Received: 13 February 2023 | Revised: 1 September 2023 | Accepted: 2 October 2023

DOI: 10.1002/csr.2642

RESEARCH ARTICLE

Corporate Social Responsibility and Environmental Management

WILEY

The progression of disclosures in the basic materials industry of South Africa

Elda du Toit[1] | Pieter Willem Jacobus Delport[2]

[1]Department of Financial Management, University of Pretoria, Pretoria, South Africa

[2]Department of Geology, University of Pretoria, Pretoria, South Africa

Correspondence
Elda du Toit, Department of Financial Management, University of Pretoria, Pretoria 0002, South Africa.
Email: elda.dutoit@up.ac.za

Abstract

Considering debates surrounding the usefulness of integrated reporting for decision-making, this exploratory study uses objective measures to investigate the quality of disclosures other than financial in the basic materials industry of South Africa. Annual and integrated reports for the basic materials and consumer discretionary industries are evaluated over 12 years, from 2008 to 2020 for a total of 1204 firm-year observations to investigate whether (1) integrated reporting brought positive change and (2) whether reporting improved over time. Readability and narrative tone analyses are conducted, and non-parametric Kruskal-Wallis tests are used to investigate the development of these measures over time. The results show that corporate reports in the basic materials industry decreased in quality over time in that the reports have become longer, less readable, and use specific narrative tones, which can create biases. The findings reveal that the declining quality of reports in the basic materials industry could mislead or deter investors, challenge regulatory oversight, and ultimately, impact firms' social licence to operate. Thus, they offer actionable insights for firms to improve disclosure by reducing complexity and length and adopting a neutral narrative tone to mitigate biases, thereby making these reports more accessible and useful for a wider stakeholder audience. In addition, investors ought to demand better reporting, and regulators should tighten guidelines.

KEYWORDS

agency theory, annual report, disclosure, integrated report, legitimacy theory, narrative tone, readability

1 | INTRODUCTION

The corporate reporting environment is always changing. One major force behind change is the rising understanding that standard financial and other corporate reports fall short of meeting the information needs of a variety of stakeholder groups (Atkins et al., 2015; Oll & Rommerskirchen, 2018). To provide a more comprehensive understanding of an organisation's value generation and performance, the International Integrated Reporting Council (IIRC) encourages the integration of both financial and other information in a single report (IIRC, 2021) and thus urges businesses to create integrated reports as the norm in corporate reporting to describe how a firm develops long-term sustainable value (De Villiers et al., 2016). The Value Reporting Foundation (VRF) and the International Sustainability Standards Board (ISSB) share this view, indicating that the IIRC Framework will remain the standard for corporate reporting (Amato, 2022; IFRS, 2022).

According to the IIRC, integrated reporting enables businesses to deliver more attentive information to investors' needs. This was also emphasised by Arvidsson and Dumay (2021). Several academics support the integrated reporting agenda (Coulson et al., 2015; Eccles & Armbrester, 2011). According to their viewpoint, integrated reporting represents a paradigm shift in corporate reporting practices with several beneficiaries both inside and beyond the reporting company. However, despite the possible benefits, the integrated reporting movement has lost some of its momentum and has been the focus of intense discussion and criticism (Flower, 2015; Oll & Rommerskirchen, 2018; Stubbs & Higgins, 2014; Zhou et al., 2017). Dumay et al. (2016) call for research that critiques integrated reporting language and practice, showing distrust in integrated reporting.

In addition to investors, an integrated report should also aim to provide information to all stakeholders that have an interest in an organisation's ability to create value holistically over time, including employees, customers, suppliers, business partners, local communities, legislators, regulators, and policy-makers (Barth et al., 2022; IIRC, 2021). It is important that companies operating in the basic materials industry specifically recognise the diverse group of stakeholders that their operations may have an impact on including not just the locals who live close to the companies' operations but also the local farmers, artisanal miners, workers, contractors, or migratory workers (Puro, 2023). We contend that the time is opportune to assess the development of reporting to assess the progress to the current state of integrated reporting quality to establish whether the reports are of sufficient informational value to be useful to stakeholders for decision-making. The study is directed by the agency and legitimacy theories relating to the motivations behind corporate disclosures and aims to answer two research questions, namely (1) How has the adoption of integrated reporting affected the length, readability, and bias of corporate reports in the basic materials industry, and how can these changes be explained through the lens of agency and legitimacy theory?, and (2) To what extent has the quality of integrated reports improved since the inception of the integrated reporting movement, and how can these changes be attributed to the influence of agency and legitimacy theory in shaping the reporting practices of companies in the basic materials industry?

To accomplish this, we analysed *annual reports from 2008 to 2010* and *integrated reports from 2011 to 2020* for companies in the basic materials industry.[1] The reports from the basic materials industry are compared with an unrelated and less environmentally sensitive industry, namely the consumer discretionary industry, to provide more insight into the disclosures of the basic materials industry. The results highlight whether the integrated reporting movement has brought improvements in the quality of reporting since 2011 and whether integrated reporting quality has improved since its inception. The study makes use of objective measures to measure reporting quality namely report length, readability, and narrative tone (or bias), as well as the use of forward-looking disclosures stakeholders need to make decisions about the future of a company, and the companies' level of disclosure in terms of sustainability. Non-parametric Kruskal-Wallis statistical tests are conducted to investigate the development of disclosure over time.

South Africa as a location for the study and the basic materials industry as a sample are warranted. The basic materials industry has a significant impact on the environment and communities and various stakeholders have an interest in the operations of these companies. South Africa is at the forefront of the Integrated Reporting movement and thus presents the perfect location to conduct a study on the quality of disclosures other than financial. Our empirical evidence is based on a sample of South African companies registered on the Johannesburg Stock Exchange (JSE), as in previous studies on integrated reporting (Barth et al., 2022; Barth et al., 2017; Zhou et al., 2017). Another advantage is that, while numerous companies provide integrated reports voluntarily in many countries, companies with a principal listing on the JSE are de facto required to do so. As a result, there is no self-selection bias resulting from voluntary reporting incentives.

This research fills a gap by focusing on the quality of the disclosures that are unregulated (i.e., non-IFRS disclosures) in South Africa's basic materials industry. While existing literature predominantly accentuates the positive aspects of corporate disclosure and integrated reporting, this study offers a more nuanced understanding. It calls attention to the areas where there is a deficit in current practices and suggests that improvements are not only possible but may necessitate regulatory intervention or even legislative measures for optimal effectiveness. Unlike financial reporting, which is governed by stringent accounting standards and audits, narrative disclosures remain largely unregulated, leading to inconsistencies and variations in quality. The paper contributes to the body of knowledge on disclosures other than financial, including sustainability disclosures (Arvidsson & Dumay, 2021; Bochkay et al., 2021; Christensen et al., 2021; Grewal et al., 2021) by making use of objective measures to investigate the extent and progression of reporting other than financial in the basic materials industry specifically. Through readability and narrative tone analyses across 12 years, our study reveals a concerning decline in the quality of these disclosures.

These longitudinal insights offer actionable recommendations for companies to improve disclosure practices, for investors to advocate for better reporting, and for regulators to develop more comprehensive guidelines. This multi-dimensional approach provides a more complete picture of disclosure quality, thereby serving the diverse needs of companies, stakeholders, and regulatory bodies. Aside from informing the International Financial Reporting Standards (IFRS) and the ISSB while they adopt aspects of the Integrated Reporting Framework, the study's results could be of interest to other financial and corporate disclosure regulatory bodies worldwide.

Our findings also have societal implications, as improved disclosures can better inform stakeholders, from individual investors to environmental advocacy groups, about a firm's sustainability and operational practices.

The paper is organised as follows. The next section presents a literature review, including a theoretical foundation for the research.

[1]The basic materials industry refers to companies involved in activities related to extracting natural resources in the form of metals, minerals, and aggregates from the earth for various purposes.

This is followed by a discussion of the research method and results. The paper concludes with some final thoughts on the results and suggestions for practice and future research.

2 | ORIGINS AND DEVELOPMENT OF CORPORATE REPORTING

Corporate reporting evolves continuously. More than 20 years ago, Beattie (2000) already recognised that the external reporting environment was changing and indicated the need for subsequent changes to corporate reporting practices, especially forward-looking and other narrative disclosures other than financial. This is an on-going process and significant changes have been seen in reporting since, most momentous the introduction of integrated reporting. The IIRC was founded in 2010 to create a framework for integrated reporting with two main purposes, namely (1) to increase the quality of information available to outside providers of financial capital, and (2) to encourage integrated internal thinking, decision-making, and activities that provide value to the company. Integrated reports are full, separate reports that are becoming increasingly popular to provide stakeholders with a single document with a holistic overview of what a company does. The IIRC prepared a guideline, called the International Integrated Reporting Framework to assist companies in preparing an integrated report (IIRC, 2013). The framework has been subsequently revised to further improve the quality of information companies make available to stakeholders (IIRC, 2021). According to the IIRC (2021) Framework, an integrated report should be a *concise* communication about how a company creates value over the short-, medium- and long-term through its strategy, governance, performance, and prospects, in the context of its external environment. This report should be presented in a combination of quantitative and qualitative information, thus including sufficient information other than financial. The goal of integrated reporting is to ensure useful information for all stakeholders through it being high-quality and relevant (Du Toit et al., 2017; Zhou et al., 2017) which allows them to make sound decisions (Raemaekers et al., 2016). The IIRC specifically warns against the use of boilerplate language that is not specific to the company (IIRC, 2021).

Financial statements, prepared in compliance with applicable financial accounting standards, are still an important component of corporate reporting, but it is becoming more important that companies combine financial and other data to inform a wider set of stakeholders. Investor interest in the information, which goes beyond financial, has risen considerably in recent years, and the belief is that reporting and disclosure initiatives, particularly around sustainability, will remain of interest to investors and other stakeholders. According to a survey of over 300 institutional investors by Ernst & Young, 72% of investors indicated in 2020 that they conduct a structured and methodical examination of performance based on business disclosures other than financial, compared to 32% in 2018 (Barth et al., 2022). Even though companies mostly focus on the needs of investors (shareholders), companies are accountable to a wide range of stakeholders (Eccles et al., 2014; Hassan, 2019; IIRC, 2021). Apart from investors, other interested parties such as employees, customers, suppliers, the government, and others have a legitimate interest in the activities of a company and its ability to create value over time, presented through the information it provides in its reports (Freeman, 1984; IIRC, 2021).

Stakeholder interest in a company's activities stretches far wider than only financial performance (Adams et al., 2007; De Villiers & Sharma, 2017; O'Donovan, 2002). Narrative sections in the corporate report provide essential information about an organisation's activities, including its impact on the environment and wider society, which is used for important decisions. According to the International Integrated Reporting Framework, "(a) *n integrated report benefits* ***all*** *stakeholders interested in an organization's ability to create value over time, including employees, customers, suppliers, business partners, local communities, legislators, regulators and policy-makers*" (IIRC, 2021) [emphasis added]. In light of this, the GRI Mining Sector Standard exposure draft also encourages reporting that addresses the industry's effects and assists stakeholders in making wise decisions, and enhances corporate sustainability performance (Puro, 2023).

