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An analysis of the section level of detail and disclosure of the six capitals in the strategy, risk and performance sections of the integrated reports of top JSE-listed companies

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AN ANALYSIS OF THE SECTION LEVEL OF DETAIL AND DISCLOSURE OF THE SIX CAPITALS IN THE STRATEGY, RISK AND PERFORMANCE SECTIONS OF THE INTEGRATED REPORTS OF TOP JSE-LISTED COMPANIES

A research report submitted by

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I. List of acronyms

The following acronyms appear in this report:

Table 1: List of Acronyms	
Acronym	**Meaning**
<IR> Framework	International Integrated Reporting Framework
ACCA	Association of Chartered Certified Accountants
CIMA	Chartered Institute of Management Accountants
Deloitte	Deloitte Touche Tohmatsu
EY	Ernst & Young
FTSE	Financial Times Stock Exchange
IFAC	International Federation of Accountants
IIRC	International Integrated Reporting Council
IoDSA	The Institute of Directors South Africa
IRCSA	Integrated Reporting Committee of South Africa
JSE	Johannesburg Securities Exchange
KPMG	Klynveld, Peat, Marwick, Goerdeler
PwC	PricewaterhouseCoopers
SAICA	South African Institute of Chartered Accountants
SASB	Sustainability Accounting Standards Board
UNEPFI	United Nations Environment Programme Finance Initiative

II. Abstract

Purpose: This thesis assesses the level of detail of the strategy, risk and performance sections of 240 integrated reports of 30 companies selected from the top 100 JSE-listed companies by market capitalisation on 09 June 2021 for their 2013 to 2020 financial years. It also assesses whether the six capitals of the IIRC's <IR> Framework are addressed in these sections.

Method: A disclosure checklist was developed interpretively, based on relevant literature. Content analysis was used to evaluate the level of detail of the respective sections of the sampled companies' integrated reports and whether the six capitals are addressed in these sections. Descriptive statistical tools, Kruskal-Wallis H tests, Jonckheere-Terpstra tests, and correlation tests (Spearman's rho and Kendall's tau-b), were performed to analyse the data and determine if there are significant associations between year, industry, market capitalisation (grouping variables), and level of detail and capital presence (dependent variables).

Key findings: There was a great level of detail in the strategy, risk and performance sections of the integrated reports. In the respective sections, the companies mentioned their strategy, risk and performance factors. They provided descriptions of these factors and/or provided company specific results on the factors mentioned. Significant positive associations were evident between level of detail and the grouping variables. The six capitals were often included in the sections. On average, companies included between 4 and 6 capitals in all integrated report sections. The presence of financial capital and social and relationship capital were prominent in the various sections. The presence of natural capital was the least referenced of the six capitals. Significant differences were evident between the grouping variables and various capitals in the sections.

Contribution: This paper is an exploratory study which assesses the level of detail and capital presence in specific integrated reporting sections. The longitudinal nature of the study (which coincides with the publication of the IIRC's <IR> Framework (2013) and King IV (2016)) can add to the limited number of studies on integrated thinking and reporting. A basic level of detail analysis of the strategy, risk and performance sections may be useful to understand content which firms are relaying about their value creation processes. This paper can assist stakeholders in better understanding integrated thinking through the IIRC's six-capital model.

Keywords: Integrated reporting, integrated thinking, level of detail, six capitals of the IIRC's <IR> Framework, strategy, risk, performance

III. Acknowledgements

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Chapter 1: Introduction

1.1 Purpose of the study

This study analyses the level of detail of the strategy, risk and performance sections of the annual integrated reports of top JSE-listed companies and whether the six capitals are addressed.

The level of detail assesses whether the strategy, risk and performance sections mention the strategy, risk or key performance factors, provide descriptions of these factors in the respective sections and provide company-specific application/results related to strategy, risk or key performance factors.

The six capitals include financial, manufactured, intellectual, human, social and relationship, and natural capital as defined by the IIRC (IIRC, 2013d).

The study covers the period when the IIRC published the IIRC's <IR> Framework (2013) from 2013 to 2020.

