





Disclosure of the six capitals in strategy, risk and performance sections: Evidence from South Africa

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Purpose: This article assesses the integration of multi-capitals in the strategy, risk and performance disclosures in 240 integrated reports of 30 South African-listed companies between 2013 and 2020.

Design/methodology/approach: A disclosure checklist is developed interpretively, based on prior literature dealing with integrated reporting and thinking. A qualitative content analysis was conducted to evaluate the level of detail of multi-capital disclosures in the strategy, risk and performance sections of the sampled companies' integrated reports. Descriptive trends are discussed, and non-parametric tests were conducted to explore associations between the grouping variables (year, industry and market capitalisation) and level of detail and capital presence, respectively.

Findings/results: Companies are increasingly adopting a multi-capital approach to risk management, decision-making, strategies and operations and are disclosing the inputs, processes, outputs and outcomes in their integrated reports. The disclosure of multi-capital outcomes increases as an integrated logic takes hold in the companies. Significant positive associations were evident between the level of detail and the grouping variables. On average, companies included between four and six capitals in all integrated report sections. Financial capital and social and relationship capital were most prominent. Natural capital was the least referenced.

Practical implications: This article provides companies with a practical method to evaluate and enhance their integrated reporting strategies focussing on a holistic adoption of multi-capitals in strategy, risk and performance sections.

Originality/value: The longitudinal nature of the study, can add to the growing body of research on integrated thinking and reporting, particularly from a developing economy perspective.

Keywords: integrated reporting; integrated thinking; multi-capital; strategy; risk; performance.

Introduction

Companies have increasingly come under pressure to adopt an integrated thinking logic (Ecim, 2024). On the one hand, environmental concerns, social and political issues, crises, both natural and human made, pandemics and climate change have necessitated that companies consider more than just financial matters (Myeza et al., 2023). On the other hand, growing corporate governance and regulatory focus calls for companies to more broadly assess their impact across environmental and social dimensions (Afolabi et al., 2023).

In particular, the growing corporate and regulatory focus is evident with the development of sustainability-related frameworks and guidance such as the International Sustainability Standards Board (ISSB, 2021), the Task Force for Climate-related Financial Disclosures (TCFD), the Taskforce for Nature-related Financial Disclosures (TNFD) (FSB, 2021) and the Global Reporting Initiative (GRI). The frameworks and guidance stress the interconnection among economic, environmental and social factors to ensure the long-term sustainability of companies (Afolabi et al., 2023; Dimes & De Villiers, 2023).

Developments in sustainability-related guidance are also a result of increased stakeholder demands and institutional pressure for more holistic assessments and disclosures of how companies impact different resources (Ecim et al., 2020; Farooq & Maroun, 2017). In other words,

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companies need to address how they generate returns for shareholders and are able to meet debt obligations (financial capital), including the tangible (manufactured capital) and intangible (intellectual capital) resources deployed in order to do so (International Integrated Reporting Council [IIRC], 2021). Value cannot be framed in only financial terms (Herath et al., 2021). The impact on the employees (human capital), broader stakeholder groups¹ (social and relationship capital) and the environment (natural capital) must also be considered (IIRC, 2021). To put simply, a multi-capital approach is required to promote an integrated logic. This needs to be operationalised by companies and disclosed to stakeholders in integrated, or similar, reports to inform them of the capital outputs and outcomes (Ecim & Maroun, 2023; Maroun et al., 2023).

This study assesses whether the strategy, risk and performance sections of integrated reports have effectively integrated and disclosed a multi-capital assessment, provided descriptions of these capital outputs and outcomes and offered company-specific applications and results related to strategy, risk or key performance factors. In addition, the strategy, risk and performance aspects are three key areas where a multi-capital integration can lead to improvements in the overall long-term viability of the company (Maroun et al., 2023). These areas are factored into decision-making, managing risks holistically and ensuring sustainable value creation, thereby fostering stakeholder trust (Dimes & De Villiers, 2023). The information in integrated reports should enable a meaningful assessment of the long-term viability of the company's strategy, risks, performance and business model (Gutmayer et al., 2022). A company's strategy, risk management and performance disclosures should allow stakeholders to make informed decisions (Barth et al., 2016). This can enhance information quality and hold firms accountable for their actions (Van Zijl & Hewlett, 2021).

To do so, a qualitative content analysis was conducted to evaluate the level of detail of multi-capital disclosures in the strategy, risk and performance sections of listed South African companies' integrated reports between 2013 and 2020 based on a disclosure checklist. Associations among the years, industries, market capitalisation, level of detail and capital presence are evaluated.

This provides three contributions. Firstly, given the emergence of sustainability-related frameworks and guidelines, most recently the ISSB's sustainability disclosure standards (ISSB, 2021), it is necessary to understand how companies approach the controls, analysis, reporting and disclosure of multiple capital including sustainability-related disclosures. This will assist in informing policies and best practices for how to not only report on the different capitals but also to use this information as part of the day-to-day

¹These include, for example, customers, suppliers, local communities, regulators, industry and trade associations, non-governmental companies and environmental groups.

decision-making, risk assessments, strategies, operations and performance evaluation.

Secondly, this study provides a novel longitudinal analysis of corporate reporting practices and trends over an 8-year period during which time integrated reporting prominence grew with the introduction of the IIRC's Integrated Reporting Framework in 2013 (IIRC, 2013b). Similarly, corporate governance practices developed from the King III code to King IV in 2016 (IoDSA, 2016). In addition, the study also provides insights into how a crisis (coronavirus disease 2019 [COVID-19] pandemic) has impacted reporting practices. This study provides a useful analysis of how these key milestones have impacted the disclosure practices of the 30 Johannesburg Stock Exchange (JSE)-listed companies in this sample.

Thirdly, South Africa provides a useful setting for examining integrated reporting and thinking practices. Given the well-established reporting and corporate governance environment, companies have had sufficient time to embed integrated thinking practices, and this study provides insights into how developing economies can approach multi-capital strategies, risk management and performance setting and evaluation. This is particularly relevant as social and environmental issues tend to have more adverse economic impacts on developing countries (Ecim & Maroun, 2023).

The 'Literature review' section outlines the literature used to develop the research questions and the methodology adopted. This is followed by the results and conclusion.

Literature review

The literature review expands on the theoretical underpinning of legitimacy and impression management. This is followed by the link to integrated reporting and thinking and concludes with the development of the research questions.

Legitimacy and impression management

Legitimacy theory provides a framework in a business context for how companies communicate with stakeholders (Ecim, 2024). Legitimacy is 'a generalised perception or assumption that a company's actions resonate with a socially constructed value system and are, as a result, desirable or appropriate' (Suchman, 1995, p. 574). From an institutional perspective, adopting a multi-capital approach can become a cultural control in a company because it shifts how value is understood, created and evaluated within the company and influences both decision-making and employee behaviour (Dumay & Dai, 2017). The incorporation of multi-capitals in a company promotes a culture of a balanced approach to decision-making, accountability for sustainability objectives, the reinforcement of ethics and values and encourages long-term thinking (Ecim & Maroun, 2024). From a strategic perspective, integrated reports can be used to generate the support of a broader

stakeholder group while managing key expectations, perceptions and impressions of the stakeholders (Diouf & Boiral, 2017). Companies can use integrated reports to explain the risks, strategies and performance in relation to the multi-capitals impacted by the company (Dube & Maroun, 2017). This can 'inform, iterate or change the perceptions of stakeholders with regard to the multi-capital management' (Ecim, 2024, p. 4).