Integrated reporting was developed to produce a single, comprehensive, high-quality report to all stakeholders to communicate a company's ability to create value through interdependencies of the financial, manufactured, intellectual, human, and natural capitals (IIRC, 2013, 2021). Even Warren Buffet said "… (*f*) *or more than forty years, I've studied the documents that public companies file. Too often, I've been unable to decipher just what is being said or, worse yet, had to conclude that nothing was being said*" (SEC, 1998).

In 2020, the Carbon Disclosure Project, Climate Disclosure Standards Board, Global Reporting Initiative, IIRC, and SASB (five prominent global disclosure standard setters) joined forces to work toward a complete corporate reporting system. The European Commission (EC) and the European Financial Reporting Advisory Group (EFRAG) met with worldwide sustainability reporting standard setters, such as the IIRC and the SASB, in March 2021 to debate the future of a set of European sustainability standards. In April 2021, the European Commission proposed legislation for a Corporate Sustainability Reporting Directive (CSRD), which would require the EFRAG to develop European sustainability reporting standards. The IIRC and SASB amalgamated in June 2021 to establish the VRF. The VRF was merged into the newly founded ISSB, a sister board to the International Accounting Standards Board (IASB), in November 2021. A press release by the chairs of the IFRS Foundation's IASB and ISSB recognised the importance of the Integrated Reporting Framework and that it will form a key part in the development of the SASB Standards (Amato, 2022; IFRS, 2022). IFRS (2022) also indicates that they will continue to actively encourage preparers to adopt the Integrated Reporting Framework.

3 | LITERATURE REVIEW

3.1 | Corporate reporting quality

A corporate report is considered to be of low quality if it is long and not readable (Bonsall IV et al., 2017; Caglio et al., 2020; Loughran &

McDonald, 2016), as well as when it is biased toward a specific narrative tone (Huang et al., 2014). To measure the quality of narrative disclosures in a corporate report, one needs objective measures for quality, therefore studies make use of measures, such as report length, readability, and narrative style, which can be measured without subjective human bias. Using these methods, researchers have criticised corporate reports for a lack of quality and reliability (Cho et al., 2012; Diouf & Boiral, 2017; Emel et al., 2012), for being too difficult to read (Smeuninx et al., 2020), and for being impression management tools (Diouf & Boiral, 2017; Merkl-Davies & Brennan, 2011; Ngwakwe & Mtsweni, 2016; O'Donovan, 2002; Stacchezzini et al., 2016).

For annual and integrated reports to be useful for decision-making, they must therefore be readable and unbiased (Smeuninx et al., 2020; Stone & Lodhia, 2019). Poor readability and a biased tone can be used to manipulate impressions and hide poor results (Smeuninx et al., 2020), and can be used to hide the truth about a company's social and environmental impact (Jones et al., 2017; Stacchezzini et al., 2016). In the US, the SEC has been promoting the use of plain English in corporate reporting for many years (SEC, 1998), but this has not caught on worldwide, and researchers continue to find narrative disclosures to be unreadable (Bonsall IV et al., 2017; Bonsall & Miller, 2017; Du Toit, 2017; Hasan, 2018; Loughran & McDonald, 2014, 2016; Smeuninx et al., 2020). Studies also investigated the tone of narrative disclosures or bias, especially the use of words that represent optimism and certainty, and found this to be pertinent in many reports (Arena et al., 2015; Cho et al., 2010; Davis et al., 2006; Hassan, 2019).

Various guidelines exist to direct the quality of disclosures. Examples include the Global Reporting Initiative (GRI) which looks at reporting on sustainability factors specifically (De Villiers & Sharma, 2017), and the International Integrated Reporting Framework (IIRC, 2021). However companies are not obliged to follow such standards (Ngwakwe & Mtsweni, 2016), which means that they are free to report on matters other than financial as they wish. As a result, narratives can be presented in any way the company sees fit, reducing the informational usefulness of qualitative or narrative reporting for decision-making (Daub, 2007; Diouf & Boiral, 2017). Narrative strategies such as readability or tone can even be used in corporate reports of companies to influence stakeholders by using language that diverts attention away from negative news.

Disclosures other than financial in the annual and integrated report are the main means by which companies provide firm-specific information to investors regarding future performance. High-quality disclosures may reduce the cost of gathering, processing, and trading firm-specific data (Barth et al., 2022). Apart from readability and narrative tone, other specific word choices can thus be used to inform readers, for example, words related to the future and sustainability. Guidelines for preparing integrated reports, for example, King IV and the IIRC require that companies include forward-looking information since these reports have to be useful for decision-making (IIRC, 2021; IoDSA, 2016). Investors, financial analysts, and other interested parties need information about the future to assess a company's prospects (Hussainey & Al-Najjar, 2011).

3.2 | Theoretical foundation

Agency theory and legitimacy theory can be applied to the study of disclosure quality in the basic materials industry. The basic materials industry is characterised by significant information asymmetry, where the management of companies operating in basic materials typically has more information about the company's operations, assets, and risks than external stakeholders. This information asymmetry creates a potential conflict of interest between management and external stakeholders, which can lead to agency costs (Fama & Jensen, 1983). Understanding this conflict of interest and the potential for agency costs to appear is made possible by agency theory. Agency theory specifically contends that managers may put their own interests ahead of those of shareholders and other stakeholders, which may lead to poor disclosure of critical information. According to Jensen and Meckling (1976), this may result in a decline in the quality of disclosure and an increase in information asymmetry.

Contrarily, the legitimacy theory proposes that businesses act responsibly toward society to maintain their legitimacy with stakeholders (Suchman, 1995). In the basic materials industry, this can entail sharing data on community involvement, health and safety performance, and social and environmental implications. According to Bansal and Clelland (2004), failing to disclose this information could cause the company to lose credibility and suffer reputational harm, both of which would harm the bottom line.

Overall, agency theory and legitimacy theory offer significant insights into the elements that affect the standard of disclosures in the basic materials industry. By comprehending these theories, we may create a more thorough grasp of the difficulties that businesses in the basic materials industry face and pinpoint tactics to raise the standard of disclosure.

Linked to legitimacy theory, impression management theory refers to the use of reporting to influence readers, provoking a specific desire, image, and identity symbolically without real commitment or substance (Wu et al., 2022). Impression management ensures a company is presented in a positive light, regardless of its real performance, thus producing biased information to manipulate public perceptions for legitimacy (Cho et al., 2012; Criado-Jiménez et al., 2008; Daub, 2007; Diouf & Boiral, 2017; Emel et al., 2012; Hooghiemstra, 2000; Jones et al., 2017; Merkl-Davies & Brennan, 2007; O'Donovan, 2002; Perkiss et al., 2021; Stacchezzini et al., 2016). Impression management occurs in instances when information is hidden from readers through techniques, such as poor readability and narrative manipulation (Diouf & Boiral, 2017; Hasan, 2018; Merkl-Davies & Brennan, 2007; Smeuninx et al., 2020). Narrative manipulation can happen through specific word choices that can create a specific impression of the company, for example, words that imply certainty, optimism, activity, realism, and commonality.

While the basic materials industry is of major significance in an economic sense, the reporting of its activities is a subject of debate (Gray et al., 2019). This is due to various reasons, but specifically the industry's inherent uncertainty and its impact on the environment. According to Gray et al. (2019), disclosures other than financial are not necessarily informative to interested parties but are often rather a

means to gain legitimacy and manage impressions. This presents a unique opportunity to review the reporting of companies in the basic materials industry and to observe whether there has been improvement, especially with the introduction of integrated reporting more than a decade ago.

It is imperative to investigate whether initiatives such as the King Code for Corporate Governance (IoDSA, 2016) and the International Integrated Reporting Framework (IIRC, 2021) and others initiatives resulted in progress in the quality of narrative non-financial corporate reporting in the basic materials industry, an industry with the largest impact on the environment and communities, in South Africa, a country that is believed to be setting a standard for non-financial reporting worldwide. Any previous shortcomings in non-financial reporting can also potentially be addressed in the new standards for sustainability reporting.

RQ1. What impact has the adoption of integrated reporting had on the length, readability, and bias of corporate reports in the basic materials industry?

RQ2. Has the quality of integrated reports in the basic materials industry improved since the inception of the integrated reporting movement?

4 | RESEARCH METHOD

In terms of the selection of industry to investigate, the basic materials industry makes sense as it is often regarded as a high-impact (Milne & Gray, 2013) and 'sinful' or 'bad' (Samkin, 2012) industry with various threats against the environment and communities (Böhling & Murguía, 2014; Boiral, 2013). industry, the World Business Council for Sustainable Development (WBCSD), The International Council on Mining and Metals (ICMM), and the GRI have developed frameworks specifically designed to improve sustainable development and transparency in the basic materials industry, indicating the importance of sound reporting in this industry. Natural resources play a huge role (social, economic, and political) in Africa specifically, where 30% of the world's mineral reserves, 10% of the world's oil, and 8% of the world's natural gas resides (The World Bank, 2020). However, it is also in emerging economies where horrifying human suffering occurs in the form of civil wars, poverty, corruption, violence, worker exploitation, and environmental degradation resulting in biodiversity loss, all due to weak governance (The World Bank, 2020). PWC (2020) reported that the basic materials industry was responsible for 7% of South Africa's GDP in 2019. In South Africa, labour, and community relations in the basic materials industry face significant tension. An incident known as the Marikana Massacre saw 34 protesting mineworkers being killed by police in the Northwest province on 16 August 2012 (Evans, 2019). Ten years later the industry is yet to recover from this incident. More recently, a community activist was murdered on 23 October 2020 for opposing the expansion of a mine in the KwaZulu-Natal province, which would have saved the livelihoods of many workers (Savides, 2020). Operations in basic materials also pose risks to communities and the environment through pollution, as well as disruptions to the natural environment to reach the minerals they seek. This means companies in the basic materials industry in South Africa have innumerable incentives to show stakeholders through their corporate reporting how they are protecting the environment as well as preventing damage to the environment while addressing workers' and communities' health and safety concerns (De Villiers et al., 2014; Ngwakwe & Mtsweni, 2016).

The study makes use of the annual and integrated reports of all companies listed in the basic materials and consumer discretionary industries of the Johannesburg Stock Exchange from 2008 to 2020. The approach of comparing two unrelated industries (one being considered highly environmentally sensitive and the other less so) was also used by Artene et al. (2020) and Lock and Seele (2015), who respectively investigated disclosure in the oil and chemicals industries in comparison to the financial industry.

The annual and integrated reports were manually collected from the IRESS financial database. The sample commences in 2008 when integrated reporting was not yet introduced, to 2020, when integrated reporting was required for South African companies on a 'comply or explain' basis. This provides a range of reports that allows for an analysis to see whether integrated reporting brought positive change to reporting quality. The sample consists of 51 companies in the Basic Materials industry (586 firm-year observations) and 75 companies in the Consumer Discretionary industry (618 firm-year observations) for a total of 1204 firm-year observations.

Readability and narrative tone are considered to be objective measures of the quality of disclosures. The narrative sections of the annual and integrated reports of JSE-listed companies are analysed first for readability and secondly for narrative tone or bias, to establish whether the companies make use of specific narrative styles in their word choices. Finally, the reports are evaluated for their use of sustainability-related and forward-looking words to investigate whether there has been an increase in the use of these types of words in disclosures.