1.2 Context of the study

Integrated reports are a key means of communication to stakeholders. The information included in integrated reports should enable a meaningful assessment of the long-term viability of the corporation's strategy, risks, performance and business model (ACCA, 2012; IIRC, 2013d; Steyn, 2014; Slack and Campbell, 2016; Pistoni et al., 2018; IIRC, 2021; IRCSA, 2021; Gutmayer et al., 2022). (IIRC, 2013d). Integrated reports should provide a complete and clear account of the organisation's activities, including its strategy, performance and risks (Pistoni et al., 2018). An organisation's strategy, risk management and performance disclosures should be comprehensive for stakeholders to make informed decisions (KPMG, 2012b; Barth et al., 2016). This includes providing relevant information in sufficient detail for readers to incorporate these disclosures in their decision-making, including sufficient detail in all their integrated reporting sections. This can enhance information quality and hold firms accountable for their actions (ACCA, 2012; de Klerk and de Villiers, 2012; KPMG, 2012b; IIRC, 2013d; Slack and Campbell, 2016; Van Zijl et al., 2017; Pistoni et al., 2018; Marrone and Oliva, 2019; van Zijl and Hewlett, 2021).

Integrated thinking is seen as the core principle of integrated reporting (KPMG, 2012a; IIRC, 2013d; King, 2015; Adams, 2017; IIRC, 2018; IIRC, 2020; IIRC, 2021). The IIRC's long-term vision is to use integrated reporting to facilitate integrated thinking as a corporate reporting norm (IIRC, 2013d; IIRC, 2021). Integrated thinking is a critical area identified by the IIRC as an emerging discipline which is fast-growing but is adopted by organisations in disconnected ways (IIRC, 2018; IIRC, 2020). For example, interdependencies that exist between the

capitals, strategy, risk and performance may not presented clearly (IIRC, 2012). Increased importance is given to the implementation of integrated thinking by organisations (IIRC, 2013d; Deloitte, 2015; Deloitte and MVO-Nederland, 2015; IRCSA, 2018b; IRCSA, 2018a; IIRC, 2021; IRCSA, 2021). Globally, it has become ever more important during times of crisis such as the COVID-19 pandemic (Chen and Perrin, 2017; Arul et al., 2020; Atkins et al., 2020b; IRCSA, 2020). Integrated thinking involves a multi-capital approach to understanding a business (IIRC, 2013d; IIRC, 2020). If these capitals are being actively managed by governing bodies, they should be factored into the strategy, risk and performance management of organisations (IIRC, 2013d; King, 2015; IoDSA, 2016; Cosma et al., 2018; IIRC, 2021).

1.3 Research questions

In order to explore the level of detail of the strategy, risk and performance sections of JSE-listed companies' integrated reports and whether the six capitals are included in the respective sections for their financial years 2013 to 2020, the following research questions (RQs) were developed.

The first research question is:

> **RQ1: What is the level of detail of the strategy, risk and performance sections in the integrated reports of top JSE-listed companies and are the six capitals addressed in these sections from 2013 to 2020?**

The second research question is:

> **RQ 2: How does the level of detail of the strategy, risk and performance sections differ among top JSE-listed entities?**

RQ 2 has the following sub-questions:

> **RQ 2.1: Does the level of detail in the strategy, risk and performance sections of the integrated reports differ from 2013 to 2020 among top JSE-listed entities?**
>
> **RQ 2.2: Is there an association between the level of detail in the strategy, risk and performance sections of the integrated reports and industry from 2013 to 2020 among JSE-listed entities?**
>
> **RQ 2.3: Is there an association between the level of detail in the strategy, risk and performance sections of the integrated reports and market capitalisation from 2013 to 2020 among JSE-listed entities?**

The third research question is:

RQ3: How does reporting on the six capitals in the strategy, risk and performance sections differ among top JSE-listed entities?

RQ 3 has the following sub-questions:

RQ 3.1: Does the inclusion of each of the capitals in the strategy, risk and performance sections of the integrated reports differ from 2013 to 2020 among top JSE-listed entities?

RQ 3.2: Is there an association between the inclusion of each capital in the strategy, risk and performance sections of the integrated reports and industry from 2013 to 2020 among JSE-listed entities?

RQ 3.3: Is there an association between the inclusion of each capital in the strategy, risk and performance sections of the integrated reports and market capitalisation from 2013 to 2020 among JSE-listed entities?