The disclosures should embody the actual operationalisation of the multi-capital objectives. Although integrated thinking practices are assumed to be disclosed by firms through publicly available information (Farooq & Maroun, 2017), disclosures may illustrate that integrated thinking is not applied, or that there may be limited disclosures to maintain a firm's competitive advantage (McNally et al., 2017). The disclosure of the six capitals and the level of detail of disclosures may be affected by impression management (Haji & Anifowose, 2016). To put differently, on the one hand, some companies may be operationalising an integrated thinking logic but may lack the necessary disclosures of these practices. On the other hand, companies may be overstating their integrated thinking application by way of greenwashing, avoiding disclosures of negative outcomes or obfuscating actual practices to appear to be more aligned with multi-capital outcomes. This results in a performance gap between disclosures and practices, undermining stakeholder trust and the credibility of the integrated report (McNally et al., 2017).

A robust corporate governance structure will assist in having the relevant board oversight, control systems and feedback loops in place to manage a multi-dimensional focus (Bui & De Villiers, 2018). In line with this, South Africa's code of corporate governance, King IV, specifically advocates for inclusive capitalism. As quoted by Jonathan Labrey (IoDSA, 2016)²:

Long-term financial performance depends on the efficient and productive management of resources not currently measured by traditional accounting methodologies – human, intellectual, social and relationship and natural capitals. The financial market system is insufficient to guard against the multi-faceted and interconnected risks of the future and hence an inclusive market system should be adopted. (p. 4)

To put simply, the more the business model positively impacts the environmental and social factors, the more the quality of life in developing economies will improve and enhance long-term sustainability (IOD, 2016, p. 4). Codes of corporate governance can therefore provide a tool for implementing, measuring and evaluating the progress of multi-capital adoption.

Ultimately, the aim of disclosures of multi-capitals is to lower information asymmetry and provide details on the 'relationships between [the company's] operating and functional units and the capitals the organisation uses or

²Jonathan Labrey, Three shifts toward better decision-making (posted 26 May 2015, available at <https://integratedreporting.ifrs.org/news/three-shifts-towards-better-decision-making/>).

affects' (IIRC, 2021, p. 3). Conversely, reducing disclosures may be to maintain legitimacy or avoid attention (Deegan, 2002). As a result, integrated reports do have inherent limitations in that impression management cannot be precluded; however, these reports are a useful starting point for investors without private access to internal management processes and controls to understand the integrated thinking application being adopted.

Integrated reporting and thinking

Integrated thinking can be seen as an enabler of effective integrated reporting (Dimes & De Villiers, 2023). Increased importance is given to the implementation of integrated thinking by companies, particularly during times of crisis such as the COVID-19 pandemic (Myeza et al., 2023). Integrated thinking involves a multi-capital approach to understanding a business (IIRC, 2021). If these capitals are actively managed by governing bodies, they should be factored into the management of companies (Herath et al., 2021). The six capitals are financial, manufactured, intellectual, human, social and relationship and natural capital as defined by the IIRC (2013b).

Integrated thinking is a multi-capital management approach that allows companies to deliver their objectives to benefit key stakeholders. It is about creating and protecting value over time (IIRC, 2021). Stakeholders are demanding a broader range of information beyond financial information (Dumay & Dai, 2017).

Integrated reporting allows for strategy development, risk management, value creation and interactions between different company resources to be illustrated to stakeholders (De Villiers & Hsiao, 2017). This considers complex interrelated social, environmental and economic factors that are increasingly important in a society facing climate change, overpopulation and outbreaks of diseases (Myeza et al., 2023). Relevant issues facing businesses such as the health and safety of employees, business continuity, and biodiversity and ecological risk factors can be assessed and reported using integrated thinking and reporting (Maroun & Ecim, 2024).

Integrated reporting and integrated thinking are mutually enforced (Bridges & Yeoman, 2020); however, many practitioners fail to understand how to operationalise integrated thinking and not simply collect information to disclose it (Maroun et al., 2023). This suggests that integrated thinking and integrated reporting do not co-exist as envisioned by the IIRC. Current academic and professional literature does not provide details on how to implement and gauge integrated thinking (Malafronte & Pereira, 2021). As a result, understanding multi-capital reporting practices can shed light on how integrated thinking can be better managed.

Developing the research questions

Companies should explain how they manage multiple capitals to create sustainable returns in their integrated

reports (Cerbone & Maroun, 2019). However, the IIRC's Integrated Reporting Framework (2013b) may conflict with the sustainability and accountability of companies as firms have no obligation to report negative information (Flower, 2015). This is an inherent limitation of analysing integrated reports. Nevertheless, assessing the level of detail (which forms part of the content element of integrated report quality) of the strategy, risk and performance sections can provide additional insights into the value-creation process. How these disclosures change over time with regard to different capitals merits further exploration. As noted in the literature review, integrated reporting practices, corporate governance developments and different crises can trigger an integrated thinking logic to develop more rapidly and for companies to more broadly consider their multi-capital impacts. Consequently, the first research question is:

RQ1: How detailed are the multi-capital disclosures in the strategy, risk and performance sections in the integrated reports of the selected Johannesburg Stock Exchange (JSE) companies from 2013 to 2020?

Different grouping variables can impact the level of detail. These were identified from prior academic literature. The grouping variables used in this study include the year (Maroun et al., 2023), industry (Eccles & Serafeim, 2015) and market capitalisation (Busco et al., 2019), which drive the level of detail and capital presence disclosed.

Conceptually, companies in environmentally and socially sensitive (environmentally sensitive) industries will have more information to report to stakeholders that deals with social and environmental concerns (Eccles & Serafeim, 2017). This is because these firms have a greater opportunity and incentive to report on multi-capitals and will be more accountable for their impact on these capitals by disclosing a higher level of detail on the inputs, outputs and outcomes of multi-capitals than less environmentally and socially sensitive firms (De Villiers, 2017). Environmentally sensitive industries include mining, energy and chemicals and less environmentally sensitive industries include consumer goods, consumer services, telecommunications, health care and financial services because of the nature of their products (De Laan et al., 2017).

Firms in more environmentally sensitive industries require increased legitimacy because of the nature of their operations and increased pressure to report to stakeholders, government and society (Dube & Maroun, 2017). This implies that reporting on the social and relationship, human and natural capital could be significantly positively associated with more socially and environmentally sensitive industries.

Larger firm size (proxied by market capitalisation) is associated with more environmental, social and governance (ESG) information being reported (Maroun et al., 2023). Larger firms are under more public scrutiny than smaller firms because they impact a broader stakeholder group. To maintain legitimacy, larger firms are under greater pressure

to disclose ESG information (Ecim, 2024). In addition to this, larger firms also have more resources and advanced management information systems to collect, analyse and report on extra-financial information that is typically more difficult to record and analyse (Malola & Maroun, 2019).

