component of the evaluation of senior executive performance and compensation packages. The weighting given to sustainability performance should be disclosed in annual reports so that it is clear to shareholders and other stakeholders how executives are being rewarded (CERES, 2010, p. 19).	*4.5 Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).* Difference: It is not clear from item 4.5 GRI as to whether environmental and social aspects are included in compensation package or the only thing is showing the links of compensation to performance (even financial only)? Item 8.1 mentions explicitly that sustainability performance is part of the compensation of staff.	G4-51-53 requires companies to show the types of remuneration of the board and executives members only.
8.2 Sustainability is part of employee promotion. Companies will incorporate sustainability criteria into recruitment protocols, employee performance processes, compensation and incentives – not just in the incentive plans for senior executives (CERES, 2010, p. 73).	N/A	N/A
9.1 Showcasing of good sustainability practices to encourage future practices and innovation Celebrating success and showcasing good practice can also encourage further innovation and provide case studies from which others can learn (A4S, 2007, p. 13).	N/A	N/A
10.1 Connecting sustainability performance measures to key financial and general measures (KPIs) This item looks at using KPIs in an organizationally specific context, and ensuring that they are connected to organizational goals and strategy can be challenging (IFAC, 2011, p. 108). In which, the organisation is to identify a clear link between strategy and KPIs, and a strategy progress statement giving the key measures of success for each strategic priority. For example, an organization might relate this increased R&D investment to improve product design that reduced product cost, environmental impact through reducing toxic waste, and enhanced organizational reputation. This might then be related to a headline target on savings from environmental initiatives, which features in its external reporting (p. 113).	N/A	N/A
10.2 Reporting on emissions and energy efficiency Information that should all be included about emissions is as follows (Greenhouse Gas Protocol cited in A4S, 2007, p. 32): • Financial data – the offset cost (the amount paid to reduce the organisation's carbon footprint), sustainability expenditure (the amount which is spent to lessen polluting emissions) and carbon equivalent liability (the cost to an organisation of buying carbon credit for CO_2 equivalent emissions which are not offset). • Non-financial information – the actual carbon footprint of the organisation. Targets for future reductions should be given, showing the	EN16 Total direct and indirect greenhouse gas emissions by weight. EN17 Other relevant indirect greenhouse gas emissions by weight. EN18 Initiatives to reduce greenhouse gas emissions and reductions achieved. EN19 Emissions of ozone-depleting substances by weight. EN20 NO, SO, and other significant air emissions by type and weight.	Reporting on emissions and energy collectively covered by G4-EN3-7; 15-21.

strategy for sourcing renewable energy supplies, for example or on tackling transport policy to reduce miles travelled.		
10.3 Reporting on wastes Information included (A4S, p. 32): • Sustainability expenditure should again be included. • Future targets and information on the substitution to non-hazardous substances, and the replacement of existing technology to promote, for example, safer and more environmentally friendly chemicals, should be included.	EN22 Total weight of waste by type and disposal method.	Disclosures on waste collectively covered in G4-EN22-26.
10.4 Reporting on water usage Information included: Total water withdrawal by source (A4S, p. 33)	EN8 Total water withdrawal by source. EN21 Total water discharge by quality and destination.	Covered by G4-EN8-10
10.5 Reporting on finite resource usage Information included: Total amount of materials used by weight or volume including the percentage of non-renewable materials. (A4S, p. 33)	EN1 Materials used by weight or volume. EN2 Percentage of materials used that are recycled input materials.	Covered by G4-1; 3
10.6 Reporting on the progress made on sustainability targets Providing information of sustainability indicators for employees, customers …etc., while showing the progress made comparing them to targets.	In reporting on the Performance Indicators, the following guidance on data compilation applies: • Reporting on Trends Information should be presented for the current reporting period (e.g., one year) and at least two previous periods, as well as future targets, where they have been established, for the short- and medium-term.	G4-2 requires companies to disclose, in a tabular form: - Targets, performance against targets, and lessons learned for the current reporting period - Targets for the next reporting period and medium term objectives and goals (that is, 3–5 years) related to key risks and opportunities

Appendix 3.3: Companies producing integrated annual reports in other languages to English