1.4 Contributions of the study

This study adds to the limited body of research on integrated reporting and integrated thinking (Tweedie and Martinov-Bennie, 2015; de Villiers et al., 2020; Rossi and Luque-Vílchez, 2020). A growing number of empirical studies examine integrated thinking in a South African context with the focus on integrated reports as a whole (IRCSA, 2015; Setia et al., 2015; Eccles and Serafeim, 2017; Haji and Anifowose, 2017; EY, 2018; EY, 2019; EY, 2020; Herbert and Graham, 2021) and not on specific sections. Using specific sections is recommended in preparing the integrated report, (KPMG, 2012b; PwC, 2012; EY, 2014; PwC, 2019, p. 29).

It is considered good practice to explain an organisation's strategy, risk management and performance (i.e. the business model) (Chen and Perrin, 2017). An analysis of the strategy, risk and performance sections of a firm's integrated reports can be useful to users in better understanding the firm's integrated thinking model informed by a multi-capital approach (IIRC, 2013d; IIRC, 2021). An analysis of the stated sections' level of detail, can assist readers in understanding an organisation's strategy, risks and performance. It assists in the preparation of comprehensive reports (KPMG, 2012b; Chen and Perrin, 2017) that are of a better quality (Marrone and Oliva, 2019).

The longitudinal nature of the study can provide historical insights on the development of the adoption of integrated thinking and reporting from the publication of the IIRC's <IR> Framework (2013) in 2013 until 2020. Analysing the integrated reports of top JSE-companies is likely to provide insights to improve integrated reporting in the light of South Africa's long history of non-financial reporting and the opportunity to develop high-quality integrated reporting (Maroun et al., 2014; Malola and Maroun, 2019).

1.5 Assumptions, limitations and delimitations

Although integrated thinking practices are assumed to be disclosed by firms through publicly available information (Farooq and 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 (PwC, 2014; Steyn, 2014; Flower, 2015; Oliver et al., 2016; McNally et al., 2017; Cosma et al., 2018). The disclosure of the six capitals and level of detail of disclosures may be affected by impression management (Akbar, S. and Deegan, C. 2021; Haji and Anifowose, 2016b). The information reported on the six capitals in integrated reports may not be a perfect illustration of the integrated thinking approach the company follows (Tweedie and Martinov-Bennie, 2015; McNally et al., 2017). The level of detail in these sections may be affected by the revealing or concealing of information (Madsen, 2009; PwC, 2014; Cosma et al., 2018).

Level of detail is identified as an element of integrated report quality (Pistoni et al., 2018; Marrone and Oliva, 2019; Vitolla et al., 2019b; Atkins et al., 2020c). Although level of detail is an element of integrated report quality, this thesis does not use the terms interchangeably. It focuses on the level of detail aspect of integrated report quality in the strategy, risk and performance sections.

This study only makes use of annual integrated reports (which are seen as a firm's primary report (IRCSA, 2011; Haji and Anifowose, 2017)). Other reports and sources of information such as websites and other media (whether referenced in the integrated report or not) were not used in this analysis. This study provides a limited account of organisations' reporting practices (Dumay, 2016; Oliver et al., 2016). Only specific sections of integrated reports were assessed which further limits the analysis. Companies' were not consistent in the format of their integrated reports. To mitigate the risk of using an unsuitable section, the coding process included specific steps and considerations which were consistently applied to all the integrated reports to identify a suitable section.

The study was limited to integrated reports of JSE-listed companies. A sample of 30 of the top 100 listed companies were included in this study. The integrated reports were primarily sourced from companies' official websites publicly available on the internet. The sample does not include smaller companies and unlisted companies. All the companies in the sample had integrated reports for the period of the study, 2013 to 2020. The study was not extended to companies which did not have publicly available integrated reports for the 8 years of the study. The findings should not be generalised.

1.6 Format of this report

The remainder of this research report is set out as follows: The literature review is included in Chapter 2. The research questions appear in Chapter 3. This is followed by the methodology

in Chapter 4, and the presentation and discussion of the results in Chapter 5. Lastly, the paper presents the conclusion in Chapter 6 and includes the summary of findings, contribution and areas of future research.