The textual analysis of corporate reports is gaining popularity in accounting and finance research (Hasan, 2018). Textual analysis can be used to analyse readability (Bonsall IV et al., 2017; Li, 2008) as well as narrative tone. Both readability and tone can potentially be used to manipulate impressions or to obfuscate the truth (Hasan, 2018; Smeuninx et al., 2020). The use of software in textual analyses is considered more reliable than manual analyses (Al-Najjar & Abed, 2014). Software is recommended for readability analyses, due to its inherent objectivity, ease of use, and understandability. This study makes use of Readability Studio 2021, to measure readability specifically according to the Flesch Reading Ease and Flesch-Kincaid measures, both recommended to evaluate the readability of material that is meant for adult readers. The three readability measures are calculated as follows:

1. The Flesch Reading Ease is calculated as [206.835–0.846(number of syllables per 100 words) – 1.015(average sentence length in words)].

2. The Flesch-Kincaid measure is calculated as [(0.39 × average sentence length) + (11.8 × average syllables per word) − 15.59].

In addition to the standardised readability scores, the analyses also investigate other factors of readability, for example, the use of passive voice sentences and so-called wordy items. A wordy item is a phrase that is unnecessarily long and can be replaced with something shorter and simpler.

To analyse the narrative tone of the corporate reports, this study makes use of the software Diction 7.1.3. Diction, proprietary software developed by Hart (2000) and improved by Hart and Carroll (2013), measures the textual tone of a piece of text to identify if a certain language strategy was used. The broader categories it identifies are Certainty, Optimism, Activity, Realism, and Commonality (Hart, 2000). Table 1 presents a summary of the measures used in a Diction narrative tone analysis. For detailed descriptions of all the word categories, refer to the Appendix presented by Laskin (2018).

A Diction analysis results in a score for each strategy, based on frequencies of occurrence and measured against a pre-determined built-in standard (Hart, 2000; Hart & Carroll, 2013). For this study, text scores are measured against the Corporate Financial Reports normative base, similar to a study by Craig and Amernic (2018) to ensure the analyses are appropriate for the material, namely annual and integrated reports. Software applications for narrative analyses have the benefit of inherent stability, clear coding rules for comparability, coder reliability, and the ability to process large volumes of text (Ober et al., 1999).

The study also makes use of Diction 7.1.3 to determine the extent to which the companies make use of forward-looking and sustainability-related words in their narrative reporting. Diction allows researchers to upload personalised word lists. The list of forward-looking disclosures for use in Diction was developed from Power Thesaurus (www.powerthesaurus.com), using 'forward looking' and 'forward thinking' as search terms to find relevant synonyms. Word Associations (wordassociations.net) were used with the search term 'future' to find a word list. The result is a list of 429 unique words. To analyse the use of sustainability-related keywords, Artene et al. (2020) created a word list from the European Directive 2014/95/EU to measure the disclosure of information other than financial. Their word list included words such as air, emissions, climate change, pollution, impact, and so forth. For purposes of this study, a comprehensive word list on environmental sustainability was prepared and consisted of the word list from Artene et al. (2020), as well as Power Thesaurus where 'sustainability' and 'environmental sustainability' were used as search terms. From Word Associations (www.wordassociations.net) a word list was extracted using 'sustainability' as a search term and from Words-to-Use (words-to-use.com) the search term 'going green' was used. The final sustainability word list consists of 536 unique words related to the environment and sustainability.

This study is a critical exploratory investigation into the quality of annual and integrated reports of companies in the basic materials industry listed on the JSE from 2008 to 2020. To observe the changes in significant variables over time, the non-parametric Kruskal-Wallis test is used, as the variables are not all normally distributed.

TABLE 1 Diction measures of narrative tone.

Master variable	Definition	Formula
Certainty	Language indicating resoluteness, inflexibility, and completeness, and a tendency to speak with authority	[Tenacity + Levelling + Collectives + Insistence] − [Numerical Terms + Ambivalence + Self Reference + Variety]
Optimism	Language endorsing some person, group, concept, or event or highlighting their positive entailments.	[Praise + Satisfaction + Inspiration] − [Blame + Hardship + Denial]
Activity	Language featuring movement, change, the implementation of ideas, and the avoidance of inertia.	[Aggression + Accomplishment + Communication + Motion] − [Cognition + Passivity + Embellishment]
Realism	Language describing tangible, immediate, recognisable matters that affect people's everyday lives.	[Familiarity + Spatial Terms + Temporal Terms + Present Concern + Human Interest + Concreteness] − [Past Concern + Complexity]
Commonality	Language highlighting the agreed-upon values of a group and rejecting idiosyncratic modes of engagement.	[Centrality + Cooperation + Rapport] − [Diversity + Exclusion + Liberation]

Note: Hart (2000); Hart and Carroll (2013).

5 | RESULTS

Readability and narrative analyses were performed on the annual and integrated reports of JSE-listed companies in the basic materials and consumer discretionary industries to find answers to research questions 1 and 2 as presented at the end of the literature review. A first analysis was performed to assess the length of the annual and integrated reports. The summary descriptive statistics for length in terms of words are depicted in Table 2.

The report lengths differ significantly between the shortest and the longest reports in the basic materials industry. The shortest report (min = 5649 words) was published in 2008 and consisted of 20 pages with little text. The longest report (max = 265,088 words) was published in 2020 and consisted of 365 pages. To put this finding in perspective, a report with a maximum of upwards of 265,000 words is more than 500 pages long. The average report length between Basic Materials and Consumer Discretionary differs, with reports in the Basic Materials industry tending to be longer than those in the Consumer Discretionary industry. This can also be observed graphically (see Figure 1).

There was a distinct increase in report length around 2011/2012 when most companies in South Africa started to publish integrated

TABLE 2 Descriptive statistics of report length.

	Mean	Median	Mode	SD	Range	Min	Max
Panel A: Basic Materials ($n = 586$)							
Total Words	65,792	57,277	24,146	39,346	259,439	5649	265,088
Unique Words	26,371	23,234	7897	15,531	103,395	2119	105,514
Panel B: Consumer Discretionary ($n = 618$)							
Total Words	54,416	50,142	62,162	27,451	222,357	11,848	234,205
Unique Words	21,550	20,353	15,398	10,865	90,045	3834	93,879

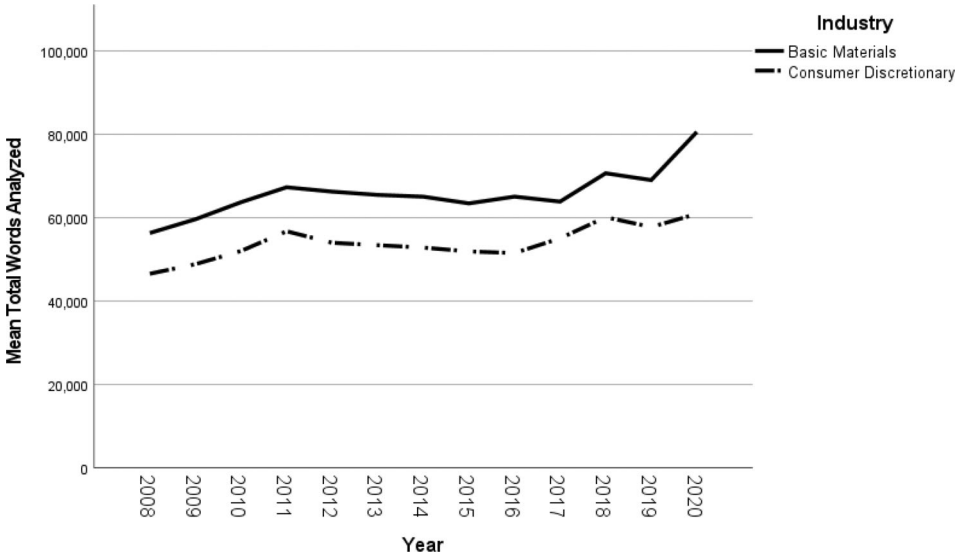


FIGURE 1 Graphical depiction of the change in report length over time, based on the mean of total words analysed per report.

reports. Since then, reports steadily increased in length, disregarding the IIRC requirement of concise reporting (IIRC, 2021).

The ratio of unique words to total words is approximately 40% for both industries if the mean and median values are considered. This indicates that there is not too much repetition in the reports. The trend over time of the use of unique words shows a similar trend to the total words while the trend of unique words as a ratio of total words increased slightly over the period as depicted in Figure 2.

A Kruskal-Wallis test reveals a statistically significant difference in the number of unique words used in annual and integrated reports in the basic materials industry over the period under consideration $\chi 2$ (12, $n = 586$) = 23.995, $p = 0.020$. The ratio of unique words to total words was also significant over the period $\chi 2$ (12, $n = 586$) = 77.200, $p = 0.000$. A Kruskal-Wallis test investigating differences between the industries indicate statistically significant differences for total words $\chi 2$ (1, $n = 1204$) = 22.418, $p = 0.000$, unique words $\chi 2$ (1, $n = 1204$) = 27.162, $p = 0.000$, as well as the ratio of unique words to total words $\chi 2$ (1, $n = 1204$) = 8.791, $p = 0.003$.

The purpose of integrated reporting is to bring to stakeholders concise, but complete, information regarding a company's value-creation attempts. Even though the ratio of unique words to total words shows that companies are communicating more diverse information, increases in integrated report length are contrary to the International Integrated Reporting Framework requirements of concise communication (IIRC, 2021).

From readability analyses of the annual reports, several observations can be made. Descriptive statistics for readability for the two industries are presented in Table 3.

Flesch-Kincaid indicates the level of education a reader requires to be able to easily read the material. The analysis results indicate that readers need an average of 17 years of education, that is, at least a tertiary qualification, to be able to read the annual reports of companies in the Basic Materials industry as opposed to an average of 15 years for the Consumer Discretionary industry.

The Flesch Reading Ease gives a score between 1 and 100, with lower values indicating a text is more difficult. An average of 28.08 indicates that the annual reports of the companies in the Basic Materials industry fall in the category of *Very Difficult* to read. The Flesch Reading Ease is higher for the Consumer Discretionary industry at 33.25, indicating that the industry's annual reports are in the category of *Difficult* to read.

The complexity or readability of the text is also affected by the complexity of words, the length of words, the number of passive voice sentences, as well as the number of so-called 'wordy' items in the reports. From the results, it appears that the annual reports from the Basic Materials industry make use of significant complex words ($m = 25.47\%$ of total words); long words ($m = 42.26\%$ of total words); passive voice sentences ($m = 641$); and wordy items ($m = 3674$). Except for the percentage of long and complex words, the results are higher for the Basic Materials industry than for Consumer Discretionary, showing toward more difficult-to-read text.