Company	Language used in the annual report	Other annual documents produced in English (if applicable)
1- ACEGAS-APS SPA	Italian (http://www.gruppo.acegas-aps.it/dataload/ckupload/bilanci/Bilancio_Integrato_2010_PagSing%20low_res.pdf) 385-pages	Annual Review (http://www.gruppo.acegas-aps.it/dataload/ckupload/Annual_Review_2010.pdf) 50-pages
2- Bancolombia S.A	Spanish (http://www.grupobancolombia.com/contenidoCentralizado/informacionEmpresarial/relacionInversionistas/gobiernoCorporativo/resultadosFinancieros/resultadosAnuales/anuales/2010/Informe2010GesEmp.pdf) 364-pages	Corporate Responsibility (http://www.grupobancolombia.com/contenidoCentralizado/informacionEmpresarial/investorRelations/corporateGovernance/financialInformation/annualReports/anuales/2010_CorporateResponsibilityReport.pdf) 139-Pages
3- Bank COOP	German (http://www.bankcoop.ch/~/media/Files/BankCoop/Documents/01%20Geschaeftsberichte/de/Geschaeftsbericht/bc-geschaeftsbericht-2010.pdf) 137-Pages	
4- DGC ONE AB	Swedish (http://www.corporateregister.com/a10723/39542-11nn-10280920U122184780F-Sw.pdf) 93-pages	
5- Graubuendner KBK	German (http://www.corporateregister.com/a10723/37331-11Su-10415349H1239986496M-Sw.pdf) 68-Pages	
6- Ledesma S.A.A.I	Spanish (http://www.corporateregister.com/a10723/35578-10Co-9783950S3192271628W-So.pdf) 89-pages	
7- Banco Bilbao	Spanish	

Vizcaya Argentaria, Chile SA	(http://www.corporateregister.com/a10723/41784-11Co-10989192P8964422928C-Gl.pdf) 56-pages	

Appendix 3.4: Titles of integrated reports

Title	No. of companies	Percentage
Annual Report	97	67.83%
Integrated Annual Report	11	7.69%
Integrated Annual and Sustainability Report	5	3.50%
Annual and Sustainability Report	6	4.20%
Annual Review and Sustainability Report	1	0.70%
Annual and Corporate Responsibility (or CSR) report	9	6.29%
One Report	1	0.70%
Corporate Accountability Report	1	0.70%
Annual Review	3	2.10%
Annual Sustainability Report	6	4.20%
Economic, Environmental and Social Performance	1	0.70%
"Company name" Report (Natura Report 2010)	1	0.70%
Corporate Management and Finances	1	0.70%
Total	143	100%

From these companies 63 companies stated in their report that it is an integrated report. Out of these 37 stated the year they produced the first integrated report.

Integrated reporters used in the study

| Industry	Company name		
Basic Materials (24)	Ahlstrom	Arcelormittal South Africa	BASF
	African Rainbow	Implats	Billerud AB
	Elekeiroz	Evraz Highveld Steel	Exxaro Resources
	Gem Diamonds	Gold Fields	Keaton Energy Holding
	Koninklijke DSM N.V	Merafe Resources	Metsa Board OYJ
	Nitto Denko Corp	Norsk Hydro	Novagold Resources
	Outokumpu OYJ	Rautaruukki	Royal Bafokeng
	Syngenta	Yara	Anglo Platinum
Consumer Goods (8)	Cermaq	Electrolux	Kelani Valley Plantation
	Royal Wessanen	Natura Cosmeticos	Puma SE
	Raisio	Tongaat Hulett LTD	
Consumer Services (9)	Ante 3 De Tele	Clicks Group Limited	Foschini
	Inditex	JD Group LTD	Phumelela Gaming
	Shoprite Holdings	Southwest Airlines	Sun International
Financials (27)	Absa	African Bank	Atrium Ljungberg
	Ayala Land	Banco Comercial Portugues	Banco Espirito Santo
	BBVA	BM&FBOVESPA	Caixabank
	CEBU Holding	CEBU Property Ventures and Development Corporation	Citycon
	Delta Lloyd	Discovery Holdings LTD	Firstrand
	GPT Group	Insurance Australia Group (IAG)	Itaúsa
	Piraeus Bank	Realia Business SA	Redecard sa
	Storebrand	Swedbank	Volksbank AG
	Westpac Banking Corporation	Zuger Kantonalbank	International Personal Finance
Health Care (7)	Fleury	Genesis	Novo Nordisk
	Roche Holding AG	Sanitas	Straumann
	UCB SA		
Industrials (31)	Alfa Laval AB	Altron (Allied Electronics)	Aramex Company
	Arcadis NV	Atlas Copco	Ballast Nedam

