

Article

Corporate Governance, Integrated Reporting and Environmental Disclosure: Evidence from the South African Context

Antonio Corvino ^{1,*}, Federica Doni ² and Silvio Bianchi Martini ³

¹ Department of Economics, Management and Territory, University of Foggia, 71121 Foggia, Italy

² Department of Business & Law, University of Milano-Bicocca, 20126 Milano, Italy; federica.doni@unimib.it

³ Department of Economics and Management, University of Pisa, 56124 Pisa, Italy; silvio.bianchi@unipi.it

* Correspondence: antonio.corvino@unifg.it

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Abstract: This research aims to investigate how the adoption of King III can affect the corporate governance model of a sample of South African listed companies on the Johannesburg Stock Exchange (JSE). Particularly, we analyzed the influence of sustainability-related issues of the board of directors (BDs) on firm environmental disclosure, after the mandatory preparation of integrated reporting (IR). In addition, we also examined in depth whether some corporate social policies are able to condition the foregoing disclosure. The empirical study covers the period from 2010 (the first-time adoption of IR in South Africa) to 2015 (the earliest year of the release process regarding King Code of Governance Principles for South Africa 2009 (i.e., King III)). Data were collected by the Bloomberg database. With reference to the BDs features, great attention was paid to both business ethics policy and CEO duality. Instead, with regard to corporate social issues, we looked into the adoption of the policies pertaining to health and safety and the respect for human rights. Following the mandatory preparation of IR, our findings show a positive relationship between business ethics policy and firm environmental disclosure. Contrarily, CEO duality does not exert any effect over the earlier type of corporate reporting. Furthermore, empirical evidence substantiates the association between health safety and human rights policies that are very crucial in an emerging economy, such as South Africa, and firm environmental disclosure. The rationale of such results arguably resides in compliance with King III. Therefore, this study can provide interesting insights, given that its mandatory adoption might reveal an important turning point in the development of corporate governance codes, as well as being a “driver” for potential enhancements of firm environmental disclosure, inter alia, in line with the Sustainable Development Goal (SDG) 12.6.

Keywords: integrated report; corporate governance characteristics; sustainability issues; health and safety and human rights policies; firm environmental disclosure; SDG 12.6; King III; Johannesburg Stock Exchange

1. Introduction

Integrated reporting (IR) can be identified as an innovative form of corporate reporting that seeks to combine financial, social, and environmental information [1,2].

IR is gaining traction and momentum around the world and the International Integrated Reporting Council (IIRC) has attracted world-leading organizations into its business network [3]. Moreover, IR has involved interest at every level across the globe, from regulators, firms, preparers, and investors. At the international level, the European Commission (EC, 2014) and Business 20 (B20, 2014) have acknowledged the importance of and the need for IR concepts [4].

It is noteworthy that the movement of IR is strongly linked to sustainability issues, as it is able to represent how an organization creates and sustains value [1,2] and to bring together economic, social, and environmental factors in response to the recent needs related to the global financial downturn [5], environmental goals, and the call for greater transparency of corporate reporting. In this regard, the key topic of SDG 12.6 should be mentioned [6,7]. In more detail, the latter recommends that companies provide sustainability information in their disclosure policy.

In addition to sustainability reporting, IR promises to radically change the management approach to business strategy and value creation and to be a consistent way to communicate with stakeholders and communities. Although there is still a high heterogeneity and a lack of clarity among the different perspectives concerning IR, an authoritative claim has emphasized the significance and the impact of the IR movement [2,8,9] as well as the need for researchers to investigate IR organizational practices. One of these aspects is the process of integrated thinking that leads to the performance of IR. The IIRC underlined the relevance of this process and the impact of IR adoption on management and the board of directors (BDs).

The concept of IR is still in progress, so it is difficult to assess the challenges and the consequences on business activities. However, some empirical studies carried out in South Africa, where IR is mandatory for companies listed on the Johannesburg Stock Exchange (JSE), have shown that it can exert a positive effect on the decision-making process through the integrated thinking and management behaviors it can incentivize [10–17]. Recently, the IIRC (IIRC; November 2016, October 2016), along with the International Corporate Governance Network (ICGN; London, December 2016, <http://integratedreporting.org/iirclondondec2016/>), pointed out a strong link between the process of integrated thinking/reporting and corporate governance. In this view, the ICGN revised the global governance principles, including the recommendation that BDs should produce integrated reports. There is also growing evidence of benefits BDs can obtain from the adoption of IR [18–21].

That said, the IIRC Framework (2013) aims “to enhance accountability and stewardship for the broad base of capitals (financial, manufactured, intellectual, human, social and relationship, and natural) and promote understanding of their interdependencies”. It is noteworthy that IR may be identified as an ideal way to address ESG data [22] and incentivize companies to enhance their social and environmental practices, with a specific focus on climate-related disclosure. This is in line with the recent announcement (December 2016) derived from the Task Force on Climate-related Financial Disclosures (TCFD) that published its first set of recommendations, focused on voluntary, decision-useful, climate-related disclosures, required as part of mainstream financial reports.