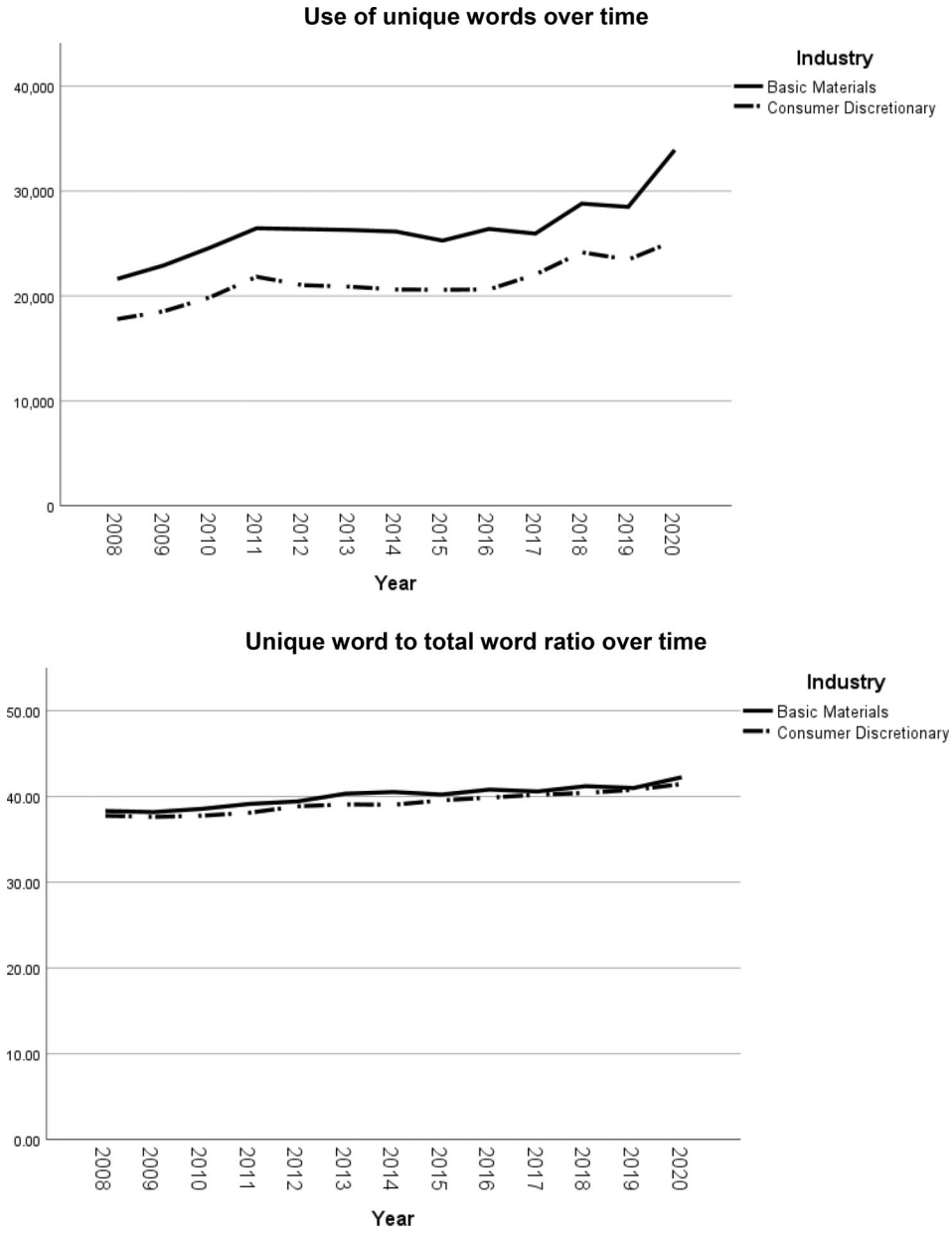


FIGURE 2 Graphical depiction of the change in the use of unique words in annual reports over time.

The differences in the readability measures over time for the two industries are depicted in Figure 3.

A Kruskal-Wallis test reveals a statistically significant difference in all three readability measures for the Basic Materials industry over the period under consideration, with readability declining over time for all measures; Flesh-Kincaid $\chi 2$ (12, $n = 586$) = 37.500, $p = 0.000$; Flesh Reading Ease $\chi 2$ (12, $n = 586$) = 65.749, $p = 0.000$. The increase in the use of complex and long words were also statistically significant with results for the percentage complex and percentage long words being $\chi 2$ (12, $n = 586$) = 56.728, $p = 0.000$ and $\chi 2$ (12, $n = 586$) = 51.673, $p = 0.000$, respectively. The change in the use of passive voice sentences and wordy items increased over time, but the change was not statistically significant.

Kruskal-Wallis tests to find whether the difference in readability measures was statistically significant between the two industries indicate that it was indeed the case for all measures, namely Flesch-Kincaid $\chi 2$ (1, $n = 1204$) = 654.980, $p = 0.000$, Flesch Reading Ease $\chi 2$ (1, $n = 1204$) = 484.632, $p = 0.000$, % complex words $\chi 2$ (1, $n = 1204$) = 96.713, $p = 0.000$, % long words $\chi 2$ (1, $n = 1204$) = 38.178, $p = 0.000$, passive voice sentences $\chi 2$ (1, $n = 1204$) = 18.522, $p = 0.000$, and wordy items $\chi 2$ (1, $n = 1204$) = 13.550, $p = 0.000$.

The results are contrary to the requirements of integrated reporting, namely to be useful to a wide stakeholder base (IIRC, 2021) for decision-making. This is even more pronounced in the Basic Materials industry, with it using more complex language and being less readable than in the Consumer Discretionary industry. The other concerning factor is the decline in readability over time.

Diction software analyses text to find whether specific narrative choices are made in reports, or otherwise and whether there are any

TABLE 3 Descriptive statistics of readability analyses.

	Mean	Median	Mode	SD	Range	Min	Max
Panel A: Basic Materials (n = 586)							
Flesch–Kincaid	16.66	16.70	16.90	1.17	11.40	7.60	19.00
Flesch Reading Ease	28.08	28.00	27.00	5.43	89.00	-	89.00
% Complex (3+ syllable) words	25.47	25.60	26.00	2.29	45.00	4.70	49.70
% Long (6+ characters) words	42.26	42.30	43.00	2.60	57.00	6.30	63.30
Passive Voice	641	563	567	367	2151	43	2194
Wordy Items	3674	3289	2112	2146	15,401	18	15,419
Panel B: Consumer Discretionary (n = 618)							
Flesch-Kincaid	14.69	14.60	14.60	0.90	10.30	7.50	17.80
Flesch Reading Ease	33.25	33.00	33.00	3.46	46.00	16.00	62.00
% Complex (3+ syllable) words	24.85	24.85	24.50	1.22	13.90	15.20	29.10
% Long (6+ characters) words	41.80	41.70	41.40	1.55	13.30	34.10	47.40
Passive Voice	542	493	253	275	1735	11	1746
Wordy Items	3160	2927	1519	1543	12,400	207	12,607

biases in a text that may influence the reader. Diction tests for five main categories: Certainty, *Optimism*, *Activity*, *Realism*, and *Commonality*. A summary of the main categories of narrative tone is presented in Table 4. For a detailed table where scores for all the sub-categories of the main narrative tone categories are shown, refer to the supplementary material to the paper. The results indicate that the annual and integrated reports tend to make the most use of words relating to *Commonality*. Thereafter the Basic Materials industry uses words related to *Optimism* mostly, while the Consumer Discretionary industry uses words related to *Realism* most often. For the Basic Materials industry, these tone choices can be a means to ensure stakeholders get the idea that the company operates in an inclusive environment and that they paint an optimistic picture of the company's operations and performance.

The category of *Commonality* ($m_{BM} = 50.17$, $SD_{BM} = 2.41$; $m_{CD} = 51.00$, $SD_{CD} = 2.22$)[2] refers to language that highlights the values of a group and rejects distinctive obligations. The most prominent word categories within *Commonality* were *Centrality* ($m_{BM} = 9.44$, $SD_{BM} = 5.01$; $m_{CD} = 11.08$, $SD_{CD} = 4.99$), which refers to words referring to a company's core values, and *Cooperation* ($m_{BM} = 8.72$, $SD_{BM} = 4.93$; $m_{CD} = 9.66$; $SD_{CD} = 5.83$), which are words related to interactions between people to deliver a product.

The Optimism main category for the Basic Materials industry had the second largest score ($m_{BM} = 49.22$, $SD_{BM} = 1.30$; $m_{CD} = 49.65$; $SD_{CD} = 1.45$). *Optimism* refers to language advocating a person, group, concept, or event, or simply highlighting its positive aspects. Within the *Optimism* main category, the use of *Inspiration* ($m_{BM} = 2.60$, $SD_{BM} = 2.04$; $m_{CD} = 2.11$; $SD_{CD} = 1.61$) and *Denial* ($m_{BM} = 2.56$, $SD_{BM} = 2.07$; $m_{CD} = 2.54$; $SD_{CD} = 2.05$) words were the most prominent. *Inspiration* refers to words related to moral qualities while *Denial* refers to negative words found in the reports.

For the Consumer Discretionary industry, the second highest score was obtained for *Realism* ($m_{BM} = 48.93$, $SD_{BM} = 3.01$; $m_{CD} = 50.05$, $SD_{CD} = 2.90$). *Realism* relates to language describing tangible, immediate, recognisable matters. The most prominent categories of words under *Realism* were *Familiarity* ($m_{BM} = 82.88$, $SD_{BM} = 35.19$; $m_{CD} = 91.22$, $SD_{CD} = 34.41$), which are typical operational words, and *Concreteness* ($m_{BM} = 22.87$, $SD_{BM} = 10.68$; $m_{CD} = 23.49$, $SD_{CD} = 9.12$), being words related to tangibility and materiality.

As a main category, *Certainty* ($m_{BM} = 47.93$, $SD_{BM} = 2.82$; $m_{CD} = 48.34$, $SD_{CD} = 3.01$) refers to language indicating resoluteness, inflexibility, completeness, and a tendency to speak with authority. The results show high levels of the use of words relating to *Insistence* ($m_{BM} = 124.32$, $SD_{BM} = 72.51$; $m_{CD} = 142.91$, $SD_{CD} = 84.96$) and *Numerical Terms* ($m_{BM} = 74.59$, $SD_{BM} = 48.94$; $m_{CD} = 72.40$, $SD_{CD} = 48.62$). *Insistence* refers to the repetition of key terms to signal a limited, ordered world. The use of *Numerical Terms* is to be expected, due to annual and integrated reports having a significant quantitative aspect.

For *Activity* ($m_{BM} = 47.97$, $SD_{BM} = 2.49$; $m_{CD} = 47.20$, $SD_{CD} = 2.35$), which refers to language featuring movement, change, idea implementation, and the avoidance of inertia, words relating to *Accomplishment* ($m_{BM} = 11.71$, $SD_{BM} = 5.90$; $m_{CD} = 10.05$, $SD_{CD} = 3.98$) stand out.

The trends of the main categories of narrative choice over time for the two industries are graphically presented in Figure 4.

Kruskal-Wallis tests of the five main categories of *Activity*, *Optimism*, *Certainty*, *Realism*, and *Commonality* show that only Realism decreased significantly over time for both the Basic Materials $\chi 2$ (12, $n = 586$) = 41.166, $p = 0.000$, and Consumer Discretionary $\chi 2$ (12, $n = 618$) = 64.665, $p = 0.000$ Industries. With Realism relating to language describing tangible, immediate, recognisable matters

[2]For brevity, in this section BM refers to the Basic Materials industry and CD to the Consumer Discretionary industry.