	Barloworld LTD	Bidvest	CCR SA
	CSX Corporation	Dätwyler Holding	Duratex SA
	EcoRodovias	Eternit	Fagerhult AB
	Grindrod	Iino Lines	Iliad Africa Limited
	Kon. Philips Electro	Kongsberg Gruppen	Nampak
	Pretoria Portland	Prosegur Cia De Seguridad SA	Reunert Limited
	Sabaf	Scania	Schneider Electric
	SKF Group	Sojitz	TNT
	Wartsila OYJ AB		
Oil and Gas (8)	Abengoa	Ecopetrol	Eni Group
	Grupa Lotos	Mol Group	Sasol Limited
	SolarWorld	Statoil ASA	
Technology (4)	ARM Holdings PLC	Dainippon Screen MFG	Indra
	Qurius N.V		
Telecommunications (6)	Altech (Allied Technologies)	Belgacom	Swisscom
	Telecom Italia	Telenor	Telkom
Utilities (12)	AGL Energy	American Electric Power	Capital Power Corporation
	CPFL Energia SA	EDP (Energias de Portugal)	EDP Renováveis
	Enagas	ENDESA S.A	Energy Development Corporation
	EVN AG	Tractebel Energia	Veolia Environnement

Appendix 3.5: SE scores by country

Country (with more than two integrated reporters)	Maximum (%)	Minimum	Mean Score	Median
Australia	23(67.65%)	6(17.65%)	17.75(52.21%)	21.0(61.76%)
Brazil	30(88.24%)	12(35.29%)	19.91(58.56%)	21.0(61.76%)
Finland	28(82.35%)	13(38.24%)	20.29(59.66%)	21.0(61.76%)
Germany	28(82.35%)	22(64.71%)	25.33(74.51%)	26.0(76.47%)
Italy	21(61.76%)	20(58.82%)	20.33(59.80%)	20.0(58.82%)
Japan	16(47.06%)	10(29.41%)	13.50(39.71%)	14.0(41.18%)
Netherlands	28(82.35%)	11(32.35%)	21.13(62.13%)	23.5(69.12%)
Norway	26(76.47%)	8(23.53%)	17.29(50.84%)	16.0(47.06%)
Philippines	28(82.35%)	24(70.59%)	25.75(75.74%)	25.5(75.00%)
Portugal	29(85.29%)	22(64.71%)	25.00(73.53%)	24.0(70.59%)
South Africa	27(79.41%)	5(14.71%)	16.24(47.78%)	17.0(50.00%)
Spain	27(79.41%)	4(11.76%)	18.92(55.64%)	21.5(63.24%)
Sweden	30(88.24%)	9(26.47%)	18.00(52.94%)	18.0(52.94%)
Switzerland	26(76.47%)	9(26.47%)	17.50(51.47%)	17.5(51.47%)
UK	17(50.00%)	13(38.24%)	15.00(44.12%)	15.0(44.12%)
US	27(79.41%)	7(20.59%)	18.67(54.90%)	22.0(64.71%)