Based on these considerations, this study aims to analyze some corporate governance principles introduced by the King Code of Governance Principles for South Africa 2009 (i.e., King III) that signaled a significant shift in the corporate reporting process by requiring South African listed companies to adopt IR. The main objective of this code is to boost good corporate governance by stimulating ethical and effective leadership by the governing body. In this perspective, companies are led towards ethical behavior, a sustainability-oriented performance, adequate control by the governing body, and protecting trust in organizations, their reputations, and legitimacy [23]. This innovative change is strictly interconnected with the BDs structure by affecting some corporate governance mechanisms and enhancing sustainable practices. As several studies have confirmed [12,15,24–28], from 2010, South Africa has shown a significant transition to IR and integrated thinking, so much as to represent a unique case in the world. Among emerging countries, South Africa stands out for a relevant commitment in the development of a code of self-discipline by launching principles of corporate governance to promote a radical shift from financial to inclusive capitalism.

To carefully assess this new context from the adoption of King III, this research may add useful insights over the development of reporting processes in South Africa by evaluating if the listing requirement of IR may determine the improvement of environmental disclosure as a consequence of sustainability-oriented corporate governance structure. In addition, these findings can be useful for companies in other countries that adopted IR. In particular, our empirical analysis intends to

look into the potential association between the firm environmental disclosure score and the corporate governance features concerning some sustainability issues after the implementation of King III and the mandatory requirement of IR. In pursuing this aim, we carried out a quantitative study by formulating some research hypotheses explained in the next sections.

The focus of this research is on the IR preparation by a sample of large-sized companies listed on the JSE in order to explore whether its mandatory adoption can enhance firm environmental disclosure and improve the sustainability approach related to some corporate governance characteristics. We considered a period from 2010 (the first-time adoption of IR in South Africa) to 2015 (the earliest year of the release process regarding King III). In particular, we deemed a time frame, including the first and the last year of the earlier period, in order to examine in depth the role played by the corporate governance (CG) path against social sustainability related to social and governance dimensions in South African listed companies. We decided to investigate some characteristics concerning the leadership structure (i.e., CEO duality) and some social issues linked to the CG model (i.e., business ethics policies). This study can contribute to moving the current body of knowledge forward, in order to show intriguing insights over the implementation of the governance principles introduced by King III, especially with reference to the adoption of IR, the BDs structure, the role played by its characteristics against social sustainability, and the firms' environmental and social disclosures.

The paper is organized as follows. The Section 2 describes the background on corporate governance codes in emerging countries; the Section 3 highlights the main studies linked to the formulation of the research hypotheses; the Section 4 explains the methodological approach and the process of data collection. At last, the Sections 5 and 6 discuss the main findings and conclusions.

2. Background: Corporate Governance Codes in South Africa and IR

South Africa appears to be among the countries that tried early on to promote the principles of corporate governance strongly inspired by the Anglo-Saxon model. In September 2009, the King Committee on Corporate Governance published the third edition of the King Code of Governance Principles for South Africa 2009 (i.e., King III), which came into force on the 1 March 2010 and was based on the name of the Chairman of the Editing Committee. The edition number follows King I and King II, which were, respectively, passed in 1994 and 2002. During the worldwide financial downturn, South Africa sent out a signal of renewed trust in the code of self-discipline.

This code of conduct represents one of the most advanced forms of self-discipline and affected corporate law in a very specific way. The basic principle of King III stands in the “comply or explain” approach recalled in the Combined Code (2012) of the United Kingdom, firstly introduced in 1992 through the Cadbury Report. This principle constitutes the essence of the code's flexibility. In more detail, such code is not made up of a strict set of rules, which are contrarily replaced by principles and provisions, quite unlike the governance on a statutory basis model, where the opposite “comply” or “comply or else” rule is followed. This kind of arrangement is adopted in the United States (US), where governance is partly regulated by the Sarbanes-Oxley Act, and noncompliance is subject to sanctions. The “comply or explain” approach has been implemented in South Africa with even more flexibility, given that the term “apply” has been replaced the term “comply” in King III, thereby emphasizing the way that principles and recommendations can be applied, rather than focusing on compliance assessment [29]. The sole BD obligation established by law is “to act in the best interests of the company”: If the reasons behind the different practices adopted are made explicit, and the specifics thereof are duly illustrated, the compliance with the principles of King III is assured. However, all the principles included in the code are equally important and collectively contribute to establishing a holistic approach of governance: any “substantial application” of the code does not, therefore, imply the achievement of compliance. The main changes in King III compared with King II refer to the following scopes:

1. Applicability;
2. Board composition (Chapter 2);

3. Audit committees (Chapter 3);
4. Risk management (Chapter 4);
5. IT governance (Chapter 5);
6. Internal audit (Chapter 7);
7. Stakeholder inclusive model (Chapter 8);
8. Integrated reporting (Chapter 9).