Chapter 2: Literature review

This chapter provides an overview of the integrated reporting and integrated thinking. There is limited literature on integrated reporting sections, particularly on section level of detail. The literature review gives an account of integrated reporting quality, with emphasis on the level of detail on a broad range of integrated reporting disclosures in integrated reports. It further examines integrated thinking and a multiple capital approach. A disclosure checklist is developed with specific themes which encompass each of the six capitals. It further considers integrated reporting and thinking practices in South Africa. In conclusion, it provides an account of empirical findings on capitals disclosures internationally and in South African-listed companies' integrated reports.

2.1 The integrated report

The IIRC does not dictate the format of the integrated report (Slack and Campbell, 2016; Wang et al., 2020) but provides guidance on what should be incorporated in it. The IIRC states the following should be included: the fundamental concepts, guiding principles and content elements established by the IIRC (IIRC, 2013d).

The IIRC's <IR> Framework provides a balance between prescription and flexibility, ultimately allowing organisations to communicate their unique value creation story (Busco et al., 2014). The IIRC's <IR> Framework presents two fundamental concepts, namely, the value creation process and the capitals. The firm's value is closely connected to its internal processes and external factors, relationships with stakeholders, and interaction between different resources informed by the different capitals the firm affects and is affected by. Value creation should be short-, medium- and long-term orientated (IIRC, 2013d).

The guiding principles in the IIRC's <IR> Framework are strategic focus and future orientation, connectivity of information, stakeholder relationships, materiality, conciseness, reliability and completeness, consistency and comparability (IIRC, 2013d).

Eight content elements should be included in the integrated report. This is illustrated in Table 2 below.

Table 2: The IIRC's <IR> Framework's 8 Content elements

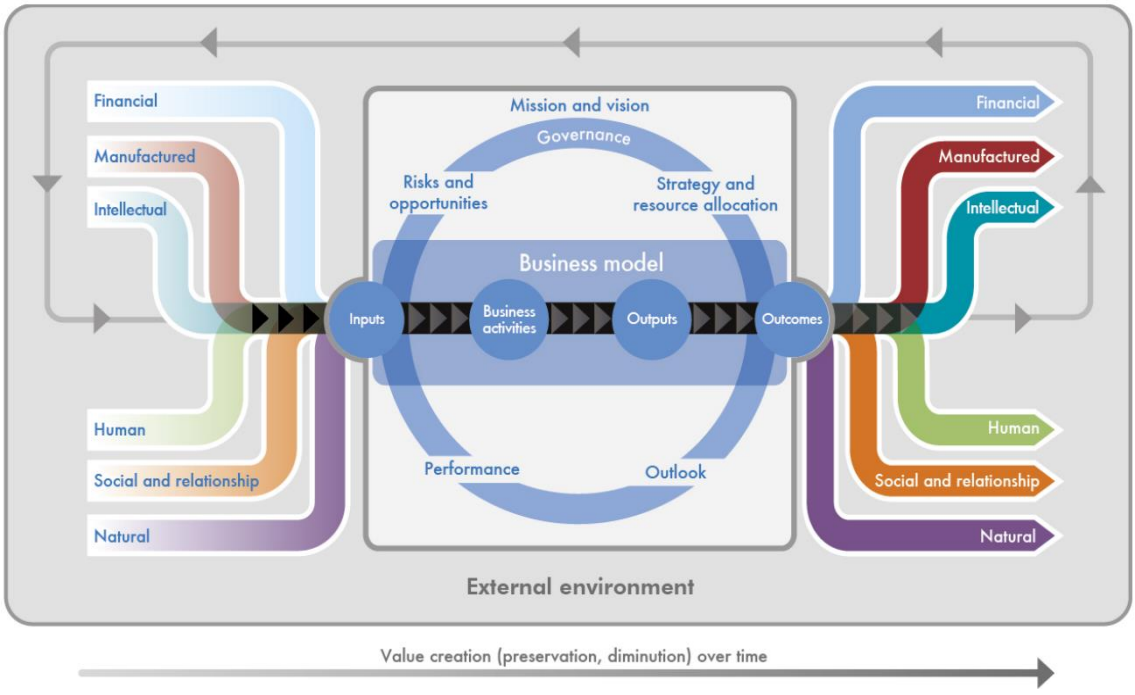
Content element	Description
1. Organisational overview and external environment	Businesses should explain what they do and the circumstances it operate in. This includes information on the mission, vision, culture, corporate values, internal structure, main