Appendix 4.1: Testing normality

Residuals are plotted against the normal distribution curve
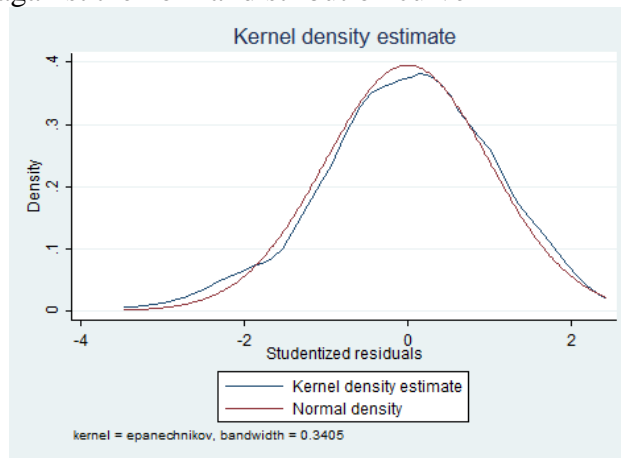
Standardised normal probability P-P plot (using pnorm command on Stata)
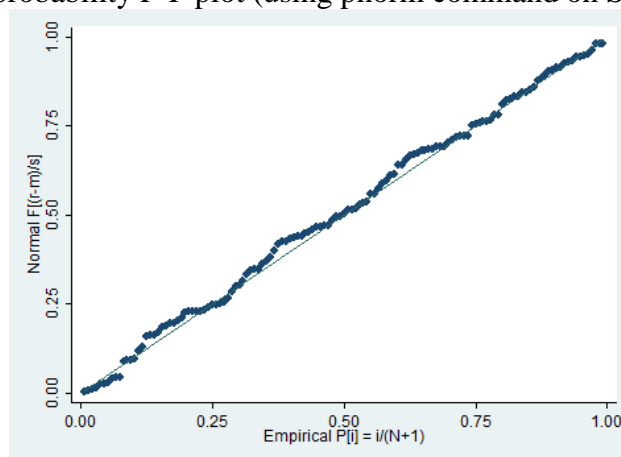
Shapiro-Wilk W test for normality

	W	V	Z	Prob>Z
r	0.988	1.194	0.400	0.345
r= residuals; No of observations= 135				

Given that the p-value of the test is large (0.345), the r (residual) normality assumption cannot be rejected. Thus, the test indicates that the residual term is normally distributed and that the normality assumption is met.

Skewness/Kurtosis test for Normality

	Pr(Skewness)	Pr(Kurtosis)	Adj. Chi^2(2)	Prob>Chi^2
r	0.104	0.628	2.94	0.230
r= residuals; No of observations= 135				

Appendix 4.2: Testing homoscedasticity

Plotting residuals against fitted (predicted) values (using the rvfplot command on Stata)
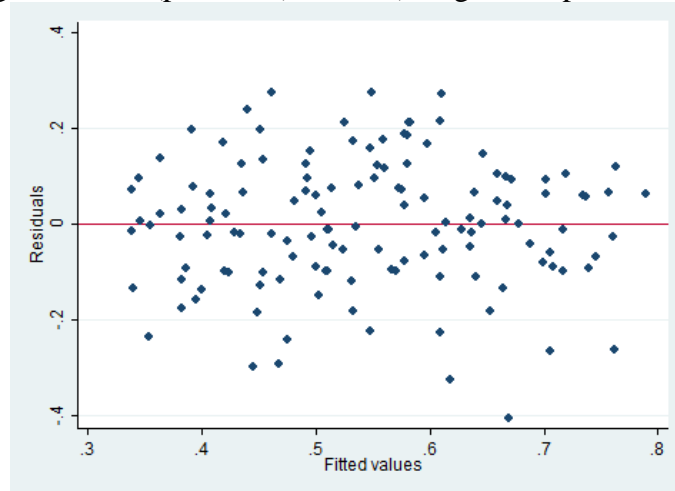
White's test for Heteroskedasticity (using the imtest command on Stata)
Ho: Constant variance (homoscedastic)
H1: Non-constant variance (heteroskedastic)

White test	Chi-squared	Degrees of freedom	p-value
Heteroskedasticity	75.70	74	0.4234
Skewness	12.24	11	0.3119
Kurtosis	0.00	1	0.9521
Total	88.42	86	**0.4076**