With reference to the first point, King III is applicable to any type of companies (entities) regardless of the sector they belong to. Therefore, the generalized adoption of principles concerning corporate governance is envisioned with regard to any company circumstances: this novelty can definitely be appreciated, even though it requires preparers and stakeholders, in general, to be thoroughly knowledgeable as to the technical aspects of governance by considering that the most suitable principles and recommendations will have to be chosen on the basis of firm size, peculiarities, and complexity. In light of this, some aspects, such as staff training, a higher level of disclosure, and the transparency of the decision-making process, will be crucial.

The main objective of the King III Report—and now the King IV Report (the King Committee published the King IV Report on Corporate Governance for South Africa 2016 (King IV) on 1 November 2016. King IV came into force after the 1 April 2017 and replaced King III. King IV is principle- and outcome-based rather than rule-based, and it confirms the strong link with IR)—is to promote good corporate governance as a driver for ethical and effective leadership by the governing body. This aim can be reached through an ethical culture, a sustainable performance, adequate control by the governing body, and the protection of firm trust, reputation, and legitimacy. The principles of “good governance” issued by King III—and then by King IV, which was launched at the end of the year 2016 (November 2016)—can also be evaluated in view of an innovative model of corporate reporting such as IR [30,31], which has been a mandatory requirement for South African listed companies since 2010 [24,25].

In addition, the JSE launched the SRI index (JSE, 2005) as a system to identify those companies incorporating the principles of the triple bottom line and good corporate governance into their business operations.

Moreover, IR can be seen as an optimal solution to the lack of adequate information within the annual report. The traditional financial reporting model is unable to capture the economic consequences of business innovations [32], and it is becoming more complex and less relevant to shareholders. There is a growing number of companies providing nonfinancial information, but very few organizations are able to integrate financial and nonfinancial information in an effective way. IR is a potential solution as it may be defined as “a concise communication about how an organization’s strategy, governance, performance, and prospects, in the context of its external environment, lead to the creation of value in the short, medium, and long term” [33].

3. Literature Review and Research Hypotheses Development

The academic and professional debate regarding IR is still in progress and can be defined as “a contemporary research field”, as confirmed in the first comprehensive literature study conducted by Dumay et al. (2016) [34].

Although there is still high heterogeneity and a lack of clarity among the different points of view, an authoritative claim has emphasized the significance and the impact of the IR movement [2,8,30], as well as the need for researchers to primarily look into the organizational implications [35,36].

Several studies in the international arena have investigated the evolution and characteristics of the corporate governance model adopted in Africa, particularly in South Africa [37], and the peculiarities pertinent to the issued codes [38–41].

An interesting field has explored the relationship between corporate governance and the process of disclosure. Corporate governance mechanisms might be efficient, provided that the communication

of information is transparent, as far as possible, in order to reduce information asymmetries between ownership and management, consistently with the agency theory [42]. The importance of the foregoing factors is revealed not only in industrialized countries but also in those belonging to the so-called emerging economies, such as the BRIC countries (i.e., Brazil, Russia, India, and China), that has changed to BRICS after the inclusion of South Africa in 2011 [43]. Particularly, South Africa's position has to be highlighted, notable for having played a pioneering role in the development of a code of conduct since the 1990s (King I, 1994), followed in later years by three other documents (King II, 2002; King III, 2009; King IV, 2016). In addition to the establishment of issues with respect to firm disclosure, the novelty of the King Code of Governance Principles for South Africa 2009 [44] resides in the requirement of preparing IR from 1 March 2010 for companies listed on the JSE [24–26].

That said, it is important to consider the strong correlation between IR and sustainability issues [45,46]. The IIRC Framework (2013) aims “to enhance accountability and stewardship for the broad base of capitals (financial, manufactured, intellectual, human, social and relationship, and natural) and promote understanding of their interdependencies”. It is noteworthy that IR may be identified as an ideal way to address sustainability data. Some large pioneer companies argued that IR and environmental, social, and corporate governance (ESG) issues will be more and more important over the coming years (i.e., Snam, Gold Fields). Along this line of reasoning, a previous study has demonstrated a strong association between IR and ESG disclosure [47], which was also confirmed by Richard Howitt, who is the current CEO of the IIRC.

Recently, in the international context, the type and the extent of sustainability information disclosed by organizations to shareholders, potential investors, and other stakeholders can produce a relevant positive impact on several internal and external factors and determinants within companies [48]. The development of sustainability reporting, as well as the boost of corporate social responsibility (CSR) practices, should not be seen as a concern isolated from the main organizational performance [49] or as a mere operation of impression management [50,51] or an activity of “greenwashing” [52] but as a part of the value-driving initiatives and management processes of an organization [1,2]. Taking into account the lack of sustainability reporting standards and hence the relevant differences among various industries and countries, there is a strong need to recognize the best practices regarding the three “pillars” of sustainability factors: environmental, social and governance (ESG) issues.