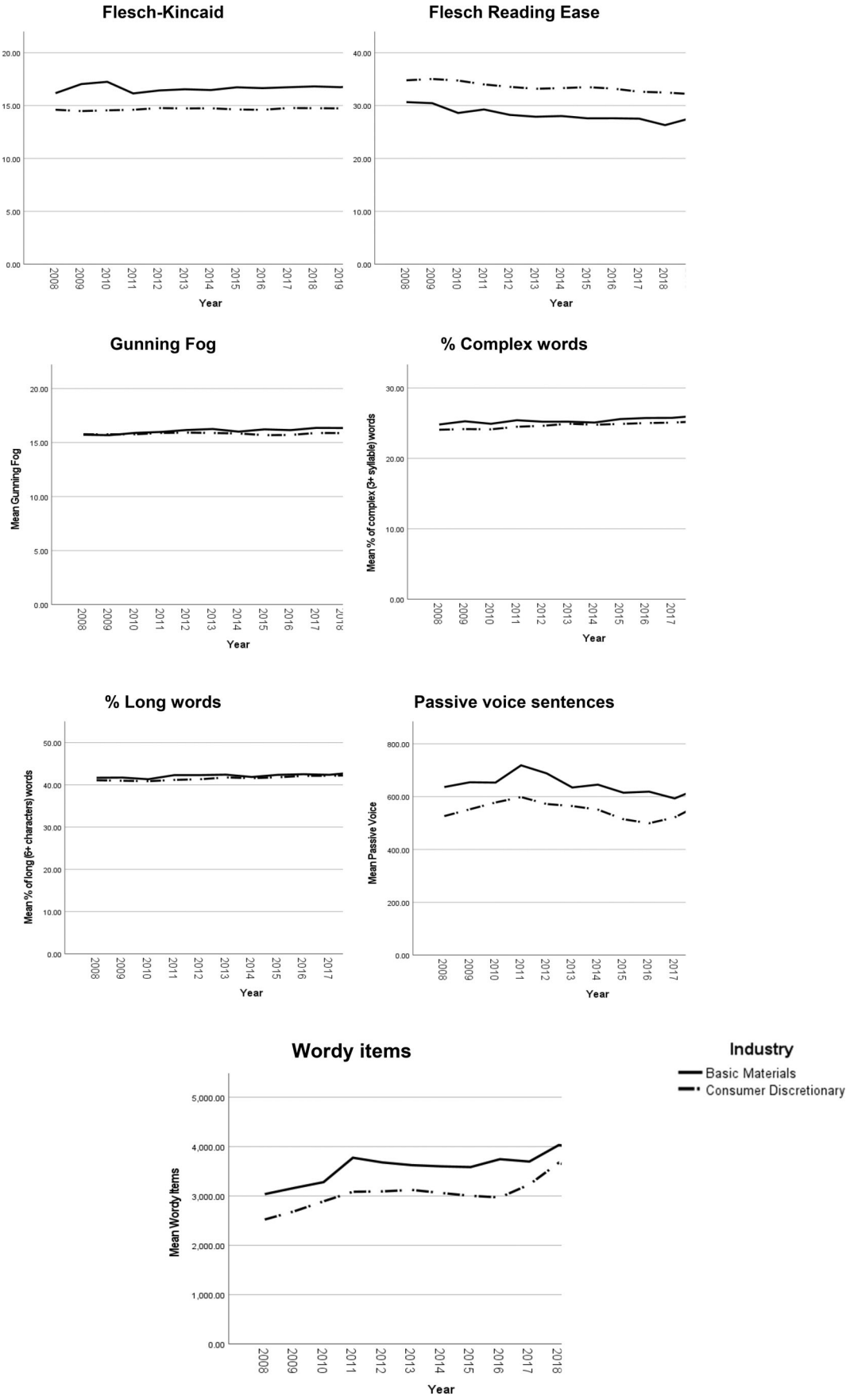


FIGURE 3 Changes in readability measures over time.

TABLE 4 Summary descriptive statistics of tone analyses.

	Mean	Median	Mode	SD	Range	Min	Max
Panel A: Basic Materials (n = 586)							
Commonality	50.17	50.22	50.44	2.41	25.81	32.39	58.20
Optimism	49.22	49.29	49.19	1.30	14.01	44.40	58.41
Realism	48.93	48.79	48.19	3.01	23.65	39.19	62.84
Activity	47.97	48.05	48.41	2.49	19.59	37.52	57.11
Certainty	47.93	48.10	46.90	2.82	23.91	31.67	55.58
Panel B: Consumer Discretionary (n = 618)							
Commonality	51.00	51.25	51.24	2.22	22.90	35.85	58.75
Realism	50.05	50.32	51.73	2.90	19.91	40.86	60.77
Optimism	49.65	49.50	48.89	1.45	27.61	44.49	72.10
Certainty	48.34	48.84	50.24	3.01	26.73	29.82	56.55
Activity	47.20	47.20	47.03	2.35	19.27	40.83	60.10

that affect people's everyday lives it means that companies may be less likely to report on matters that are important to stakeholders. The difference in the five main categories between the industries was all statistically significant, based on the Kruskal-Wallis test, indicating that the different industries follow distinctly different approaches in narrative choice. The results are as follows: Activity $\chi2$ (1, $n = 1204$) = 34.770, $p = 0.000$, Optimism $\chi2$ (1, $n = 1204$) = 29.612, $p = 0.000$, Certainty $\chi2$ (1, $n = 1204$) = 12.796, $p = 0.000$, Realism $\chi2$ (1, $n = 1204$) = 46.079, $p = 0.000$, and Commonality $\chi2$ (1, $n = 1204$) = 58.305, $p = 0.000$. The use of biased language is present in both industries, but there are distinct differences in the way the two industries use language to convey a particular message.

Contrary to the requirements of integrated reporting, there seems to be biased in the way the reports communicate. The International Integrated Reporting Framework mentions specifically that an integrated report should show no bias in the presentation of information (IIRC, 2013, 2021).

A final analysis investigated the use of specific words over time, namely forward-looking words and words related to sustainability. The descriptive statistics are shown in Table 5.

The results show that the annual and integrated reports of companies in both the Basic Materials and Consumer Discretionary industries contain almost 5% of both forward-looking and sustainability-related words. The trends in the use of forward-looking and sustainability-related words over time for the two industries are graphically presented in Figure 5.

It is promising to see that companies, especially in the Basic Materials industry, are using increasingly more forward-looking disclosures and reporting more on sustainability issues. The increase in these types of words was statistically significant for the Basic Materials and Consumer Discretionary industries over the period under consideration, as shown by the Kruskal-Wallis test. The results for the Basic Materials industry were $\chi2$ (12, $n = 586$) = 96.798, $p = 0.000$ for forward-looking words and $\chi2$ (12, $n = 586$) = 124.576, $p = 0.000$ for sustainability-related words. The results for the Consumer Discretionary industry were $\chi2$ (12, $n = 618$) = 97.541, $p = 0.000$ for forward-looking words and $\chi2$ (12, $n = 618$) = 133.77, $p = 0.000$ for sustainability-related words. The results show that the use of forward-looking and sustainability-related words was similar in both industries.

The use of forward-looking words is in line with the requirements of the International Integrated Reporting Framework, stating the need for a future orientation in integrated reports (IIRC, 2021). The increase in words related to sustainability is promising, with the advent of the International Sustainability Standards Board and the newly developed Sustainability Standards.

6 | DISCUSSION AND CONCLUSIONS

Even though the IIRC promotes integrated reporting as the new corporate reporting norm, companies run the risk of wasting resources on a reporting strategy that might not live up to its potential if integrated reporting is merely accepted blindly and uncritically (Dumay et al., 2016). Academic research is crucial in the process of bringing practitioners' attention to the potential drawbacks and constraints of integrated reporting. The debate on integrated reporting is divided (Ahmed Haji & Anifowose, 2016; Brown & Dillard, 2014), but the critical voices should not be ignored.

Since 2011, companies listed on the Johannesburg Stock Exchange have been strongly encouraged to prepare integrated reports. So much so that it has become de facto mandatory for JSE-listed companies. However, it is unclear whether integrated reports are useful for decision-making for all stakeholders, a requirement of the IIRC (2021). Integrated reporting was introduced to bring to a variety of stakeholders a single integrated report that communicates companies' value creation efforts through the integration of the capitals. The aim was to improve the annual report of old by presenting useful and sensible information that stakeholders could use for decision-making. The purpose of qualitative disclosures is to inform truthfully and

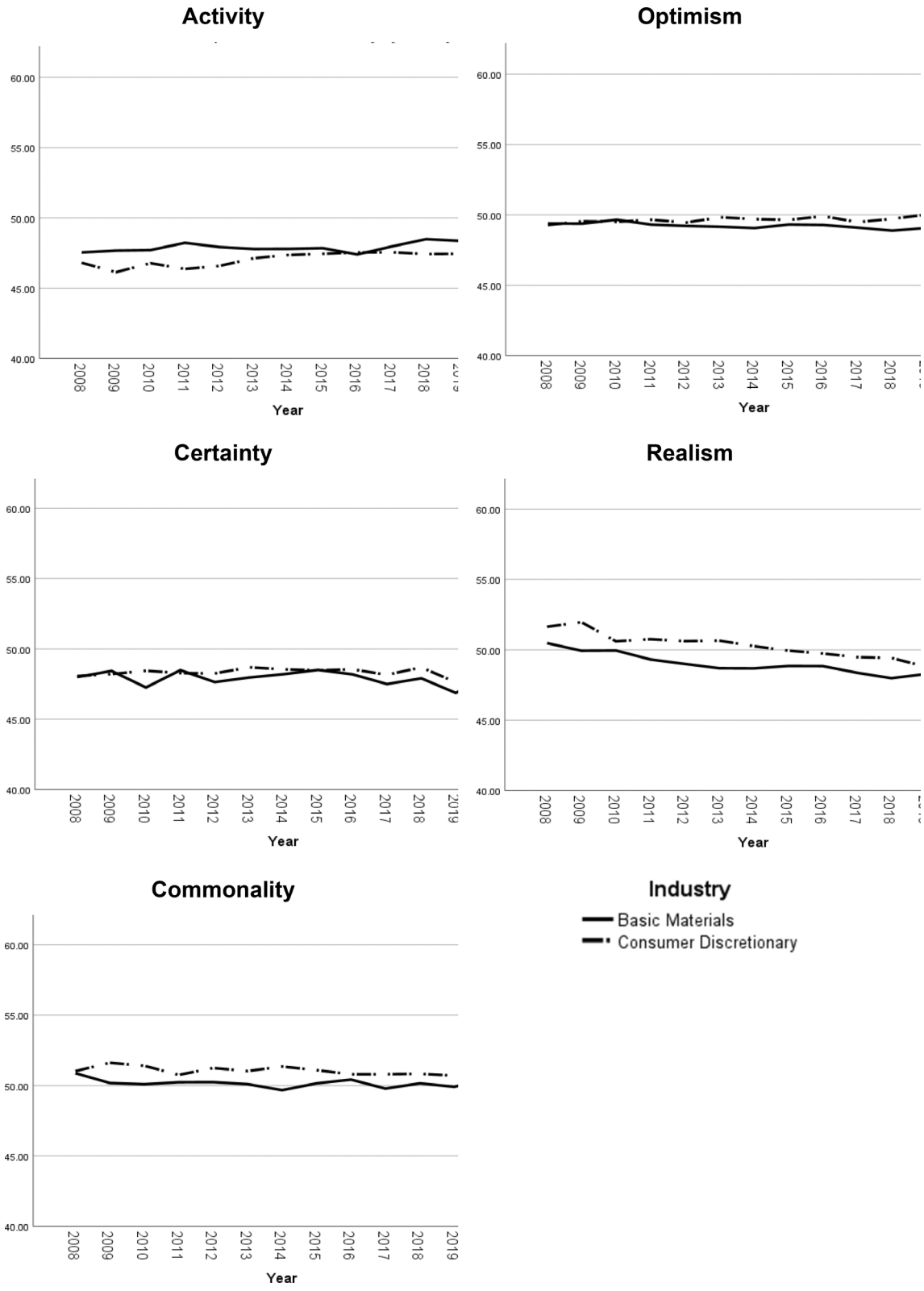


FIGURE 4 Changes in narrative choice measures over time.