Finally, when looking at the year, the capital disclosures would be expected to increase as sustainability-related regulations and guidance increase, which result in requirements to increase disclosures and assurance of extra-financial capital. In addition, as corporate governance structures become more robust and management information systems improve and are able to deal with information related to natural, human and social and relationship capital, companies will find it easier to develop dashboards to more comprehensively analyse the outcomes of multi-capital. As different stakeholder and institutional pressures increase to focus on social and environmental concerns, companies will increase multi-capital disclosures to maintain legitimacy, manage their competitive advantage and ensure long-term sustainability. As a result, the capital disclosures would be expected to increase over time and also focus on multiple capitals over the research period. As a result, the second research question is:

RQ2: Is the level of detail of multi-capital disclosures in the strategy, risk and performance sections associated with the year, industry and market capitalisation of the selected JSE companies from 2013 to 2020?

Methodology

The research approach, sample, selection of reports, data collection and analysis, analytical strategies and validity and reliability are detailed in the methodology.

Research approach

Qualitative content analysis was conducted on the integrated reports of selected JSE companies over the period 2013–2020 to analyse the multi-capital disclosures in the risk, strategy and performance sections. Descriptive trends are discussed and non-parametric tests were conducted to analyse associations with grouping variables (year, industry, size).

Sample

Purposive sampling was used to select the 30 largest JSE-listed companies by market capitalisation as of June 2021. The largest listed companies were selected in this study as these firms are likely to have the relevant resources, technical expertise and experience to provide integrated reports of acceptable quality (Malola & Maroun, 2019). In addition, these entities also have an established history of publishing integrated reports and have emphasised sustainability reporting. However, the findings may not be generalisable because only the largest firms were selected for this study.

The companies in the study can be classified into different industries. An adaptation of the FTSE-Russell Industry classification was used to group the companies (see Table 1).

The sampled companies were also grouped by quartile using the log of the market capitalisation. Quartile 1 included the entities with the lowest market capitalisation and Quartile 4 the entities with the highest market capitalisation³.

Selection of reports

The integrated reports published for the companies' 2013 to 2020 financial years (8 years) were analysed as this period coincides with the publication of the IIRC's Integrated Reporting Framework (2013b) and the release of King IV (2016).

The 8-year analysis provides a novel longitudinal analysis of the changes in the level of detail and reporting practices across developments in the sustainability reporting and corporate governance landscape. This also ensures that the impact of the COVID-19 pandemic was considered.

This study makes use of annual integrated reports that are seen as a firm's primary report (Haji & Anifowose, 2017). Only specific sections of integrated reports were assessed, which further limits the analysis. The publicly available integrated reports were sourced from the companies' official websites. All the companies in the sample had integrated reports for the study period.

Data collection and analysis

The integrated reports of the sampled companies were downloaded and analysed by the lead researcher. Information from other reports or websites was not considered for this study. Qualitative content analysis was performed to:

- Determine which sections of the integrated report would be used to extract the strategy, risk and performance information.
- Assess the level of detail of the capital disclosure in the stated sections.
- Assess whether each capital is included in the stated sections.

The qualitative information (such as words, paragraphs and diagrams) and quantitative information (such as quantitative results) were not presented consistently across the integrated reports. Content analysis was, therefore, the most appropriate method (Krippendorff, 2018). The relevant disclosures were listed in a disclosure matrix. Each report was read to understand its content and structure. A systematic analysis of the report was performed, initially, by reading specific sections. This was followed by analysing individual paragraphs, tables and images, which was the unit of analysis (Beattie et al., 2004; Krippendorff, 2018). To avoid the risk of overlooking meaning or context, the analysis was not

³This quartile split is as follows: Q1 = 5 companies and 40 reports, Q2 = 7 companies and 56 reports, Q3 = 11 companies and 88 reports and Q4 = 7 companies and 56 reports making up in total 30 companies and 240 reports.

TABLE 1: Industries represented in this study, number of companies and number of integrated reports.

Industry [†]	Number of companies	Number of integrated reports
Basic materials, industrials and oil and gas	3	24
Consumer goods and consumer services	10	80
Health care	3	24
Telecommunications and technology	2	16
Financials	11	88
Conglomerate [‡]	1	8
Total	30	240

Source: Adapted from FTSE-Russell. (2021). *Ground rules industry classification benchmark (Equity)*. 3(7), 1–27. Retrieved from https://research.ftserussell.com/products/downloads/ICB_Rules_new.pdf?_ga=2.135384947.314560193.1622424508-1637234550.1621699485

[†], As a result of the relatively small sample size that was used and to increase the exploratory potential of the statistical analysis and results, the industries were grouped into broader categories to ensure sufficient data observation points for the various industries. This was further refined into three categories ranging from 'financially sensitive' to 'not financially sensitive' for the purposes of conducting the statistical analyses.

[‡], Although a conglomerate is not a defined industry per se, this is a group company that has investments in basic materials, consumer goods, telecommunications and financials. The parent company is a holding company. As a result, it is useful to disaggregate and analyse this entity separately to ensure that the nature of the business model is fairly reflected and to avoid double counting the disclosures in multiple industry categories. In addition, analysing this as a potential outlier reveals additional insights.

performed at the level of specific words, phrases or sentences. The analysis of each paragraph entailed examining the report for the various capital disclosures and categorising these into six capitals. Thereafter, the use of specific themes such as business model impact, risk management, operational practices and performance evaluation were documented to add context to the disclosures. This represented a type of axial coding.

The analysis identified whether the report includes a (1) strategy, (2) risk and (3) key performance section. If sections were not present, the reports were analysed to determine whether strategy, risk or key performance were included in a different section. A keyword search was then performed to ensure that material concepts in other parts of the report were not overlooked. These include: 'strategic objectives, strategy, strategic, risk, key performance, key performing, key, perform, KPI, KP, performance, results, features, highlights, salient and indicator, deliverable'. Only the specified sections or the equivalent were analysed.

The level of detail of the strategy, risk and performance sections for each year was scored out of a maximum of 3. A score of 0 was awarded for no disclosure, 1 for Strategy or Risk or Performance mentioned only, 2 if Strategy or Risk or Performance mentioned and results are included *or* descriptions given and 3 if Strategy or Risk or Performance mentioned, results are included *and* a description is given. Results refer to whether the company provides company-specific context, information and results for the strategy, risk and performance aspects discussed. Description of strategy, risk or performance refers to whether the different strategic objectives, risk and performance indicators are defined or described (adapted from Marrone & Oliva, 2019).

The researchers flagged specific examples of disclosures from the different sections of the integrated reports, illustrating how companies are operationalising integrated reporting in the strategy, risk and performance sections.

Whether each capital is included in the strategy, risk and performance sections for each year was coded next. A score of 1 was assigned if the capital was present, alternatively, a score of 0 was assigned. This was done to determine whether each of the capitals was considered by the firms in its strategy, risk and performance sections for the respective years of the study (see Table 2).

Analytical strategies

Descriptive statistics are used to analyse the level of detail and presence of the capitals when grouped by year (2013–2020), industry (nature of main business activities) and market capitalisation (company size grouped into quartiles). Average figures are obtained by dividing the coded disclosures by six to obtain the frequency of capital disclosures per section. Thereafter, non-parametric tests were used as the data were not normally distributed. A Spearman rho and Kendall's tau-b test were performed to evaluate possible correlations and interconnections between the level of detail of the strategy, risk and performance sections and the grouping variables. The stated correlation tests were also used to determine whether there were any correlations between the presence of the capitals in the stated section and the grouping variables. Kruskal–Wallis tests and Jonckheere–Terpstra tests were used to determine whether there is an association between the level of detail in the stated sections and the presence of the capitals in the stated sections when grouped by year, industry and market capitalisation.