The 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC) achieved an unprecedented agreement on limiting global warming and a key milestone in the global shift towards better and more comprehensive nonfinancial corporate reporting over companies' exposure to climate change for investors, credit rating agencies, insurers, and other users of annual reports [53]. This important event has enhanced the growing interest in environmental issues, leading to a more general concept of corporate environmental performance that can be described as the consequences from actions carried out or measures adopted by firms on natural resources [54]. A positive judgment on firm environmental performance is due to careful respect for the earth and its ecosystems [55]. The field regarding firm environmental disclosure can be included in the area of sustainability reporting and situated as a well-known topic in the accounting and accountability areas, *inter alia*, largely debated by both academia and professional audiences [56]. In addition, such fields have received great attention from the SDG 12.6, given that companies, in particular, those that are large and transnational, are stimulated to give sustainability information in their disclosure policy [57–59].

Similarly, the corporate governance (CG) stream has gained momentum over the last decades by becoming one of the most discussed areas of organizational studies [60]. Recent collapses, corporate frauds, and the crisis of investor confidence have moved toward the development of ethical codes and the companies' orientation to a more sustainable corporate governance model [61–63].

Past corporate scandals have boosted the debate on whether companies should include corporate social responsibility (CSR) elements as part of their corporate goals or focus exclusively on maximizing shareholder returns [64]. It is noteworthy that CG literature sheds light on a relevant nexus between

governance structures and sustainability concerns [60], also in emerging countries [65,66]. By this route, some studies have emphasized the link between CG and CSR, with a specific focus on sustainability reporting [67,68]. From the practitioner's perspective, companies are able to demonstrate their commitment to sustainability to all stakeholders by establishing a CSR committee or a specific officer or department with a focus on CSR activities [69]. In some cases, the use of BDs orientation toward CSR issues has been investigated, but with different results [70,71]. On the other hand, some interesting research has highlighted the role of CSR committees in improving ESG performance [72,73].

Still, some studies have underlined the CG characteristics oriented to firm social sustainability and their association with ESG reporting [74,75], with a specific focus on environmental issues. However, they have provided mixed or unclear findings [76–78]. Nevertheless, we expect to find a positive influence by business ethics policy over environmental disclosure, in view of the sustainability-oriented principles included and highlighted in specific parts of King III. Hence, we posited that

Hypothesis 1. *The adoption of business ethics policy is positively associated with environmental disclosure.*

Other studies have looked into the relationship between management and CSR. In this field, some research has explored the role of BDs in terms of size, diversity, and leadership structure [10,79]. In particular, we would like to pay attention to the last BD characteristic, namely, CEO duality. Empirical analyses, focused on CEO duality, have been carried out, but findings are not univocal [80,81]. In addition, some companies have adopted key performance indicators (KPIs) related to ESG for determining CEO compensation [82]. Indeed, prior research has highlighted that CEO power is negatively correlated to ESG disclosure, and it can inhibit CSR practices [83]. Particularly, CEO duality may negatively influence the firm's propensity to ESG disclosure in both developed economies [74,75,84] and emerging countries [85,86]. Contrarily, other studies did not demonstrate any effect of CEO duality on sustainability disclosure [75,86,87]. It is worthwhile to note that countries with a high ownership concentration show a positive influence of CEO duality on sustainability disclosure [84–86,88]. Despite a large extent of literature on CEO duality and financial performance in the African context [85,86,89,90], there is a lack of analysis focused on South Africa [88–91] that may attract an increasing interest because of the mandatory adoption of IR. From this view, we formulated the second hypothesis:

Hypothesis 2. *CEO duality is positively associated with environmental disclosure.*

South Africa listed companies, especially with reference to some industries, such as the mining sector [89–94], show high managerial risk with regard to ethical and social issues [95]. Prior studies have indicated that the engagement in greater corporate health practices can help bring harmony between corporate goals/norms and those of the larger society [96,97] by legitimizing company operations and improving firm reputation and image. In more detail, the corporate health practices were evaluated as a crucial matter within ESG disclosure in African countries, with a specific focus on HIV/AIDS disclosure [92–95,98]. In this perspective, we would like to assess the potential influence of the BD policies to improve health practices on environmental disclosure, as these topics are both relevant from a legitimacy perspective [92–94,98]. Hence, building on the considerations abovementioned, we set the following hypothesis:

Hypothesis 3. *The adoption of corporate policies focused on health and safety is positively associated with environmental disclosure.*