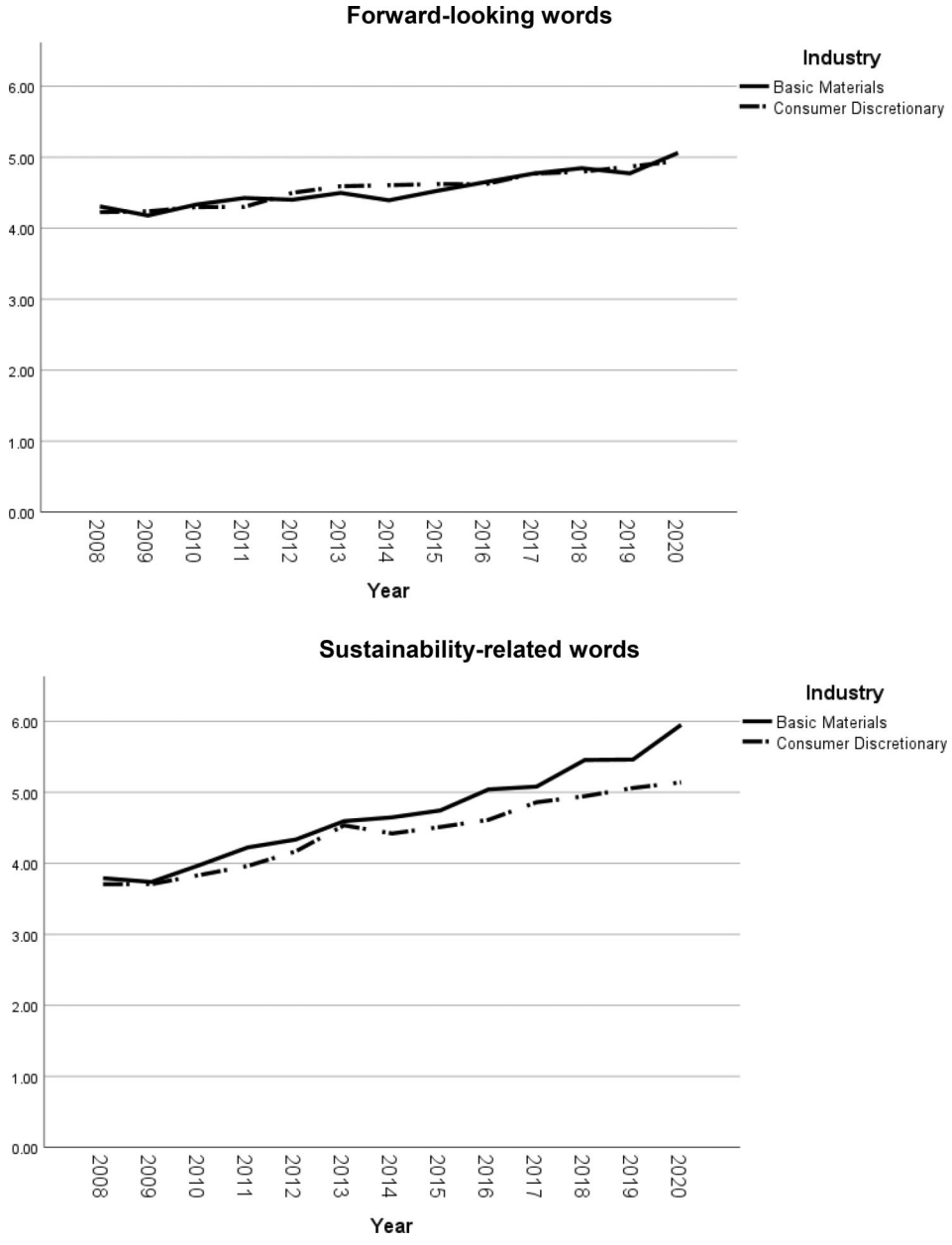
transparently and should not be applied simply as a legitimisation tactic for unacceptable behaviour or a means to manage readers' impressions of the company.

Using objective measures, this study investigates whether integrated reports are concise, readable, and unbiased to deliver the best information to stakeholders. The basic materials industry was

TABLE 5 Descriptive statistics for the use of specific words.

	Mean	Median	Mode	SD	Range	Min	Max
Panel A: Basic Materials (n = 586)							
Forward-looking words %	4.55	4.53	5.00	0.69	6.55	0.04	6.60
Sustainability words %	4.70	4.43	5.00	1.40	8.97	0.00	8.97
Panel B: Consumer Discretionary (n = 618)							
Forward-looking words %	4.61	4.54	1.50	0.61	4.96	1.50	6.46
Sustainability words %	4.50	4.44	2.36	1.03	6.37	2.36	8.73

FIGURE 5 Changes in specific words used.



specifically selected to investigate the reporting environment and its development over time. The basic materials industry makes a significant contribution to the economy of South Africa in terms of GDP, foreign investment, and employment. However, it is also an industry with a poor reputation for its dealings with the environment and the communities within which it operates. Because of its importance to the economy, as well as the inherent environmental and sustainability risks, companies in this industry have a responsibility to address issues surrounding their efforts to protect and contribute to the environment and the communities in which it operates. Narrative reporting is

thus an essential component of corporate reporting for companies in the basic materials industry and it is necessary to investigate how they perform on this front.

In summary, the results show that the concept of integrated reporting according to the International Integrated Reporting Council did not bring forth all the benefits it was theoretically associated with, mainly because companies are not applying the International Integrated Reporting Framework appropriately. Integrated reporting was aimed at improving the reporting landscape, but it appears that this is not the case. Contrary to the Framework's requirements, integrated reports are not concise and becoming increasingly longer; are not readable; and are increasingly biased.

Report lengths have increased over time and this change is more evident in the Basic Materials industry. This does not bode well for the perceived quality of corporate reports, as researchers consider a report to be of lower quality if it is overly long (Bonsall IV et al., 2017; Caglio et al., 2020; Loughran & McDonald, 2016). Research has even found that overly long reports are often associated with poor financial performance (Jugnandan & Willows, 2021). There has also been a distinct increase in the length of reports since 2011 when integrated reporting was introduced, which is contrary to the IIRC requirement for concise reporting (IIRC, 2021). From the standpoint of agency theory, managers may decide to lengthen disclosures to obfuscate crucial information, making it more challenging for external stakeholders to locate the information they require. Avoiding exposing sensitive information that might harm the company's reputation, regulatory position, or profitability may be the motivation for this selective disclosure (Jensen & Meckling, 1976). Lengthy disclosures may be viewed from a legitimacy theory perspective as a company's dedication to accountability and transparency. According to legitimacy theory, companies need to prove their dedication to social and environmental responsibility to keep stakeholders' trust (Suchman, 1995). In the context of disclosures, this indicates that businesses must give a thorough account of their operations and effects to show stakeholders that they are transparent and accountable. Long disclosures may however be perceived by stakeholders as an attempt to hide crucial information inside the document and may be considered a symptom of inefficiency or a lack of focus (Hutton et al., 2009).

The findings show that the disclosures of companies in both the Basic Materials and Consumer Discretionary industries **lack readability**. This is in line with previous literature regarding the readability of annual reports (Bonsall IV et al., 2017; Bonsall & Miller, 2017; Du Toit, 2017; Hasan, 2018; Loughran & McDonald, 2014, 2016; Smeuninx et al., 2020). However, what is of concern is that the readability of annual and integrated reports in the Basic Materials industry is worse than in the Consumer Discretionary industry and that readability in the Basic Materials industry has declined significantly over time. These observations are based on specific readability formulae, as well as other measures that impact readability, such as word length and complexity, as well as the use of passive voice sentences. As a developed economy, the US recognised the importance of annual report readability and introduced the SEC (1998) requirement for plain language. This shows the importance that should be placed on readable reports. Certain readability measures such as the Flesh Reading Ease, the number of passive voice sentences, and the number of wordy items showed a distinct change in 2011 when integrated reporting was introduced. For all the readability measures the change over time indicates a decrease in readability after the introduction of integrated reporting.

In terms of agency theory, managers may use difficult disclosures to prevent external stakeholders from accessing information that might be harmful to the interests of the company. Again, the avoidance of exposing sensitive information that might harm the company's reputation, regulatory position, or profitability can motivate selective disclosure (Jensen & Meckling, 1976). Making disclosures harder to understand could occasionally be a strategy to avoid scrutiny from investors, analysts, and other stakeholders who might lack the time, resources, or knowledge to fully comprehend complex disclosures (Hutton et al., 2009). Unreadable disclosures could be interpreted in terms of legitimacy theory as a failure on the part of the company to effectively engage its stakeholders. According to legitimacy theory, organisations need to prove their dedication to social and environmental responsibility to keep stakeholders' trust (Suchman, 1995). This entails that companies must provide information in a style that is understandable and accessible to a variety of stakeholders, including non-experts. By failing to do so, companies in the basic materials industry run the danger of losing credibility and confidence with stakeholders who might perceive their disclosures as purposefully vague or deceptive.

Previous literature has found that the disclosures in annual and integrated reports show the presence of bias through specific word choices in terms of narrative tone (Arena et al., 2015; Cho et al., 2010; Davis et al., 2006; Hassan, 2019). The use of **biased language** was confirmed in the narrative choices of companies listed in the Basic Materials and Consumer Discretionary industries. An analysis of the narrative style used in the annual and integrated reports of companies in the Basic Materials and Consumer Discretionary industries shows that words relating to *Commonality* are used most often in both industries. The second strategy used most often in the Basic Materials industry is *Optimism*. This indicates that the companies used optimistic language to discuss their performance and outlook, as well as words and phrases that imply shared values and aims with their stakeholders. From the perspective of agency theory and legitimacy theory, the usage of commonality and optimism can be explained. According to agency theory, managers may use selective disclosure to put their own interests ahead of those of outside stakeholders. Companies in the basic materials industry can establish a great reputation and keep a positive relationship with their stakeholders by adopting language that emphasises similarities and shared values. The corporation can then use this to further its objectives, such as garnering societal acceptance, recruiting investment, or securing regulatory clearances (Jensen & Meckling, 1976). Legitimacy theory proposes that companies engage in socially responsible behaviour to uphold their legitimacy with stakeholders. Companies in the basic materials industry can show their dedication to social responsibility, sustainability, and stakeholder engagement by using language that stresses commonality (Suchman, 1995). Similar to

this, the use of optimistic language can foster a favourable image of the company's future success and strengthen stakeholders' faith in its capacity to provide value.