Breusch-Pagan / Cook-Weisberg test for Heteroskedasticity (hottest command on Stata)
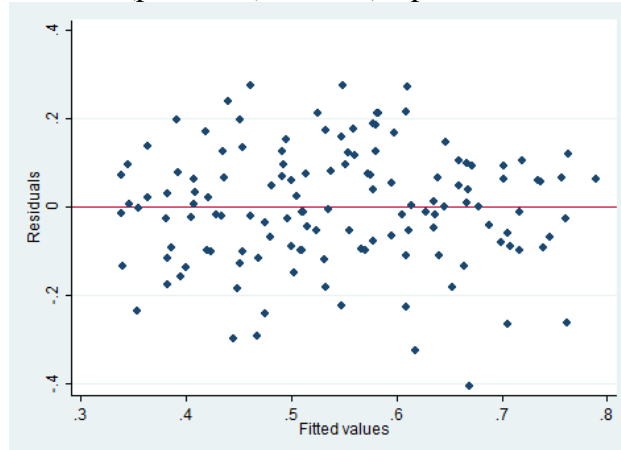Ho: Constant variance (homoscedastic)
H1: Non-constant variance (heteroskedastic)
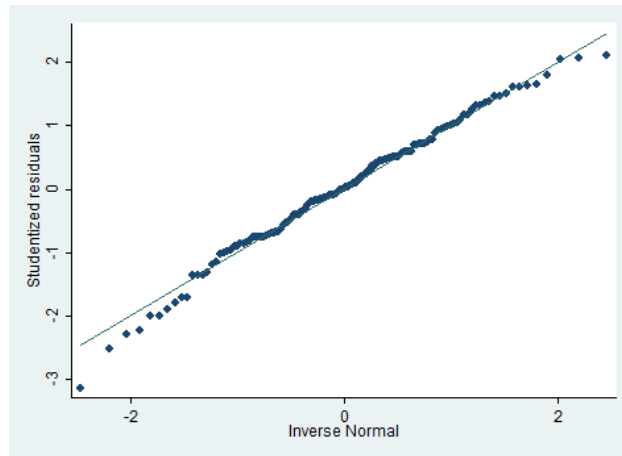
chi2(1)	=	0.02
Prob > chi2	=	**0.8804**

Appendix 4.3: Testing linearity

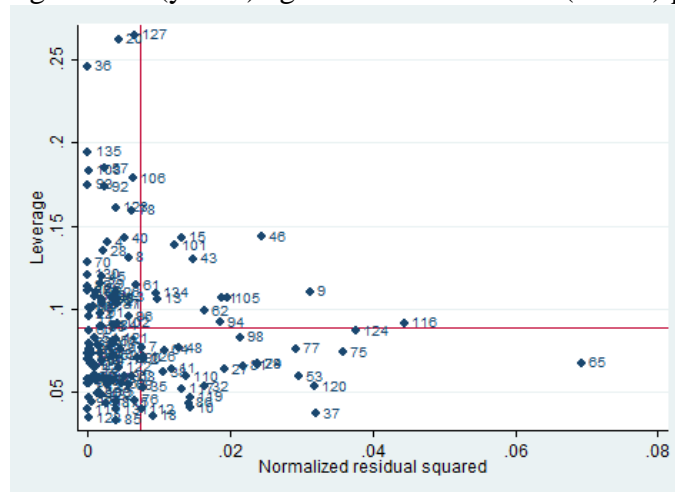Plotting residuals against fitted (predicted) values (rvfplot Stata command)

Q-Q plot of the residuals (using qnorm command on Stata)

Appendix 4.4: Identifying influential observations

Graph showing leverage values (y-axis) against residual values (x-axis) per observation

Influential observations omitted from the regression model due to high residual and Pregibon leverage [145] values.

Residual	Observation
-3.13	65
-2.50	116
-2.29	124
-2.22	75
2.05	37
2.06	120
2.11	9

Pregibon leverage	Observation
0 .265	127
0 .262	20
0 .246	36

---

[145] Pregibon leverage was discussed in appendix 2.4 in chapter 2.

Appendix 4.5: Regression results BEFORE dropping the observation with negative leverage ratio