Other crucial issues within the social dimension are related to human rights. Its relevance is particularly evident in companies operating in high human-rights risk countries [93–99], such as Africa [94–100], given that they produce high disclosure on human rights. In this study, we focus on corporate policies on human rights and on the BD propensity to adopt policies for easing community from human rights violations. This aspect is included in Principles 1.2 that has been issued by King

III, and it reveals a highly sensitive approach to these topics. Moreover, such aspects can positively affect sustainability-related disclosure, with a specific focus on environmental issues because of the strict link between human rights and some environmental challenges [98–101], such as climate change, water depletion, and informal settlements [44]. Along this line of reasoning, we formulated the following hypothesis:

Hypothesis 4. *The adoption of corporate policies focused on human rights respect is positively associated with environmental disclosure.*

4. Research Methodology: Data and Empirical Study Features

The empirical study is centered on a sample of 403 large-sized companies listed on the JSE. We only used secondary data and the main source was the Bloomberg database. The latter is a distinguished data source with specific respect to ESG information. Data collection covers the following fiscal years:

- 2010, as 1 March 2010 is the cut-off date from which JSE then required listed companies to prepare IR;
- 2013, the year when the IIRC published the latest release of the framework for IR;
- 2015, the earliest year of the release process regarding King III. Moreover, it is the latest year fully covered, given that afterwards, we gathered ESG data from April to September 2016.

This selection criterion of the time frame pursues the aim of investigating the stepwise alignment of annual reports to the IIRC's framework for IR, albeit, through the King III Code of Corporate Governance, JSE settled the mandatory adoption.

Overall, the observations are equal to 1209. In this regard, it is worthwhile pointing out that there is a lofty number of missing values, as ESG information often implies relevant difficulties with respect to data collection activity and the latter is not frequently available. Nonetheless, the total number of observations is equal to 338, so that the sample size can be considered sufficiently representative. Indeed, our sample amounts to 27.96% of the statistical population (i.e., 338 out of 1209 observations).

In our research design, the dependent variable is the environmental disclosure score and it gauges the firm's attitude to disclose environmental data. In the Bloomberg database, it ranges from zero to 100 (Table 1). The code of the foregoing variable is *env_disc_score*.

Table 1. Description of the variables.

	<i>Variable Name</i>	<i>Measure</i>	<i>Expected Sign</i>
Dependent variable	<i>env_disc_score</i>	This score measures the firm transparency pertinent to environmental information. Data sources are both annual and sustainability reports, press releases, as well as third-party research. It ranges from zero to 100. A firm can gain the maximum score as long as it discloses every data point gathered by Bloomberg. Data points cover several environmental scopes, such as carbon emissions, climate change effects, pollution, waste disposal, renewable energy, resource depletion, and so on. Moreover, specific weight is attributed to each data point on the basis of its relevance. For instance, the disclosure over greenhouse gas emissions has a higher weight than other types of environmental information.	
Independent variables	<i>business_ethics_policy</i>	This variable indicates whether the firm has established ethical guidelines and/or a compliance policy for its management/executive employees in the conduct of company business.	+
	<i>ceo_duality</i>	This variable points out whether, in the corporate governance model, the positions of both CEO and Chairman are performed by the same member of the BDs.	+
	<i>health_safety_policy</i>	This variable highlights whether the company puts policies in place to safeguard the health of its employees.	+
Control variable	<i>human_rights_policy</i>	This variable indicates whether the company puts policies in place to prevent human rights abuses.	+
	<i>staff_csr_training_cost</i>	This variable shows the annual total amount of expenditure allocated to staff training on CSR issues.	+

Thereafter, consistently with the research hypotheses mentioned above, we deemed four independent variables. Drawing upon earlier studies [102–106], with reference to the CG characteristics related to sustainability issues, we selected the adoption of business ethics policy in order to explore its influence over firm environmental disclosure, especially after the recent corporate scandals [107] and the growing adoption of codes of ethics [108–110].

However, with respect to the leadership structure in BDs, building on prior studies [87,111], *inter alia*, focused on the South African context [112], we opted for CEO duality to investigate whether the huge concentration of power in a single person conditions a firm's environmental disclosure.

Both the previous variables are dummy and they, respectively, take the values of 1, whether the company implemented business ethics policies or whether, according to earlier research pertinent to BDs [113–115], the remits of CEO and Chairman are performed by the same person. Otherwise, such variables take the value of zero. Their codes are *business_ethics_policy* and *ceo_duality* (Table 1).

In considering the opportunity to address some specific corporate social issues that are very common in emerging economies, we picked out the following independent variables: the adoption of health and safety and human rights policies. According to Camilleri [116], in the South African context, they can provide further cues as a consequence of the publication of a regulatory instrument, such as the King Report. In fact, the latter emphasizes the prominence of safeguarding the health and safety of staff and the prevention of human rights abuses [38,117]. Therefore, the foregoing policies enable stakeholders to appreciate different CSR perspectives and, at the same time, improve firm disclosure in terms of greater accountability and transparency [118–120].