Table 2: The IIRC's <IR> Framework's 8 Content elements	
Content element	**Description**
	activities performed, markets in which the business operates and the competitors. It also incorporates key quantitative information, highlights key changes from previous periods, significant external factors and the entity's response.
2. Governance	Organisations must provide information on aspects such as the leadership structure and the board of directors. How the governance structure supports the organisation's ability to create value over time should be explained.
3. Business model	Companies must provide information about how they go about transforming inputs into outputs to create value through their business activities.
4. Risks and opportunities	This refers to the specific risks and opportunities which affect a business's ability to create value over time, and how the organisation is dealing with these risks and opportunities.
5. Strategy and resource allocation	Organisations should provide information about the strategic objectives, the methods of achieving these objectives, the strategies to be adopted and the sources of competitive advantage.
6. Performance	This relates to the extent to which the firm has achieved its strategic objectives for the period and what the outcomes are on the capitals. This includes quantitative and/or qualitative information in terms of financial and non-financial performance. Performance can be disclosed in terms of key performance indicators that present performance against targets. Performance can also incorporate monetising the effects on the

Table 2: The IIRC's <IR> Framework's 8 Content elements	
Content element	**Description**
	capitals such as the monetising effect of carbon emissions and water usage.
7. Outlook	Businesses must provide information on the challenges and uncertainties the organisation is likely to face in achieving its strategy, and what the potential implications are for its business model and future performance.
8. Basis of preparation and presentation	Organisations must provide information about the determination of materiality, reporting boundaries, and significant frameworks and methods used to quantify or evaluate material matters.
Adapted from IIRC (2013d) and Marrone and Oliva (2019)	

The fundamental concepts and content elements should interact as envisaged by the IIRC. Figure 1 below represents the IIRC's value creation process with the content elements at its core and the six capitals as inputs and outputs in the value creation process (IIRC, 2013d; IoDSA, 2016).

Figure 1: IIRC's value creation model



Source: IIRC (2013d), p.14

2.2 Integrated report quality and level of detail

The IIRC does not explain what integrated report quality is. It provides guidance on what should be included in an integrated report (with reference to the fundamental concepts, guiding principles and content elements) (Atkins et al., 2020c). These guidelines should be followed to create an integrated report which succinctly explains how value is created through an entity's strategy, governance, performance and prospects in its external environment over time (IIRC and SASB).

Integrated report quality is a concept which goes beyond solely adopting the IIRC's <IR> Framework (Vitolla et al., 2019b). There is, however, no definite measure of integrated report quality (Atkins et al., 2020c). A concept of integrated reporting quality developed by Pistoni et al. (2018) includes four aspects: background, content, form, assurance and reliability. Background evaluates the title of the integrated report, whether an introduction is present and

provides information on the objectives of the report, the reasons why the integrated report was adopted, the process managers, the recipients, the commitment from the Chief Executive Officer (CEO), and compliance with international reporting standards. Content evaluates the level of detail of the information provided within the report. Form analyses the accessibility, conciseness, readability, and clarity of the integrated report. Assurance and reliability assess the presence of internal or external assurance, and whether the entity received prizes or awards for its integrated report (Maroun, 2018; Maroun and Prinsloo, 2020; Prinsloo and Maroun, 2021).

Specific aspects of Pistoni et al. (2018)'s integrated reporting quality concept is evident in other studies (Marrone and Oliva, 2019). The background aspect of the integrated report quality concept developed by Pistoni et al. (2018) is evident in Zhou et al. (2017). Zhou et al. (2017) measured integrated report quality as the alignment of integrated reports with the IIRC's <IR> Framework. The coding framework had 31 components across the content and other elements. Each component was given a score between 0 and 1. Barth et al. (2017), and de Laan et al. (2017) used EY's Excellence in reporting scores in determining integrated report quality. Their studies illustrate the assurance and reliability aspect of Pistoni et al. (2018)'s integrated reporting quality concept . The other aspects of Pistoni et al. (2018)'s integrated reporting quality concept is likely to be evident in EY's excellence score (Maroun, 2019; 2022). For example, the judges believed that the firm which achieved first place in EY's 2021 Excellence awards had an attractive, well laid out and easy to read integrated report. This comment related to the form aspect of Pistoni et al. (2018) integrated report quality concept.