Validity and reliability

Data collection and analysis processes were iterative. The sections were identified by reading and understanding the

contents of the integrated report, using navigation tools in the integrated reports such as companies' tables of contents and keyword searches. Once the report was coded by the lead researcher, this was reperformed by the second researcher as well as research assistants. The coding was then compared, and all differences were flagged and resolved by the lead researcher in consultation with the other researchers. Inter-coder reliability was not deemed to be an issue as all differences were discussed and resolved. In doing so, the effect of bias when assessing the section level of detail is reduced. The definitions of the respective capitals were analysed using prior literature to determine which themes to use to identify each capital. In identifying themes using prior research, the researchers aimed to align the capital themes with prior literature.

To ensure the accuracy and completeness of the coding process, a pilot study using five companies across 8 years was conducted. The lead researcher assessed the level of detail in the strategy, risk and performance sections of the sampled integrated reports and identified whether each of the six capitals was present in the stated sections. Where themes needed to be updated because integrated reports presented other theme disclosures, the thematic content analysis table was updated. Techniques such as keeping a list of subthemes, continuously refining it and ensuring the integrated reports were coded using consistent methods, aimed to increase the reliability of the results. The coding process is inherently subjective as in any study of this nature. To ensure consistency, notes were taken with regard to any judgement applied in coding the disclosures, and all researchers were consulted in the process to ensure that consensus was reached.

TABLE 2: Thematic content analysis.

Capital	Description	Condensed theme disclosures (<i>these are provided as illustrative examples as the complete disclosure checklist is not disclosed</i>)
Financial capital	Financial capital is broadly understood as the funds a company has available (IIRC, 2013a; IRCSA, 2015). Financial concepts include economic thinking (IIRC, 2013a), the firm's earnings, financial liabilities and equity (Nilsson, 2016)	<ul style="list-style-type: none"> • Financial ratios • Economic environment
Manufactured capital	Manufactured capital is human-created and production-orientated tools and equipment (IIRC, 2013a). This includes public infrastructure, buildings, other tangible property (Nilsson, 2016) and other infrastructure used in the entity's business processes (Barnes, 2018)	<ul style="list-style-type: none"> • Physical infrastructure • Technological infrastructure
Intellectual capital	Intellectual capital requires a wide range of intangibles, research and development, and the contingency between investment in research and development, innovation, human resources and external relationships, which can determine a company's competitive advantage (IIRC, 2013a; Nilsson, 2016). Processes, policies and procedures, company structure, intellectual property (Nilsson, 2016; Setia et al., 2015), corporate brands, brand recognition, brand development, corporate culture and management philosophy (Haji & Anifowose, 2017) form part of intellectual capital	<ul style="list-style-type: none"> • Brand and reputation • Company governance and control • Business processes • Intellectual property and other intangibles • Research and development
Human capital	Human capital includes knowledge, skills, experience (Dess & Picken, 2000; IRCSA, 2015), competence and capabilities (Nilsson, 2016). It also links to other aspects of human capital, such as employee health and care (IRCSA, 2015; Nilsson, 2016), human resource development, employee loyalty and motivation (Nilsson, 2016), employee succession, number of employees (Haji & Anifowose, 2017) and employee benefits (Setia et al., 2015)	<ul style="list-style-type: none"> • Number of employees/staff turnover • Employee benefits • Staff performance • Staff safety and health • Training and skills investment • Key staff retention • Overall employee satisfaction
Social and relationship capital	Social and relationship capital includes relationships within and outside a company (IIRC, 2013a). It includes supply chain relationships, community acceptance, customer loyalty, government relations, relationship with competitors and other stakeholders (Haji & Anifowose, 2017; Nilsson, 2016; Setia et al., 2015), and recruitment of disadvantaged groups (Haji & Anifowose, 2017)	<ul style="list-style-type: none"> • Customers • Broad-Based Black Economic Empowerment (BBBEE), employee empowerment and related initiatives • Projects by the firm to help society • Laws and regulations • Supply chain • Funders of capital
Natural capital	Natural capital includes resources that can be used by people to provide a return (IIRC, 2013a; IRCSA, 2015). It includes the effects of carbon emissions, pollution and climate change (IRCSA, 2015) including the use of and impact on land resources, air resources, water resources and energy (Nilsson, 2016; Setia et al., 2015)	<ul style="list-style-type: none"> • Project to help the environment • Climate change/natural disasters • Sustainable supply chain/business processes • Sustainability principles such as sustainable development goals and global reporting initiative

Source: IIRC. (2021). *The international integrated reporting framework*. Retrieved from <https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf>

Note: Please see the full reference list of this article for more information.

Results

The results are presented according to the research questions developed.

Research question 1

Out of the 240 sampled integrated reports, 237 integrated reports included strategy information in a designated section of the integrated report and 235 integrated reports included risk factors in a designated section. In the sample, 208 integrated reports had a specific section named the strategy section, and 201 companies had a section dedicated to discussing the company risks. All the companies included performance-related information in designated sections but only 73 explicitly mentioned that performance-related to the key performance of the company.

The average level of detail in the strategy section was 2.53 (standard deviation = 0.72) followed by a slightly lower mean level of detail in the risk section of 2.45 (standard deviation = 0.65) and the performance average level of detail 2.36 (standard deviation = 0.58) being the lowest of all the sections analysed. Organisations scored well across all three dimensions. However, the results indicated that not all the sampled integrated reports had a specific section, which contained strategy or risk information and included strategy and risk information throughout the report.

Results showed overall average disclosure of the six capitals is 5.19 in the strategy section, 5.25 in the risk section and 4.63 in the performance section. This suggests that companies were implementing a multi-capital approach. The capital that was observed most in the strategy and performance sections is financial capital. In the risk section, financial capital had the second-highest average score (0.97) tied with social and relationship capital with intellectual capital being the most disclosed (0.98).⁴ This indicates a prevalent focus on financial considerations still dominates the focus area of companies (Dumay & Dai, 2017).

A key observation is that financial capital in the performance section had a minimum of 1, maximum of 1, mean of 1 and standard deviation of 0. This indicates that financial capital was considered by all companies when disclosing their performance in their performance or equivalent sections. Non-financial capitals have a minimum score of 0. This observation is in line with observations in prior South African studies where financial capital was seen as core to firms' corporate reporting, with other capitals having less prominence (IRCSA, 2015). The least observed capital in all the sections was natural capital. Given the increasing focus on biodiversity and sustainability concerns (Maroun & Ecim, 2024), this is concerning given that many companies in South Africa are impacted by and directly impact the natural fauna

⁴The total coded scores per section (0, 1, 2 or 3 per the methodology) are averaged to obtain a score out of 1 for each respective capital. These individual capital scores are then added to obtain an overall 'multi-capital' score for the company. Higher scores reflect a more comprehensive disclosure of the capitals.

and flora of the environment in which they operate. Out of the integrated reports observed, only 63% of the integrated reports included natural capital in the strategy section, 58% in the risk section and 55% in the performance section. This indicates that there is room for improvement in developing a more comprehensive and complete assessment of environmental impacts to assist in decision-making, operations, strategies and performance.

The level of detail is above 2 for all sections in 2013, which may be indicative of a strong early adoption of integrated reporting practices in South Africa. This has increased to close to the maximum score of 3 in 2020 where it was 2.9 for the strategy, 2.7 for risk and 2.5 for performance, which may be because of the sampled companies refining their reporting practices.