Variable	Pred. Sign	Base Model	Winsor 1%	Normal Scores^	One report	Exc. Influential	Exc. Financial
Intercept		0.180 (1.07)	0.239 (1.44)	-1.819** (-1.99)	0.169 (0.96)	0.303* (1.91)	0.100 (0.52)
IRAGE	(+)	0.008 (1.41)	0.008 (1.43)	0.051 (1.57)	0.008 (1.33)	0.008 (1.58)	0.010 (1.53)
GRIL	(+)	0.072*** (4.85)	0.070*** (4.73)	0.391*** (4.81)	0.069*** (4.63)	0.062*** (4.70)	0.071*** (4.44)
ASSURED	(±)	0.044 (1.33)	0.046 (1.36)	0.210 (1.14)	0.043 (1.27)	0.075** (2.49)	0.060* (1.73)
BOARDSIZE	(?)	-0.002 (-0.53)	-0.002 (-0.47)	-0.008 (-0.38)	-0.002 (-0.58)	-0.002 (-0.60)	0.001 (0.23)
INDEP	(+)	0.055 (0.87)	0.071 (1.11)	0.405 (1.16)	0.072 (1.15)	0.092 (1.62)	0.056 (0.86)
FEMALE	(+)	-0.215 (-1.62)	-0.166 (-1.33)	-0.941 (-1.36)	-0.171 (-1.36)	-0.108 (-0.92)	-0.195 (-1.45)
CSRCOMM	(+)	0.044 (1.57)	0.041 (1.48)	0.212 (1.39)	0.041 (1.46)	0.039 (1.56)	-0.002 (-0.08)
BOARDTIER	(?)	0.071* (1.92)	0.079** (2.10)	0.425** (2.06)	0.077** (2.05)	0.087*** (2.61)	0.053 (1.36)
SIZE	(+)	0.010 (1.21)	0.007 (0.80)	0.044 (0.93)	0.009 (1.03)	0.003 (0.43)	0.013 (1.27)
PROFIT	(±)	0.021* (1.70)	0.082 (1.33)	0.510 (1.51)	0.080 (1.30)	0.026 (0.49)	0.093 (1.41)
LEVERAGE	(±)	-0.005 (-0.61)	-0.004 (-0.52)	-0.031 (-0.65)	-0.004 (-0.52)	-0.002 (-0.25)	0.007 (0.47)
ONEREPORT	(±)				0.040 (1.22)		
Legal origin control		Included	Included	Included	Included	Included	Included
Industry control		Included	Included	Included	Included	Included	Included
F-value		4.82***	4.76***	4.77***	4.65***	6.59***	4.93***
R^2		0.510	0.510	0.508	0.514	0.615	0.572
Adj. R^2		0.404	0.400	0.401	0.403	0.522	0.456
Max VIF		2.52	2.52	2.52	2.52	2.38	2.42
No. of Observations		136	136	136	136	124	109

* Significant at 10%;** Significant at 5%;*** Significant at 1%
^ Normal scores using Van der Waerden's Formula.

Regression results of models excluding/including CG, GRI level and assurance

Variable	Pred. Sign	M1	M2	M3	M4	M5
Intercept		0.119	0.197	0.237	0.173	0.236
		(0.58)	(1.13)	(1.41)	(0.84)	(1.46)
IRAGE	(+)	0.012		0.007		0.012*
		(1.62)		(1.22)		(1.78)
GRIL	(+)		0.068***	0.066***		
			(4.63)	(4.52)		
ASSURED	(±)		0.062*	0.062*		
			(1.86)	(1.87)		
BOARDSIZE	(+)				0.002	0.002
					(0.43)	(0.47)
INDEP	(+)				0.092	0.097
					(1.21)	(1.28)
FEMALE	(+)				-0.507	-0.062
					(-0.33)	(-0.40)
CSRCOMM	(+)				0.067**	0.063*
					(2.00)	(1.91)
BOARDTIER	(?)				0.099**	0.103**
					(2.19)	(2.30)
SIZE	(+)	0.019**	0.010	0.010	0.011	0.010
		(2.00)	(1.28)	(1.21)	(1.07)	(0.97)
PROFIT	(±)	0.083	0.034	0.030	0.122	0.116
		(1.08)	(0.52)	(0.46)	(1.57)	(1.51)
LEVERAGE	(±)	-0.008	-0.008	-0.008	-0.004	-0.005
		(-0.80)	(-0.94)	(-0.98)	(-0.41)	(-0.48)
Legal origin control		Included	Included	Included	Included	Included
Industry control		Included	Included	Included	Included	Included
F-value		1.99**	5.52***	5.33***	2.01**	2.10***
R^2		0.225	0.461	0.468	0.272	0.292
Adj. R^2		0.112	0.378	0.381	0.137	0.153
Max VIF		2.33	2.46	2.46	2.40	2.40
No. of Observations		135	135	135	135	135