Some studies incorporate the content aspect of integrated report quality developed by Pistoni et al. (2018) in their studies. This includes assessing whether the content areas are present in integrated reports and the level of detail of disclosures presented in integrated reports. Bavagnoli et al. (2018) scored the content area (8 content areas and 2 fundamental concepts) each using a quantitative scale of 0 (absent) to 5 (very high quality) with a maximum achievable score of 50. Haji and Anifowose (2016a) studied the determinants of the quality of information contained in integrated reports. To measure integrated reporting quality, the authors used a scale from 0 to 3 which considered the presence of general qualitative, specific and detailed information incorporative quantitative information. Marrone and Oliva (2019) assessed the level of detail of the elements of the IIRC's <IR> Framework (which consisted of the 2 fundamental principles and 8 content elements of the IIRC's <IR> Framework) using a scoring system of 0 to 3. In Marrone and Oliva (2019), a score of 0 indicated no disclosure was made, a score of 1 indicated only qualitative information was present, and a score of 2 indicated qualitative and quantitative information was present. A score of 3 indicated that qualitative, quantitative and monetary information was present.

Features of high-quality reports have been identified in technical reviews in a South African context (Atkins et al., 2020c). This includes the completeness and clarity of explanations of fundamental concepts, guiding principles, and the coverage of the content elements in the integrated report (PwC, 2015; EY, 2018; Atkins et al., 2020c). Academic literature also provides additional quality proxies, such as the readability of the reports, the level of detail and evidence of impression management (Atkins et al., 2020c).

2.3 Integrated thinking

Integrated reporting is defined as a process grounded in integrated thinking which should lead to the creation of an integrated report which explains the value created by an organisation (IIRC and SASB). Integrated thinking is a multiple capital management approach that allows organisations to deliver their objectives to benefit key stakeholders. It is about creating and protecting value over time (IIRC,2020). The public's awareness of environmental and social issues is increasing. This results in stakeholders demanding a broader range of information beyond financial information which increases the demand for organisations to implement integrated thinking (Accounting for Sustainability, 2022; de Villiers et al., 2022; IFRS Foundation, 2022).

Integrated thinking is the cornerstone of integrated reporting (Busco et al., 2013; IIRC, 2013b; Chen and Perrin, 2017; ACCA, 2018). Integrated thinking can encourage a shift from siloed reporting to integrated reporting (de Villiers et al., 2020). Integrated thinking is associated with breaking down traditional silo thinking, creating strategies linked to material operations, increasing communications (Giovannoni and Fabietti, 2013; Barth et al., 2016; Cerbone and Maroun, 2020) and increased focus on long-term strategy rather than short-term results (Barth et al., 2016). The integrated thinking of the CEO impacts the value creation process and the coordination of the six capitals in the organisation (Herath et al., 2021). Some papers suggest that integrated thinking can advance strategic planning and communication between an organisation's departments (BlackSun and IIRC, 2014; Barth et al., 2017; Dumay and Dai, 2017). Different departments learn from each other and work together more collaboratively. Strategy and planning expand to include other disciplines (BlackSun and IIRC, 2014). Linking an organisation's values and purpose to strategy, risks, opportunities, objectives, plans, metrics and incentives throughout the organisation enables better decision-making (IIRC,2020).

When integrated reporting is informed by integrated thinking, it allows for strategy development, risk management, value creation and considers the challenges presented by complex interactions between different organisational resources, and the risk and opportunities it presents. This considers complex interrelated social, environmental and

economic factors which are increasingly important in a society facing climate change, overpopulation and outbreaks of diseases. Relevant issues facing businesses such as health and safety of employees, business continuity and ecological risk factors can be assessed and reported using integrated thinking and reporting (Atkins et al., 2020b; Atkins et al., 2020c; de Villiers et al., 2020). This may lead to better decision-making (BlackSun and IIRC, 2014; Barth et al., 2016; Köhler and Hoffmann, 2016; Eccles and Serafeim, 2017) and enhanced firm value (Marcia et al., 2015a; Barth et al., 2016).