Like before, they are dummy variables and take the value of 1, whether the company adopted health and safety or human rights policies (Table 1). Both take the value of zero otherwise. We assigned the following codes: *health_safety_policy* and *human_rights_policy*.

Additionally, with reference to the control variable, we considered the cost of staff training on CSR issues (Table 1). The latter is a continuous variable and we assigned the following code: *staff_csr_training_cost*. Against prior studies [30,121–126], widely based on firm size, as a consequence of its influence over the company's commitment to CSR issues, such a variable was selected with the aim of paying greater attention to the organizational perspective pertinent to the culture and, in

particular, to human capital development on CSR items. This methodological choice takes root in other earlier research [127–132]. Moreover, firm size might not be particularly insightful, in order to control the relationships we aim to explore, as our sample consists of large-sized companies listed on JSE.

Given the longitudinal perspective of the empirical study, a panel data regression model was run. Specifically, we opted for the fixed effects (FEs) regression model, as, for each company included in our sample, during the time frame of 2010–2015, the purpose of the quantitative research pertains the influence exerted over firm environmental disclosure by the CG model and, in particular, by both its characteristics related to sustainability issues and the leadership structure of BDs. In addition, we analyzed the association between some specific corporate social issues and the foregoing type of disclosure. In other words, whether and to what extent the single event, such as the mandatory IR preparation and the issue of the IIRC framework, occurred, respectively, over the fiscal years 2010 and 2013, is able to influence the following relationships between (see Figure 1 for having an overall picture over the rationale of the empirical study):

1. CG characteristics related to sustainability issues and firm environmental disclosure, and
2. Corporate social policies and firm environmental disclosure.

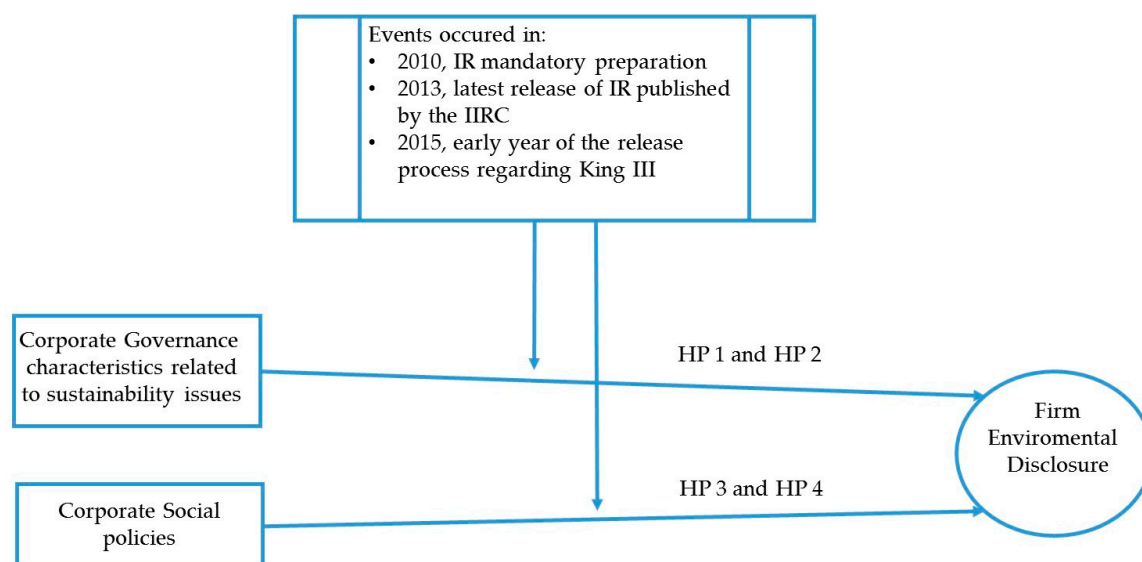


Figure 1. The rationale of the empirical study.

The formula of the statistical model is reported below:

$$\begin{aligned}
 env_disc_score_{it} = & \beta_1 business_ethics_policy_{it} + \beta_2 ceo_duality_{it} + \beta_3 health_safety_policy_{it} \\
 & + \beta_4 human_rights_policy_{it} + \beta_5 staff_csr_training_cost_{it} + \alpha_i + u_{it}
 \end{aligned}$$

This methodological choice was also supported by the result deriving from the Hausman test [133]. Indeed, FEs are suitable for our dataset, given that the rejection of the null hypothesis implies that the difference in coefficients is systematic [134].

5. Discussion of Findings

Table 2 exhibits the findings pertinent to the descriptive statistics. In more detail, in terms of transparency related to environmental disclosure, the highest score is equal to 65.29, while the mean value amounts to 26.3610. Given that the maximum value is 100, such finding puts in evidence that the South African large-sized companies listed on JSE have yet to improve their disclosure in order to

better recognize institutional prescriptions and consequently reinforce their legitimacy. The standard deviation is 14.3516, and it shows a high level of dispersion from the mean.