* Significant at 10%;** Significant at 5%;*** Significant at 1%

Appendix 4.6: Using Durbin-Wu-Hausman (DWH) test for endogeneity

First equation:

$$GRI = \beta_0 + \beta_1 SIZE + \beta_2 PROFIT + \beta_3 INDUSTRY + \varepsilon_i$$

```
. xi: regress   gril Wsize_log Wprofitability i.industry1
i.industry1        _Iindustry1_1-11     (naturally coded; _Iindustry1_1 omitted)

      Source |       SS       df       MS              Number of obs =     135
-------------+------------------------------           F( 11,   123) =    1.62
       Model |  22.5575307    11  2.05068461           Prob > F      =  0.1014
    Residual |  155.842469   123  1.26701195           R-squared     =  0.1264
-------------+------------------------------           Adj R-squared =  0.0483
       Total |       178.4   134  1.33134328           Root MSE      =  1.1256

-------------+----------------------------------------------------------------
        gril |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   Wsize_log |   .0924291   .0599429     1.54   0.126    -.0262243    .2110824
Wprofitability|  .4162758   .5197916     0.80   0.425    -.6126199    1.445171
_Iindustry1_2|   .1593628    .472691     0.34   0.737      -.7763    1.095026
_Iindustry1_3|  -.2889725   .4512207    -0.64   0.523    -1.182136    .6041912
_Iindustry1_4|  -.0779836   .3278643    -0.24   0.812    -.7269709    .5710037
_Iindustry1_6|  -.0476416   .5265556    -0.09   0.928    -1.089926     .994643
_Iindustry1_7|  -.1149643   .3127887    -0.37   0.714    -.7341103    .5041817
_Iindustry1_8|   .7899314   .4752705     1.66   0.099    -.1508374      1.7307
_Iindustry1_9|  -.4863669   .6128259    -0.79   0.429    -1.699418    .7266845
_Iindustry1_10| -.2217936   .5460918    -0.41   0.685    -1.302749    .8591616
_Iindustry1_11|  .7156883   .4083237     1.75   0.082    -.0925633     1.52394
       _cons |  -.4075037   1.314886    -0.31   0.757    -3.010241    2.195233
```

The error (residual) term v2hat is predicted and induced into the second regression:

$$EMBED = \beta_0 + \beta_1 IRAGE + \beta_2 GRIAD + \beta_3 ASSURED + \beta_4 BOARDSIZE + \beta_5 INDEP$$
$$+ \beta_6 FEMALE + \beta_7 CSRCOMM + \beta_8 TIER + \beta_9 LEGALORGN + \varepsilon(v2hat)$$

Finally, if v2hat is significant that indicates the existence of endogeneity.

```
. xi: regress  sustainembedscores  ira gril externallyassured  Wboardsize Windependence Wfamaledirectorship csrcommitt
> ee tier i.legaloriginl v2hat
i.legaloriginl    _Ilegalorig_1-5    (naturally coded; _Ilegalorig_1 omitted)
```

Source	SS	df	MS		Number of obs =	135
					F(13, 121) =	7.86
Model	1.91539772	13	.147338286		Prob > F =	0.0000
Residual	2.2694211	121	.018755546		R-squared =	0.4577
					Adj R-squared =	0.3994
Total	4.18481883	134	.031229991		Root MSE =	.13695

sustainembedscores	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ira	.0058248	.0056576	1.03	0.305	-.0053759	.0170255
gril	.0545119	.0341658	1.60	0.113	-.0131283	.1221521
externallyassured	.053343	.0320106	1.67	0.098	-.0100304	.1167164
Wboardsize	-.0030117	.0034463	-0.87	0.384	-.0098346	.0038111
Windependence	.0649862	.0620861	1.05	0.297	-.0579295	.187902
Wfamaledirectorship	-.131084	.1255533	-1.04	0.299	-.3796498	.1174819
csrcommittee	.0556003	.0263577	2.11	0.037	.0034184	.1077823
tier	.0827291	.0363909	2.27	0.025	.0106837	.1547745
_Ilegalorig_2	.0232944	.0347983	0.67	0.505	-.045598	.0921868
_Ilegalorig_3	-.0132198	.046141	-0.29	0.775	-.1045681	.0781284
_Ilegalorig_4	.0531248	.0446548	1.19	0.237	-.0352812	.1415308
_Ilegalorig_5	-.1554648	.1086013	-1.43	0.155	-.3704697	.0595402
v2hat	.0154367	.0337744	0.46	0.648	-.0514287	.0823021
_cons	.3771054	.0682347	5.53	0.000	.2420168	.512194

```
test v2hat
(1)  v2hat= 0
F(1,  121)                                                =        0.210
Prob> F                                                   =        0.649
```

Appendix 5.1: Word cloud for GRI G4 text