Research question 2

Table 3 presents the results of the non-parametric tests performed for the grouping variables being year (2013 to 2020), industry (grouped by the nature of the companies) and market capitalisation (grouped into quartiles). An un-tabulated Spearman's rho and Kendall's tau-b correlation were used to confirm the correlation between the variables.

The average level of detail in the strategy section is the highest among the sections in all the years except for 2016 and 2019. Disclosure moved from describing the strategy of the company with qualitative *or* quantitative information, from 2013 to 2016, to having most integrated reports including qualitative descriptions *and* results included in their strategy sections from 2017 until 2020. This may be because of King IV being published in 2016, which advocated for more robust management control processes. Table 3 indicates that there is a statistically significant association between the level of detail in the strategy section and the year and that this was a positive association as the years progressed from 2013 to 2020 ($H = 19.07; p < 0.01; J-T = 4.03; p < 0.01$). There is a positive correlation between year and level of detail in the strategy section, significant at the 1% level (un-tabulated Spearman's rho: $r = 0.260, p < 0.01$; un-tabulated Kendall's tau-b: $r = 0.217; p < 0.01$). Although the short-term implications of managing multiple capitals may decrease financial capital, the long-term benefits and sustainable growth justify this approach (Herath et al., 2021). An integrated strategy also enhances strategic decision-making and promotes goals that consider environmental stewardship (Hassan et al., 2020), broader stakeholder well-being (Rinaldi, 2020) and intellectual capital development (Guthrie et al., 2004).

The risk section showed the steepest increase of all the sections for the period analysed, increasing from 2.10 in 2013 to 2.73 in 2019 and 2020. There is a statistically significant association between the level of detail and the risk section (Table 3: $H = 36.57; p < 0.01; J-T = 6.02 p < 0.01$). There is a positive correlation between the level of detail in the risk

section and year, which is significant the more detailed the section is (un-tabulated Spearman's rho $r = 0.387$, $p < 0.01$; 0.331 ; $p < 0.01$ un-tabulated Kendall's tau-b). The Jonckheere–Terpstra test indicates that as integrated reports were published from 2013 to 2020, the level of detail of the risk section increased (Table 3: J–T = 6.02; $p < 0.01$). Integrated risk management strategies consider how, for example, environmental risks may be linked to social and financial risks and provide a more comprehensive view of potential threats (Malik et al., 2020). This also includes adopting a combined assurance approach to verifying the validity, accuracy and completeness of information used internally for decision-making and externally by stakeholders (Maroun & Prinsloo, 2020).

The performance section level of detail is consistent from 2013 to 2018, ranging between an average level of detail of 2.27 and 2.3, with a small peak in 2014 at 2.4. In 2019 and 2020, this average increased to 2.53 and 2.50, indicating that the level of detail of the performance sections on average became more detailed. Although not having a statistically significant association to year, the performance section level of detail has a weak positive correlation with the year at the 5% significance level (un-tabulated Spearman's rho: $r = 0.142$, $p < 0.05$; un-tabulated Kendall's tau-b: $r = 0.118$; $p < 0.05$). The results of the Jonckheere–Terpstra test also show a significant positive relationship between performance level of detail and year (Table 3: J–T = 2.16; $p < 0.05$). Integrated performance management and measurement encourages a balanced assessment of the company, promotes the responsible use of resources and prioritises accountability and transparency (Herbert & Graham, 2022). It is necessary to develop appropriate governance structures to support and monitor performance and implement feedback loops to monitor and correct deficiencies across the capitals (Maroun et al., 2023). An appropriate management information system also needs to be in place to collect extra-financial information related to performance management (Bui & De Villiers, 2018).

South African companies have embraced integrated approaches to strategy, risk and performance and have increased their disclosures to stakeholders to maintain legitimacy and meet institutional pressures. The positive associations and improvements identified in all of the sections may be indicative of the long-standing integrated reporting history, which includes quality reports and the continued refining of South Africa's integrated reporting practices over the years.

TABLE 3: Non-parametric tests for the level of detail.

Level of detail per section	Grouping variable					
	Year		Industry		Market capitalisation	
	H	J-T	H	J-T	H	J-T
Strategy section level of detail	19.07**	4.03**	24.74**	-3.81**	1.66	0.39
Risk section level of detail	36.57**	6.02**	21.92**	-1.10	13.31**	-1.51
Performance section level of detail	6.89	2.16*	12.82*	1.51	20.19**	-2.86**

H, Kruskal–Wallis H test; J-T, Standard Jonckheere–Terpstra test statistic.

*, Significant at the 5% level; **, Significant at the 1% level.

Industry analysis

Figure 1 illustrates the average level of detail of the strategy, risk and performance sections in each industry.

The industries had an average level of detail between 2 and 3 for strategy, risk and performance, except the Conglomerate with an average level of detail of 1.63 and 2.

The telecommunications and technology industry classification had the highest level of detail in its strategy (2.94) and risk sections (2.69). The high level of detail in the telecommunications industry may not be in line with expectations as it does not have environmentally sensitive products (Kilian & Hennigs, 2014). However, this may be because telecommunications companies play a role in connecting communities and enabling economic participation. In South Africa, access to telecommunication services does impact social equity and economic growth which may drive higher capital disclosures. At the same time, given the large-scale infrastructure and energy needs, there is in fact an indirect impact on the environment, which is increasingly being acknowledged and addressed by these companies. The public accountability and regulatory pressure will also necessitate more robust disclosures (Gillwald, 2005).

The financial industry had the highest level of detail in the performance section (2.49). These findings, at first glance, may not be as expected as their financially orientated products are not seen as environmentally sensitive (Kilian & Hennigs,

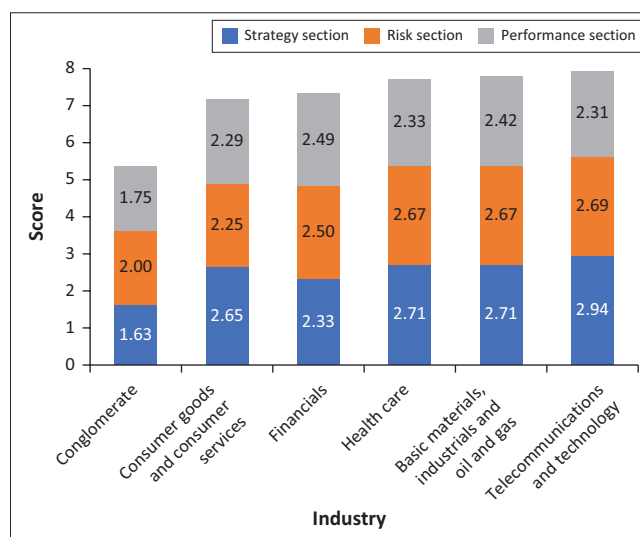


FIGURE 1: Graph showing the average level of detail of the strategy, risk and performance sections for all the companies by industry classification.

2014; Michelon et al., 2015). There is, however, a growing focus on products such as green bonds (Flammer, 2021; Van Zijl et al., 2022), which drive a more integrated approach to performance management. This may also point to a growing trend in less environmentally sensitive industries recognising the need to include broader capital assessments and objectives and factoring this into the performance evaluation structures. With regard to the risk section, environmentally sensitive (or controversial) industries may already have developed refined materiality determination processes because of a long history of dealing with non-financial capital and so focus primarily on disclosing material risks (Cerbone & Maroun, 2019). Despite this appearing to then be 'less detailed', it may in fact simply point to more refined assessments taking place. A similar logic would hold with the performance and strategy sections. Stakeholders should place emphasis on understanding the implications of the reported results and the materiality determination process.