Table 2. Descriptive statistics.

Variable	Observations	Mean	Std. Dev.	Min	Max
<i>env_disc_score</i>	285	26.3610	14.3516	2.33	65.29
<i>business_ethics_policy</i>	307	0.9316	0.2528	0	1
<i>ceo_duality</i>	338	0.0030	0.0544	0	1
<i>health_safety_policy</i>	306	0.9542	0.2093	0	1
<i>human_rights_policy</i>	307	0.5277	0.5000	0	1
<i>staff_csr_training_cost</i>	197	134,000,000	262,000,000	2935	2,300,000,000

Still, it is insightful to emphasize that in this geographical area, CEO duality is not a very common feature of the CG model, as the mean is close to zero. The rationale most likely resides in the fact that the King Code explicitly recommends the separation of the positions of CEO and Chairman in the BDs [38].

Furthermore, it is reasonable to argue that the compulsory adoption of the King Code stimulates the implementation of business ethics and health and safety policies. In fact, their averages are nearly 1. By contrast, only half of the companies included in our sample took up human rights policies. Such a result deserves specific attention, despite the clear recommendation provided by the foregoing code.

The investments allocated with the aim to improve human capital have acknowledged that CSR issues are characterized by a wide range, so much that the level of dispersion from the mean is prominent. Despite the entry into force of the King Code, firms' attitudes against human capital development are still manifold.

Table 3 displays the results concerning the bivariate analysis we carried out by way of Pearson correlations. In more detail, we took into account just the independent variables in order to detect the presence of possible multicollinearity problems.

Table 3. Pearson correlation matrix.

	1	2	3	4	5
1. <i>business_ethics_policy</i>	1 (N = 307)				
2. <i>ceo_duality</i>	0.0156 (N = 304)	1 (N = 338)			
3. <i>health_safety_policy</i>	0.3736 * (N = 306)	0.0127 (N = 303)	1 (N = 306)		
4. <i>human_rights_policy</i>	0.1313 * (N = 307)	0.0545 (N = 304)	0.1994 *** (N = 306)	1 (N = 307)	
5. <i>staff_csr_training</i>	−0.0204 (N = 197)	0.0241 (N = 194)	−0.0569 (N = 196)	0.1215 (N = 197)	1 (N = 197)

Significance level: * $p < 0.05$; *** $p < 0.001$.

Such problems should not come up, given that Pearson coefficients never overcome the critical threshold of |0.80| [135,136]. Indeed, the maximum value of the Pearson coefficient is equal to 0.3736 (p -value < 0.05), and it pertains to the correlation between the following independent variables: *business_ethics_policy* and *health_safety_policy*.

Besides this, with the aim to further tackle the multicollinearity problems, it is worthwhile mentioning that we also performed the variance inflation factors (VIFs) test, and the corresponding mean value is below the crucial bound of 10 [137,138].

Table 4 sets out the FEs regression model for panel data. In particular, HP1 is confirmed (i.e., 15.4195; p -value < 0.05), while HP2 was not supported by our findings (i.e., 3.6502; p -value > 0.10).

Table 4. Fixed effects (FEs) regression model for panel data.

<i>Variable Dependent: env_disc_score</i>	<i>Expected Sign</i>	<i>Beta Coefficients</i>	<i>Standard Errors</i>	<i>t</i>
<i>business_ethics_policy</i>	+	15.4195 *	6.1361	2.51
<i>ceo_duality</i>	+	3.6502	7.9892	0.46
<i>health_safety_policy</i>	+	14.8508 **	5.0165	2.96
<i>human_rights_policy</i>	+	4.5284 *	2.2157	2.04
<i>staff_csr_training_cost</i>	+	2.1800	3.2200	0.68
No of Observations		188		
R ² within		0.232		
F-statistic		5.98 ***		
Hausman Test		10.10 *		

Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

With reference to business ethics policy, in the view of addressing institutional prescriptions [96] and improving or upholding legitimacy [139], our empirical evidence is in line with previous research [140,141], given that such corporate governance feature has a positive effect on firm disclosure centered on environmental issues.

In paying attention to CEO duality, though the positive sign of the beta coefficient, it should be highlighted that our findings are consistent with prior studies for which the influence over firm environmental disclosure is absent or negative [87,111,112,114,115]. Therefore, in light of the agency theory [142], such results suggest that firm environmental disclosure does not benefit from the concentration of the power in a single member of the BDs.

Moreover, it should be noted that our findings substantiate HP3 and HP4. In other words, in the South African context, as a consequence of the compliance with King III, the implementation of health and safety and human rights policies positively affect firm environmental disclosure. In line with prior studies [139,143,144] and in accordance with the institutional theoretical construct [96], the mandatory focus on specific social issues engenders favorable implications over corporate reporting.