In terms of the use of specific words, such as **sustainability-related and forward-looking words**, there is a clear upward trend for both industries and it seems that the Basic Materials industry tends to use these types of words more often.

The main takeaway from the results is that the progression of corporate reporting over time from the annual report (2008 to 2010) to the integrated report (2011 to 2020), indicates a general decrease in quality and an increase in complexity and bias. In terms of the research questions, objective measures of reporting quality show that the integrated reporting movement did not improve the quality of disclosures (RQ1) and the quality of the disclosures in integrated reports did not improve over time (RQ2). The result is that integrated reporting is not necessarily useful to stakeholders for decision-making.

In theoretical terms, the study enriches the existing literature on corporate reporting by offering a multidimensional theoretical framework that adds depth to the discourse. It extends current theories by identifying specific factors that influence corporate reporting, thus filling a knowledge gap. However, the key contribution of this paper lies in its finding that there are significant shortcomings in the current reporting practices and policies in South Africa, despite all the effort that has been made in the development of the Integrated Reporting Framework and it being de facto mandatory for companies listed on the Johannesburg Stock Exchange.

The Johannesburg Stock Exchange prescribes the principles of King IV (previously King I, II, and III) (JSE, n.d.), which in turn "strongly recommends" that companies prepare integrated reports (IoDSA, 2016). Integrated reporting guidelines are available to companies in the form of the International Integrated Reporting Framework (IIRC, 2021), but it is not compulsory for companies to strictly follow the guidelines. Many aspects of integrated reporting thus remain voluntary. There are no policies, legislation, or stock exchange requirements in place to thoroughly regulate the preparation of integrated reports. In addition, integrated reports are often still prepared with expert or specialist readers in mind such as providers of financial capital, thus ignoring the IIRC requirement that reports are prepared for a wider stakeholder base. These include employees, customers, suppliers, business partners, local communities, legislators, regulators, and policy-makers (IIRC, 2021). There has thus never been any reason or incentive for companies to improve the quality of their integrated reports with the result that the reports could continue to increase in length, become less readable, and be more biased to benefit the company.

While much of the existing literature has been laudatory in its treatment of corporate disclosures and integrated reporting, our research provides a unique contribution by adopting a critical lens. Through the application of objective measures like readability and narrative tone analyses over 12 years, we have unearthed a decline in the quality of non-financial disclosures in South Africa's basic materials industry. This diverges from the prevailing narrative that often emphasises the positive dimensions of reporting.

Our study, therefore, serves as a wake-up call for academia, policymakers, and industry practitioners. It urges the reassessment of existing practices and policies and paves the way for much-needed reforms to ensure corporate disclosures are useful for decision making. It suggests that improvements are not only attainable but might require legislative or regulatory changes for effective implementation. In doing so, our work opens new avenues for research and presents actionable insights for multiple stakeholders, including regulatory bodies.

Our findings suggest that there is still a way to go to improve reporting and that more clear enforced guidance may be necessary especially as IFRS is adopting the Integrated Reporting Framework and is strongly encouraging all preparers to apply it (IFRS, 2022). Fortunately, the standard-setting landscape for sustainability disclosure is already rapidly changing with IFRS S1 and S2 being implemented in January 2024 for sustainability reporting. This research indicates that such standards for narrative disclosures are long overdue and the authors trust that other aspects of disclosure will also in due course be standardised to allow for consistent, clear and transparent reporting.

As with any research, the study has limitations. The sample consists of annual and integrated reports from one country, and two industries, over a limited period. To expand on this study, one can include other countries, and other industries, and investigate the reports over a longer period. The study also does not consider investor or stakeholder opinions. Future studies can use a survey to establish whether investors and stakeholders find the integrated report to be of good quality and useful for decision-making. Future research can also delve deeper into the details of the disclosures of companies in the basic materials industry to establish whether disclosures are used to achieve specific legitimacy and impression management objectives.

ORCID

Elda du Toit https://orcid.org/0000-0001-8386-7969

REFERENCES

Adams, C. A., Larrinaga-González, C., Adams, C. A., & McNicholas, P. (2007). Making a difference: Sustainability reporting, accountability and organisational change. *Accounting, Auditing & Accountability Journal*, *20*(3), 382–402. https://doi.org/10.1108/09513570710748553

Ahmed Haji, A., & Anifowose, M. (2016). The trend of integrated reporting practice in South Africa: ceremonial or substantive? *Sustainability Accounting, Management and Policy Journal*, *7*(2), 190–224. https://doi.org/10.1108/sampj-11-2015-0106

Al-Najjar, B., & Abed, S. (2014). The association between disclosure of forward-looking information and corporate governance mechanisms: Evidence from the UK before the financial crisis period. *Managerial Auditing Journal*, *29*(7), 578–595. https://doi.org/10.1108/MAJ-01-2014-0986

Amato, N. (2022). IASB, and ISSB plan to work jointly on reporting framework's future. *Financial Management* Retrieved from https://www.fm-magazine.com/news/2022/may/iasb-issb-plan-work-jointly-reporting-frameworks-future.html?utm_source=mnl:updt&utm_medium=email&utm_campaign=10Jun2022&utm_medium=email&utm_source=SFMC&utm_campaign=A22_June10&utm_content=443419

Arena, C., Bozzolan, S., & Michelon, G. (2015). Environmental reporting: Transparency to stakeholders or stakeholder manipulation? An

analysis of disclosure tone and the role of the board of directors. *Corporate Social Responsibility and Environmental Management*, *22*(6), 346–361. https://doi.org/10.1002/csr.1350

Artene, A., Bunget, O.-C., Dumitrescu, A.-C., Domil, A.-E., & Bogdan, O. (2020). Non-financial information disclosures and environmental protection—Evidence from Romania and Greece. *Forests*, *11*(8), 1–16.

Arvidsson, S., & Dumay, J. (2021). Corporate ESG reporting quantity, quality and performance: Where to now for environmental policy and practice? *Business Strategy and the Environment*, *31*, 1091–1110.

Atkins, J., Atkins, B. C., Thomson, I., & Maroun, W. (2015). "Good" news from nowhere: Imagining utopian sustainable accounting. *Accounting, Auditing & Accountability Journal*, *28*, 651–670.

Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal*, *47*(1), 93–103.

Barth, M. E., Cahan, S. F., Chen, L., & Venter, E. R. (2017). The economic consequences associated with integrated report quality: Capital market and real effects. *Accounting, Organizations and Society*, *62*, 43–64. https://doi.org/10.1016/j.aos.2017.08.005

Barth, M. E., Cahan, S. F., Chen, L., & Venter, E. (2022). *Firm-specific information and proprietary costs: Evidence from mandated integrated reports*. SSRN. https://doi.org/10.2139/ssrn.3857927

Beattie, V. (2000). The future of corporate reporting: A review article. *Irish Accounting Review*, *7*(1), 1–36.

Bochkay, K., Hales, J., & Serafeim, G. (2021). Disclosure standards and communication norms: Evidence of voluntary disclosure standards as a coordinating device for capital markets. Available at SSRN 3928979.

Böhling, K., & Murguía, D. (2014). Sustainability reporting in the mining sector: Why institutional dynamics of reporting disappoint beliefs in its potentials for increased corporate accountability. Paper presented at the Conference on Regulatory Governance between Global and Local ECPR Standing Group on Regulatory Governance, 25–27 June 2014, Barcelona, Spain.

Boiral, O. (2013). Sustainability reports as simulacra? A counter-account of a and a+ GRI reports. *Accounting, Auditing & Accountability Journal*, *26*(7), 1036–1071. https://doi.org/10.1108/AAAJ-04-2012-00998

Bonsall, S. B., IV, Leone, A. J., Miller, B. P., & Rennekamp, K. (2017). A plain English measure of financial reporting readability. *Journal of Accounting and Economics*, *63*(2–3), 329–357. https://doi.org/10.1016/j.jacceco.2017.03.002

Bonsall, S. B., & Miller, B. P. (2017). The impact of narrative disclosure readability on bond ratings and the cost of debt. *Review of Accounting Studies*, *22*(2), 608–643. https://doi.org/10.1007/s11142-017-9388-0

Brown, J., & Dillard, J. (2014). Integrated reporting: On the need for broadening out and opening up. *Accounting, Auditing & Accountability Journal*, *27*(7), 1120–1156. https://doi.org/10.1108/aaaj-04-2013-1313

Caglio, A., Melloni, G., & Perego, P. (2020). Informational content and Assurance of Textual Disclosures: Evidence on integrated reporting. *European Accounting Review*, *29*(1), 1–29. https://doi.org/10.1080/09638180.2019.1677486

Cho, C., Michelon, G., & Patten, D. M. (2012). Impression management in sustainability reports: An empirical investigation of the use of graphs. *Accounting and the Public Interest*, *12*(1), 16–37. https://doi.org/10.2308/apin-10249

Cho, C., Roberts, R. W., & Patten, D. M. (2010). The language of US corporate environmental disclosure. *Accounting, Organizations and Society*, *35*(4), 431–443. https://doi.org/10.1016/j.aos.2009.10.002

Christensen, H. B., Hail, L., & Leuz, C. (2021). Mandatory CSR and sustainability reporting: Economic analysis and literature review. *Review of Accounting Studies*, *26*(3), 1176–1248. https://doi.org/10.1007/s11142-021-09609-5

Coulson, A. B., Adams, C. A., Nugent, M. N., & Haynes, K. (2015). Exploring metaphors of capitals and the framing of multiple capitals: Challenges and opportunities for< IR>. *Sustainability Accounting, Management and Policy Journal*, *6*(3), 290–314.

Craig, R., & Amernic, J. (2018). Are there language markers of hubris in CEO letters to shareholders? *Journal of Business Ethics*, *149*(4), 973–986. https://doi.org/10.1007/s10551-016-3100-3

Criado-Jiménez, I., Fernández-Chulián, M., Larrinaga-González, C., & Husillos-Carqués, F. J. (2008). Compliance with mandatory environmental reporting in financial statements: The case of Spain (2001–2003). *Journal of Business Ethics*, *79*(3), 245–262. https://doi.org/10.1007/s10551-007-9375-7

Daub, C.-H. (2007). Assessing the quality of sustainability reporting: An alternative methodological approach. *Journal of Cleaner Production*, *15*(1), 75–85. https://doi.org/10.1016/j.jclepro.2005.08.013

Davis, A. K., Piger, J. M., & Sedor, L. M. (2006). *Beyond the numbers: An analysis of optimistic and pessimistic language in earnings press releases* (Vol. 5). Federal Reserve Bank of St. Louis.