Companies in the basic materials, industrials and oil and gas industries included a great level of detail in all the stated sections. This is as expected, given the high environmental and social impact of the industries (Kilian & Hennigs, 2014). The health care industry also reflects the high level of detail in all sections when aggregated, which is likely because of the high public interest and impact. The lower level of detail in the less social and environmental impact firms (financials, consumer goods and services, and conglomerates) when aggregating the level of detail of the strategy, risk and performance sections are in line with expectations (Kilian & Hennigs, 2014).

From Table 3, the industry and level of detail in the strategy section and risk section are statistically significant (strategy section: $H = 24.74$; $p < 0.01$, risk section: $H = 21.92$; $p < 0.01$). The level of detail in the performance section has a statistically significant relationship to the industry at the 5% level ($H = 12.82$; $p < 0.05$).

The strategy section has a negative correlation with industry (un-tabulated Spearman's rho = -0.217 ; 0.01 ; un-tabulated Kendall's tau-b = -0.253 ; 0.01). The Jonckheere–Terpstra test shows that the level of detail in the strategy section decreases, as the industry changes (Table 3: $J-T = -3.81$; $p < 0.01$). The risk section also has a negative correlation with the industry, but this relationship is not significant. Conversely, the performance section has a weak positive association with industry. As a result, the level of detail of information reported may vary widely by companies in the same industry and may be a function of other, context-specific factors (Stacchezzini et al., 2016).

The basic material, industrials and oil and gas industries, which are socially and environmentally sensitive, have a 100% inclusion of all capitals in the risk section. Basic materials, industrials and oil and gas also have the highest natural capital presence in the strategy section and second-highest presence in the performance section. In the

performance section, the financials industry has the highest natural capital presence. The natural capital disclosure by other industries is significantly lower compared to the basic material, industrials and oil and gas industries in all sections. The results (except for the financials industry's high presence in the performance section) are in line with expectations given the environmentally sensitive nature of the industries.

Market capitalisation

Table 3 shows that the level of detail and market capitalisation have a statistically significant relationship in the risk and performance sections (risk section: $H = 13.31$; $p < 0.01$, performance section: $H = 20.19$; $p < 0.01$).

There was a negative trend from Quartile 1 (2.63) to Quartile 3 (2.31) and increased slightly when moving from Quartile 3 to Quartile 4 (2.41). This finding is in line with the correlation between market capitalisation and level of detail, which is weak and negative. The Jonckheere–Terpstra test in Table 3 shows that the higher the market capitalisation, the lower the level of detail in the performance section ($J-T = -2.86$; $p < 0.01$). This is a weak negative association according to un-tabulated Spearman's rho (-0.166) and un-tabulated Kendall's tau-b (-0.185), which are significant at the 1% level.

The negative correlation for the risk and performance sections is not as expected, given that there are more resources available to larger firms and greater pressures on firms with a higher market capitalisation to improve the quality of their integrated reporting (De Laan et al., 2017). However, given that the companies in the sample are among the largest listed on the JSE, further studies will be required to investigate the impact on companies that are smaller and not listed.

There is no statistically significant correlation between market capitalisation and the level of detail in the strategy section (Table 3: $H = 1.66$; $p > 0.1$). This section's level of detail has a positive association with market capitalisation, albeit weak (Table 3: $J-T = 0.39$; $p > 0.1$).

Table 4 presents the results of the non-parametric tests performed for the disclosure of the six capitals.

The Jonckheere–Terpstra test (Table 4) shows that as market capitalisation moves from Quartile 1 to Quartile 4, each of the capital disclosures in the risk section decreases. This relationship is statically significant for all capitals at the 1% level, except for natural capital, which is statistically significant at the 5% level (Table 4: $J-T = -2.17$; $p < 0.05$). The un-tabulated correlation coefficients show weak negative correlations between the market capitalisation and all the capitals (where all correlations are significant at the 1%, except for natural capital, which is significant at the 5% level [similar to the Jonckheere–Terpstra test]).

TABLE 4: Non-parametric tests for the six capitals.

Capitals in each section	Grouping variable					
	Year		Industry		Market capitalisation	
	H	J-T	H	J-T	H	J-T
Strategy section						
Financial capital	4.05	1.76	27.78**	-0.88	3.25	-0.06
Manufactured capital	15.23*	3.66**	17.96**	-2.16*	7.10	-2.64**
Intellectual capital	6.32	2.29*	14.57*	0.16	4.08	-2.02*
Human capital	4.25	0.97	29.91**	-4.55**	3.76	-1.83
Social and relationship capital	5.50	1.71	42.86**	1.43	5.01	0.44
Natural capital	6.95	1.43	15.74**	-3.04**	8.91*	-2.90**
Total for the six capitals	8.89	2.18*	18.20**	-3.70**	9.06*	-3.02**
Risk section						
Financial capital	5.71	1.75	3.45	-0.95	9.80*	-2.19*
Manufactured capital	6.16	2.15*	10.83	-3.11**	22.78**	-3.79**
Intellectual capital	4.77	1.44	3.90	-0.55	12.57**	-2.98**
Human capital	9.31	2.69**	31.97**	-2.47*	26.42**	-3.84**
Social and relationship capital	3.37	0.92	5.41	-0.42	15.83**	-3.29**
Natural capital	7.06	2.31*	31.14**	-3.15**	7.07	-2.17*
Total for the six capitals	11.68	3.22**	41.73**	-3.86**	19.41**	-3.86**
Performance section						
Financial capital	0.00	0.00	0.00	0.00	0.00	0.00
Manufactured capital	3.33	1.57	67.51**	1.46	1.49	0.96
Intellectual capital	9.56	2.91**	12.97*	1.57	12.84**	2.18*
Human capital	4.98	0.66	25.54**	-4.48**	0.46	-0.07
Social and relationship capital	5.38	1.75	36.44**	2.74**	9.27*	-0.91
Natural capital	7.78	1.16	65.05**	-6.78**	11.42**	-0.94
Total for the six capitals	11.63	2.69**	44.82**	-2.65**	5.77	0.85

H, Kruskal–Wallis H test; J-T, Standard Jonckheere–Terpstra test statistic.

*, Significant at the 5% level; **, Significant at the 1% level.

The only capitals that have a statistically significant association with market capitalisation from the Kruskal–Wallis H test (in Table 4) are intellectual capital and natural capital at the 1% level and social and relationship at the 5% level. Intellectual capital is the only capital that increases at a significant level (5%) when the market capitalisation increases from Quartile 1 to Quartile 4 (Table 4: J–T = 2.18; $p < 0.05$).

As a result, the findings of this study do not report a significant association between the level of detail and the size of a company. This may indicate a more institutionalised approach to integrated strategy, risk and performance management in South Africa. This is supported by the studies which find that South African companies have developed strong integrated thinking practices (Ecim, 2024; Ecim & Maroun, 2024; Haji & Anifowose, 2016). Given that South Africa is a leader in these practices, mimetic isomorphism would result in various companies of all sizes adopting these practices that would make the differences between the companies less pronounced.