Beyond the positive sign, similar to HP1, it is interesting to note the relevant value of the beta coefficients, especially with reference to the independent variable named *health_safety_policy* (i.e., 14.8508; p -value < 0.01).

However,, the control variable is not statistically significant. In fact, the costs pertinent to staff training over CSR issues are not positively associated with the dependent variable (beta coefficient: 2.1800; p -value > 0.10). Therefore, contrary to earlier research [130,131], our results underline that in an organizational perspective meant to enhance corporate culture, human capital development on CSR items does not exert any influence over firm environmental disclosure.

The key feature of the present FEs regression model is the “R-square within”, which is equal to 23.2%, and the F-statistic, which amounts to 5.98; it is significant at 0.001. To check the reliability of our empirical evidence, we applied some basic statistical tests. In particular, as said before, Hausman’s test confirmed the methodological choice for the FEs regression model ($\chi^2 = 10.10$; p -value < 0.05).

6. Discussion and Conclusions

IR can be considered a tool to achieve good CG by improving its structure and the practices [19,21,145]. This is a crucial aspect emphasized by the IIRC in terms of enhancing the role of the BDs. In particular, the process of integrated thinking can help the BDs to develop long-term strategies that take into account the multiple capitals represented in the business model [146]. The BDs can actively communicate the tradeoffs between capitals and outcomes for business and society, with a positive effect on the process of decision-making and on the building of trust and reputation inside the business and with stakeholders. In the same view, the ICGN revised Global Governance Principles to include the recommendation that BDs should produce integrated reports.

South Africa is the “pioneer country” of IR, given that listed companies are obliged to adopt both this new kind of annual report and the CG principles issued by King III (and now, by King IV).

It also represents one of the most important emerging economies within BRICS countries, and the topic of CG has become more and more relevant. South African listed companies need to improve their nonfinancial disclosure in order to compete globally and meet the expectations of potential investors [147].

The requirement pertinent to IR mandatory preparation, settled by King III, can be evaluated as an important milestone in terms of relevant impact on environmental reporting for South African companies. The latter are furthermore obliged to comply not only with King III (and now, with King IV) but also with the SRI (social responsibility investment) index. In addition, there is strong pressure exerted by stakeholders to increase the amount of information, in particular with respect to health and safety and human rights. In this sense, some authors have investigated the links among CG, shareholder composition, BDs structure, and the firm's social sustainability policies [70,135,148,149].

Drawing upon those previous studies, our empirical evidence contributes by fueling the academic debate around the effective support given by mandatory requirements (i.e., King III) in terms of enhancement of firm environmental disclosure, inter alia, in line with SDG 12.6 [150,151], thanks to either the role played by some corporate governance characteristics, pertinent to sustainability issues and the leadership structure of BDs, or the implementation of specific corporate social policies meant to promote health and safety and the safeguard of human rights.

In more detail, consistent with earlier studies [87,99–101,152], our findings demonstrate the absence of any influence of the leadership structure, i.e., CEO duality, on firm environmental disclosure. Still, our study confirms the importance of a sustainability-oriented corporate governance structure, in terms of adoption of business ethics policies, health and safety practices, and care for human rights [152,153]. Specifically, our research provides more extensive information on the relationship between corporate governance characteristics and environmental quantity disclosure in comparison with the study by Ofoegbu et al. (2018) [154] that showed a significant association between board size, the presence of an environmental committee, membership with environmentally sensitive industries, and the extent of environmental disclosure. The presence of a strong regulatory framework and a legal reporting environment (i.e., King III and IR) ensure that companies seem to be proactive towards ESG issues, as some previous studies have confirmed [78,91,154–159].

In particular, the contribution of this paper to the current body of knowledge may be twofold:

- (a) It is able to extend the early findings by carrying out an empirical analysis on South Africa, which is the unique case of IR mandatory adoption in the world.
- (b) It can emphasize the crucial role played by the IR requirement and by the principles issued by King III to link social issues, such as health and safety and human rights policies, to the firm's attitude to improve its environmental disclosure.

Conversely, the main caveat of this empirical analysis pertains to the focus, as it is concentrated on just one country, albeit, as said before, South Africa being one of the most important emerging economies within the BRICS group, featuring mandatory adoption of IR. In this regard, after having looked into a single specific context, we call for further studies centered on a cross-country comparison, given that IR preparation—though from a voluntary view—will be increasingly widespread over the next few years. Indeed, it could be interesting to enlarge the period in order to probe the influence exerted by the release process of King III, at least two years after the fiscal year of 2015. Another fruitful research avenue concerns the possible relevance of firm size, as we gave our attention to large-sized companies only. In other words, the next empirical study could examine in depth whether and to what extent firm size is able to influence our findings.

At last, though in a single specific context, such as South Africa, it is insightful to investigate whether and to what extent both the industry and the King IV Report might positively condition firm environmental disclosure policies.

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