De Villiers, C., Low, M., & Samkin, G. (2014). The institutionalisation of mining company sustainability disclosures. *Journal of Cleaner Production*, *84*(1), 51–58. https://doi.org/10.1016/j.jclepro.2014.01.089

De Villiers, C., & Sharma, U. (2017). A critical reflection on the future of financial, intellectual capital, sustainability and integrated reporting. *Critical Perspectives on Accounting*, *70*(2020), 1–13. https://doi.org/10.1016/j.cpa.2017.05.003

De Villiers, C., Venter, E. R., & Hsiao, P. K. (2016). Integrated reporting: background, measurement issues, approaches and an agenda for future research. *Accounting & Finance*, *57*(4), 937–959. Portico. https://doi.org/10.1111/acfi.12246

Diouf, D., & Boiral, O. (2017). The quality of sustainability reports and impression management: A stakeholder perspective. *Accounting, Auditing & Accountability Journal*, *30*(3), 643–667. https://doi.org/10.1108/AAAJ-04-2015-2044

Du Toit, E. (2017). The readability of integrated reports. *Meditari Accountancy Research*, *25*(4), 629–653. https://doi.org/10.1108/MEDAR-07-2017-0165

Du Toit, E., van Zyl, R., & Schutte, G. (2017). Integrated reporting by south African companies: A case study. *Meditari Accountancy Research*, *25*(4), 654–674. https://doi.org/10.1108/MEDAR-03-2016-0052

Dumay, J., Bernardi, C., Guthrie, J., & Demartini, P. (2016). Integrated reporting: A structured literature review. Paper presented at the Accounting Forum.

Eccles, R., & Armbrester, K. (2011). Integrated reporting in the cloud. *IESE Insight*, *8*(1), 13–20.

Eccles, R., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science*, *60*(11), 2835–2857. https://doi.org/10.1287/mnsc.2014.1984

Emel, J., Makene, M. H., & Wangari, E. (2012). Problems with reporting and evaluating mining industry community development projects: A case study from Tanzania. *Sustainability*, *4*(2), 257–277. https://doi.org/10.3390/su4020257

Evans, J. (2019). Seven years since Marikana massacre and still no justice, says rights institute. Retrieved from https://www.news24.com/news24/SouthAfrica/News/seven-years-since-marikana-massacre-and-still-no-justice-says-rights-institute-20190815

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, *26*(2), 301–325.

Flower, J. (2015). The international integrated reporting council: A story of failure. *Critical Perspectives on Accounting*, *27*, 1–17.

Freeman, R. (1984). *Strategic management: A stakeholder approach*. Pitman.

Gray, S. J., Hellman, N., & Ivanova, M. N. (2019). Extractive industries reporting: A review of accounting challenges and the research literature. *Abacus*, *55*(1), 42–91.

Grewal, J., Hauptmann, C., & Serafeim, G. (2021). Material sustainability information and stock price informativeness. *Journal of Business Ethics*, *171*(3), 513–544.

Hart, R. (2000). *Diction 5.0: The text analysis program*. Sage.
Hart, R., & Carroll, C. (2013). *Diction 7: The text analyses program*. Digitext.
Hasan, M. M. (2018). Readability of narrative disclosures in 10-K reports: Does managerial ability matter? *European Accounting Review*, *29*(1), 1–22. https://doi.org/10.1080/09638180.2018.1528169
Hassan, A. (2019). Verbal tones in sustainability assurance statements: An empirical exploration of explanatory factors. *Sustainability Accounting, Management and Policy Journal*, *10*(3), 427–450. https://doi.org/10.1108/SAMPJ-06-2017-0051
Hooghiemstra, R. (2000). Corporate communication and impression management–new perspectives why companies engage in corporate social reporting. *Journal of Business Ethics*, *27*(1), 55–68.
Huang, X., Teoh, S. H., & Zhang, Y. (2014). Tone management. *The Accounting Review*, *89*(3), 1083–1113. https://doi.org/10.2308/accr-50684
Hussainey, K., & Al-Najjar, B. (2011). Future-oriented narrative reporting: Determinants and use. *Journal of Applied Accounting Research*, *12*(2), 123–138. https://doi.org/10.1108/09675421111160691
Hutton, A. P., Marcus, A. J., & Tehranian, H. (2009). Opaque financial reports, R2, and crash risk. *Journal of Financial Economics*, *94*(1), 67–86.
IFRS. (2022). Integrated Reporting—articulating a future path. Retrieved from https://www.ifrs.org/news-and-events/news/2022/05/integrated-reporting-articulating-a-future-path/?utm_source=sendinblue&utm_campaign=7th%20Colloquium%20-%20Community&utm_medium=email
IIRC. (2013). The International Integrated Reporting Framework. Retrieved from https://integratedreporting.org/resource/international-ir-framework/
IIRC. (2021). The International Integrated Reporting Framework. Retrieved from https://integratedreporting.org/resource/international-ir-framework/
IoDSA. (2016). King IV report on corporate governance for South Africa. Retrieved from iodsa.co.za/page/AboutKingIV
Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.
Jones, M. J., Melis, A., Gaia, S., & Aresu, S. (2017). Impression management and retrospective sense-making in corporate annual reports: Banks' graphical reporting during the global financial crisis. *International Journal of Business Communication*, *57*(4), 1–23. https://doi.org/10.1177/2329488417712010
Jugnandan, S., & Willows, G. D. (2021). "It's a long story…"–impression management in South African corporate reporting. *Accounting Research Journal*, *35*(5), 581–597.
Laskin, A. V. (2018). The narrative strategies of winners and losers: Analyzing annual reports of publicly traded corporations. *International Journal of Business Communication*, *55*(3), 338–356. https://doi.org/10.1177/2329488418780221
Li, F. (2008). Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics*, *45*(2), 221–247. https://doi.org/10.1016/j.jacceco.2008.02.003
Lock, I., & Seele, P. (2015). Analyzing sector-specific CSR reporting: Social and environmental disclosure to investors in the chemicals and banking and insurance industry. *Corporate Social Responsibility and Environmental Management*, *22*(2), 113–128. https://doi.org/10.1002/csr.1338
Loughran, T., & McDonald, B. (2014). Measuring readability in financial disclosures. *The Journal of Finance*, *69*(4), 1643–1671. https://doi.org/10.1111/jofi.12162
Loughran, T., & McDonald, B. (2016). Textual analysis in accounting and finance: A survey. *Journal of Accounting Research*, *54*(4), 1187–1230. https://doi.org/10.1111/1475-679X.12123
Merkl-Davies, D. M., & Brennan, N. M. (2007). Discretionary disclosure strategies in corporate narratives: Incremental information or impression management? *Journal of Accounting Literature*, *27*(1), 116–196.
Merkl-Davies, D. M., & Brennan, N. M. (2011). A conceptual framework of impression management: New insights from psychology, sociology and critical perspectives. *Accounting and Business Research*, *41*(5), 415–437. https://doi.org/10.1080/00014788.2011.574222
Milne, M. J., & Gray, R. (2013). W(h)ither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. *Journal of Business Ethics*, *118*(1), 13–29. https://doi.org/10.1007/s10551-012-1543-8
Ngwakwe, C. C., & Mtsweni, S. T. (2016). Extent of sustainability assurance in outh African mining companies. *Journal of Accounting and Management*, *6*(1), 59–74.
Ober, S., Zhao, J. J., Davis, R., & Alexander, M. W. (1999). Telling it like it is: The use of certainty in public business discourse. *Journal of Business Communication*, *36*(3), 280–296.
O'Donovan, G. (2002). Environmental disclosures in the annual report. *Accounting, Auditing & Accountability Journal*, *15*(3), 344–371. https://doi.org/10.1108/09513570210435870
Oll, J., & Rommerskirchen, S. (2018). What's wrong with integrated reporting? A systematic review. Paper presented at the NachhaltigkeitsManagementForum| Sustainability Management Forum.
Perkiss, S., Bernardi, C., Dumay, J., & Haslam, J. (2021). A sticky chocolate problem: Impression management and counter accounts in the shaping of corporate image. *Critical Perspectives on Accounting*, *81*, 102229. https://doi.org/10.1016/j.cpa.2020.102229
Puro, N. (2023). *When it comes to accountability for mining impacts, community is key*. GRI Retrieved from https://globalreportinginitiative.medium.com/community-is-key-achieving-accountability-for-mining-impacts-dc938486a37
PWC. (2020). SA Mine 2020 – Essential and Resilient. 12th ed. Retrieved from https://www.pwc.co.za/en/assets/pdf/sa-mine-2020.pdf
Raemaekers, K., Maroun, W., & Padia, N. (2016). Risk disclosures by south African listed companies post-king III. *South African Journal of Accounting Research*, *30*(1), 41–60. https://doi.org/10.1080/10291954.2015.1021583
Samkin, G. (2012). Changes in sustainability reporting by an African defence contractor: A longitudinal analysis. *Meditari Accountancy Research*, *20*(2), 134–166. https://doi.org/10.1108/10222521211277834
Savides, M. (2020). If our mine doesn't go ahead, thousands of jobs will be lost. Retrieved from https://select.timeslive.co.za/news/2020-11-01-if-our-mine-doesnt-go-ahead-thousands-of-jobs-will-be-lost/
SEC. (1998). A Plain English handbook: How to create clear SEC disclosure documents. Retrieved from https://www.sec.gov/pdf/handbook.pdf
Smeuninx, N., De Clerck, B., & Aerts, W. (2020). Measuring the readability of sustainability reports: A corpus-based analysis through standard formulae and NLP. *International Journal of Business Communication*, *57*(1), 52–85. https://doi.org/10.1177/2329488416675456
Stacchezzini, R., Melloni, G., & Lai, A. (2016). Sustainability management and reporting: The role of integrated reporting for communicating corporate sustainability management. *Journal of Cleaner Production*, *136*(1), 102–110. https://doi.org/10.1016/j.jclepro.2016.01.109
Stone, G. W., & Lodhia, S. (2019). Readability of integrated reports: An exploratory global study. *Accounting, Auditing & Accountability Journal*, *32*(5), 1532–1557. https://doi.org/10.1108/AAAJ-10-2015-2275
Stubbs, W., & Higgins, C. (2014). Integrated reporting and internal mechanisms of change. *Accounting, Auditing & Accountability Journal*, *27*(7), 1068–1089.
Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, *20*(3), 571–610. https://doi.org/10.5465/AMR.1995.950808033
The World Bank. (2020). Extractive Industries. Retrieved from https://www.worldbank.org/en/topic/extractiveindustries/overview
Wu, B., Monfort, A., Jin, C., & Shen, X. (2022). Substantial response or impression management? Compliance strategies for sustainable development responsibility in family firms. *Technological Forecasting and Social Change*, *174*, 121214. https://doi.org/10.1016/j.techfore.2021.121214

Zhou, S., Simnett, R., & Green, W. (2017). Does integrated reporting matter to the capital market? *Abacus*, *53*(1), 94–132. https://doi.org/10.1111/abac.12104

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: du Toit, E., & Delport, P. W. J. (2024). The progression of disclosures in the basic materials industry of South Africa. *Corporate Social Responsibility and Environmental Management*, *31*(2), 1433–1450. https://doi.org/10.1002/csr.2642