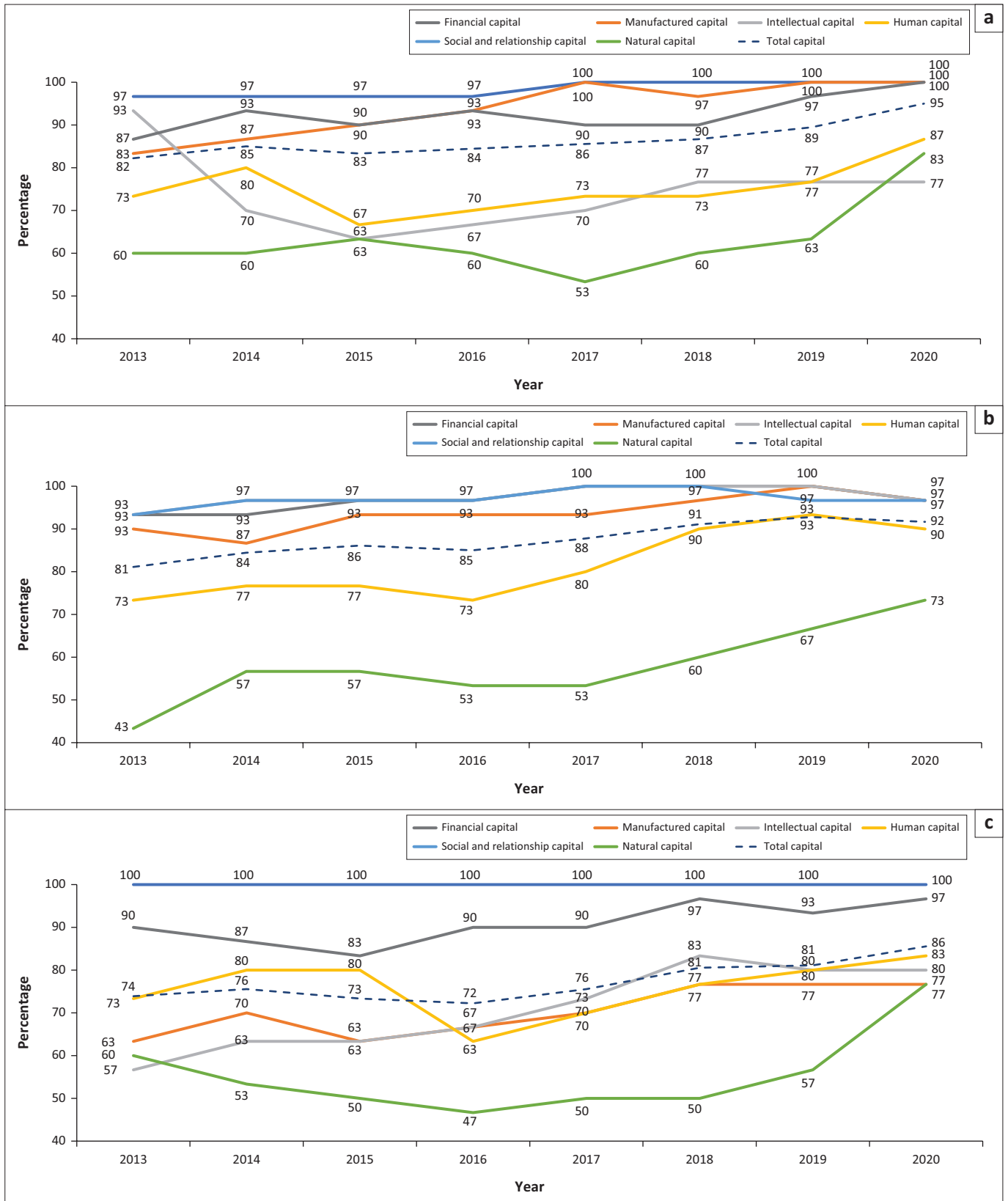
Year

Analysis of the associations between the year and the presence of each of the six capitals in the strategy, risk and performance sections are included in Figure 2

Financial and social and relationship capitals had the highest presence in all three sections of the integrated reports. This finding is in line with prior literature, which suggests that

financial capital is more prevalent in integrated reports than other capitals (Dumay & Dai, 2017). Social and relationship capital being prioritised is in line with expectations from prior studies, which indicate that more emphasis is placed on matters related to equitable employment practices (Varenova et al., 2013). Natural capital has the lowest presence in the strategy, risk and performance sections for all the years of the study, except in the strategy section in 2020 and the performance section in 2013. This is likely a result of the complexities in evaluating environmental-related data and putting control systems in place, which are able to collect, analyse and interpret this non-financial data. Nevertheless, the COVID-19 pandemic did create a shift in the mindset of companies, particularly around human and natural capital resulting in an increased focus on these issues. In addition, the adoption and advancement of new technologies promoted better control systems so that management could collect, analyse and report on data that is traditionally qualitative in nature and more complex to quantify such as that related to human and natural capital inputs and outputs (Gu et al., 2021).

Figure 2(a) shows that there is an increase in the total number of capitals in the strategy section of all the integrated reports in the sample. The increase from 89% in 2019 to 95% in 2020 may be because of increased efforts by firms in managing the effects of the COVID-19 pandemic in their business strategies and disclosing their considerations in their integrated reports' strategy sections (Myeza et al., 2023). There is a



Note for Figure 2(b): Intellectual capital overlaps with social and relationship capital from 2013 to 2018. Financial capital overlaps with social and relationship capital from 2015 to 2020.

FIGURE 2: (a) Percentage of companies that included each of the six capitals in the strategy section from 2013 to 2020, (b) percentage of companies that included each of the six capitals in the risk section from 2013 to 2020 and (c) percentage of companies that included each of the six capitals in the performance section from 2013 to 2020.

significant increase (at the 5% level) in the presence of intellectual (Table 4: J-T = 2.29; $p < 0.05$) and total capital (Table 4: J-T = 2.18; $p < 0.05$) as the years progress.

The correlation between the mentioned capitals is also positive and significant at the 5% level (intellectual capital [un-tabulated Spearman's rho: $r = 0.148, p < 0.05$; un-tabulated

Kendall's tau-b: 0.128; $p < 0.05$) and total capital (un-tabulated Spearman's rho: $r = 0.138$, $p < 0.05$; un-tabulated Kendall's tau-b: $r = 0.114$; $p < 0.05$). As part of strategic alignment improvements and developments, companies must integrate multi-capitals into business models. Companies will need to establish appropriate committees to consider how best to implement, manage and evaluate the inputs, processes, outputs and outcomes of a range of resources and capital. This needs to be done while still remaining profitable and generating returns for shareholders.

Figure 2(b) shows a steady increase in total capital, financial capital, intellectual capital and social and relationship capital in the risk section from 2013 to 2020. Manufactured capital, human capital and natural capital have also shown an increase from 2013 to 2020 but with a steeper gradient. Natural capital specifically increases steeply from 2013 to 2014. Natural capital made another steep increase from 2017 onwards (post-implementation of King IV). Human capital presence decreased from 77% to 73% in 2016 and, subsequently, increased rapidly from 2017 onwards, after the publication of King IV. The correlation between the mentioned capitals is also positive and significant at the 1% and 5% level (human capital (un-tabulated Spearman's rho: $r = 0.174$, $p < 0.01$; un-tabulated Kendall's tau-b: 0.151; $p < 0.01$), total capital (un-tabulated Spearman's rho: $r = 0.208$, $p < 0.05$; un-tabulated Kendall's tau-b: $r = 0.172$; $p < 0.01$), manufactured capital (un-tabulated Spearman's rho: $r = 0.139$, $p < 0.05$; un-tabulated Kendall's tau-b: 0.120; $p < 0.05$) and natural capital (un-tabulated Spearman's rho: $r = 0.149$, $p < 0.05$; un-tabulated Kendall's tau-b: $r = 0.129$; $p < 0.05$). Companies are beginning to integrate multi-capital considerations in risk assessments, mitigation strategies and opportunity identification.

Figure 2(c) shows that total capital disclosure in the performance section steadily increased from 2013 to 2020. Total capital disclosure increased in 2014 after the publication of the IIRC's Integrated Reporting Framework (2013b), decreased from 2014 to 2016 and then increased in 2017 after the publication of King IV. The capitals with the most drastic movements are natural and human capital. Natural capital presence in the performance section decreased from 2013 to 2016 between the period when the 2013 Framework was published and the introduction of King IV. From 2016, it gradually increased until 2019. It increased drastically from 2019 (57%) to 2020 (77%). This may be because of increased concerns by firms about the environment and sustainable business practices when considering business strategy in light of the COVID-19 pandemic. Human capital presence increased drastically from 2013 (63%) to 2014 (80%), 1 year after the IIRC's Integrated Reporting Framework (2013b) was introduced and remained at 80% in 2015. There was a sharp decline in human capital disclosures at 63% in 2016. From 2016 to 2020, there was a steep increase in human capital presence. The period from 2016 to 2020 coincides with the publication of King IV to date. A challenge when adopting integrated thinking in performance evaluation structures is

that the goals of management and executives are often focussed exclusively on financial issues. A holistic performance evaluation structure, which incorporates social and environmental factors in addition to economic ones, is one tool which can be used to promote a more sustainable outlook (Stubbs & Higgins, 2014).

Conclusion

The study adds to integrated reporting quality research through an analysis of section level of detail in different integrated report sections. It also contributed to the application of integrated thinking through a multi-capital approach in integrated report sections, which is not well understood by stakeholders (Arul et al., 2020).

This study's findings are in line with most prior studies' findings, indicating that over the years capital presence has increased, the presence of financial, social and relationship capital is strong, and there is a better reporting quality in different sections (Malola & Maroun, 2019; Setia et al., 2015). It also provides interesting trends that are not as expected. These results include more environmentally sensitive industries that have less capital disclosures in their strategy, risk and performance sections. Companies with higher market capitalisation are also not considering all the capital in their strategy, risk and performance sections.

The integration of multi-capital assessments into risk management, performance evaluation and strategy sets a precedent for other countries in developing economies investigating ways in which to enhance their corporate transparency, legitimacy and sustainability practices. By adopting a holistic view that considers both financial and non-financial metrics, the companies in the sample have demonstrated how operationalising integrated thinking can align success and long-term value creation with broader societal and environmental factors. This is evidenced by the increased percentage of capital being reported (Figure 2) with particular emphasis on human and natural capital. An integrated approach enhances stakeholder confidence and addresses systemic risks, such as social inequality and biodiversity loss, that are particularly relevant to developing economies. As South African companies continue to refine their integrated reporting practices, it provides a robust framework for other developing nations to adopt, shaping best practices in corporate governance and sustainability disclosures that resonate with a global audience.

Relevant stakeholders are also encouraged to use the capital disclosure checklist to evaluate the multi-capital disclosures of companies. Investors should use this to gauge the disclosures made in natural capital and compare and benchmark disclosures to companies in the same industry. This can assist in identifying the alignment with sustainability-related matters and current industry trends in adopting environmental and social implications. Investors, non-governmental companies and other stakeholders uncertain about the integrated thinking adoption can use the disclosures

made on the different capitals to better understand the company and to inform meetings with management and those charged with governance in identifying areas for improvement. Standard-setters, policymakers and regulators can also use this in designing guidelines for core aspects of report disclosures. This can also be used when only publicly available information is at hand and stakeholders are required to determine the company's broader impacts. The assurance of this non-financial information is therefore a key area for future research, particularly given that material disconnects between reporting and behaviour because of impression management or error cannot be precluded.

This study does have limitations. The small sample size can impact the inferences drawn from the results. This weakness was mitigated by sampling a range of companies across various industries. Future studies can include more listed companies as well as smaller and unlisted companies to determine whether the level of detail and capital disclosures reported differ. Although unlisted companies are not obligated to report on natural, social and relationship, intellectual, manufactured or human capitals, the institutionalisation of this practice, in conjunction with growing stakeholder demands from, for example, customers, suppliers and lenders, may necessitate these companies to also include information on multi-capital management in their management commentary. The study can also be expanded to different jurisdictions outside of South Africa. This article focussed exclusively on the strategy, risk and performance sections of integrated reports and so can be expanded to other integrated report sections, such as the business model section. Case study and interview-based research can also provide a richer analysis of the operationalisation of integrated thinking in multi-capital assessments. Future research can broaden the scope of the analysis beyond 2020 to assess the impact of recent developments in sustainability-related frameworks, the convergence of different guidelines and changes to capital disclosures post-2020.

This study does not prove causal relationships or the direction of causation. For example, where reference is made to the IIRC's Integrated Reporting Framework (2013b) and King IV (2016) and whether increases or decreases occurred at publication or post the publication of these guidelines, this aims to make the reader aware of capital increases and decreases around these periods. Although the article expects, in line with prior literature, to see increases in the presence of non-financial capital at or immediately after the publication of these guiding documentations, it does not imply that the guidelines do, with absolute certainty, influence the presence of the capitals in the sections analysed. Further econometric tests are required in this regard.

Of particular relevance is the fact that the International Sustainability Standards Board (ISSB) has been advocating for a multi-capital approach to its sustainability standards. As a result, this study's findings help to contextualise how multi-capital strategies can be incorporated by companies.

Future research can expand on this by assessing how multi-capital strategies can be used as part of a broader integrated thinking logic and applied to various extra-financial frameworks, for example, the ISSB, the GRI and the Task Force on Climate-related and Nature-related Disclosures. In addition to this, the study can be expanded by comparing the best-practice disclosures between various jurisdictions, which may shed some light on how multi-capital strategies can be better implemented in developing economies where social and environmental issues are most prevalent. Ultimately, future research can better delineate the characteristics of an integrated thinking logic that can be operationalised by entities as part of a multi-capital strategy.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

A.C.R.S. was responsible for the Master's report that included data collection, formal analysis, investigation and writing the initial report. W.M. oversaw the project conceptualisation, supervision and review of the report. N.P. refined the report into a journal article, updated the analysis and further developed the research topic. D.E. further refined the topic to introduce the theoretical underpinning, developed the integrated logic included in the revised version of the manuscript, addressed the reviewer's comments during the major revision and reviewed the article.

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of the Witwatersrand Human Research Ethics Committee (Non-Medical) (reference no.: WSOA-2021-10-04W).

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Data availability

The authors confirm that the data supporting the findings of this study are available within the article.

Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. It does not necessarily reflect the official policy or position of any affiliated institution, funder, agency or that of the publisher. The authors are responsible for this article's results, findings and content.

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