A well-prepared integrated report informed by integrated thinking supports a sustainable and long-term vision which is beneficial to organisations and stakeholders (Vitolla et al., 2019a). It contributes to financial stability, a sustainable business environment, and fewer regulatory and reputational risks (Eccles and Saltzman, 2011; Eccles and Serafeim, 2011; Krzus, 2011). Integrated reporting and thinking can help companies focus on risk more effectively. Integrated thinking and reporting helps a company understand the effect of its strategic and tactical choices on society as internal and external communication is more attuned to stakeholder's needs (Krzus, 2011). Hughen et al. (2014) state that integrated reporting improves the understanding of organisations' strategies through the integration of financial and non-financial information. It also allows for value creation information to be communicated and includes how different stakeholders benefit from it (Haller and van Staden, 2014).

Integrated reporting and integrated thinking are mutually reinforcing (IIRC, 2013d; IIRC, 2013b; Churet and Eccles, 2014; IIRC, 2021). Churet and Eccles (2014) state that despite not being able to determine whether integrated thinking causes integrated reporting and vice versa, there is a strong mutually reinforcing cycle where integrated reporting fosters integrated thinking, and integrated reporting is a logical consequence of integrated thinking. This process should result in efficient and productive capital allocation, and act as a force for financial stability and sustainability (IIRC, 2013d; IIRC, 2021).

Integrated thinking is not well-defined and not clearly explained (IIRC, 2013c; Feng et al., 2017; Arul et al., 2020), resulting in practitioners not understanding it, in fact (Feng et al., 2017; Arul et al., 2020). This suggests that integrated thinking and integrated reporting do not co-exist as envisioned by the IIRC.

Empirical studies suggest that integrated thinking and reporting may not be mutually reinforcing. Al-Htaybat and von Alberti-Alhtaybat (2018) provide empirical evidence that integrated thinking can exist without integrated reporting. The integrated report reflects the organisation's outcomes of integrated thinking but did not reflect that one supported or lead to the other. Instead, they naturally aligned (Al-Htaybat and von Alberti-Alhtaybat, 2018). There is also evidence that integrated reporting can be adopted without integrated thinking in making

business decisions (Stubbs and Higgins, 2014). Stubbs and Higgins (2014) find that integrated reporting does not necessarily result in innovations or changes in the reporting process. Instead, it results from incremental changes to structures and processes which supported sustainability reporting previously. This suggests that integrated thinking and integrated reporting may need to be considered independently (Arul et al., 2020).

Integrated thinking is an important concept introduced in corporate reporting. Integrated thinking includes the company's use of the six capitals and their inter-relationship. Secondly, it incorporates the consideration of the capitals and their interaction with the organisation's past, present and future activities. Thirdly, it comprises the material needs of major stakeholders and the entity's capacity to meet those needs. Lastly, it includes the company's business model, which is structured to attend to external shifts in their business environment and react to opportunities and threats (IIRC, 2013d; Arul et al., 2020; IIRC, 2021). Jensen and Berg (2012) state that the wide-ranging goals of integrated reporting have led to confusion on its implementation and developing an understanding of integrated thinking have not been prioritised.

2.4 Multi-capital approach

Current academic and professional literature do not provide detail on how to implement and gauge integrated thinking (Arul et al., 2020). However, according to Professor Mervyn King, integrated thinking is:

> *"A collaborative management culture, a **multi-capital mindset**[1] and outcome-based corporate governance – these are the building blocks of integrated thinking, the output of which is an integrated report. Above all, integrated thinking is a unifying concept and a strategic tool that helps management to bring order to the manifestly complex environment in which businesses must operate in the 21st century"* (IIRC, 2020, p. 3).

Multi-capital approach is a system value model which integrates the management of issues related to the business, environment and society (IIRC, 2020). This includes a consideration of all the capitals which a company affects and is affected by in the short-, medium- and long term (IIRC, 2013d; King, 2015; Chen and Perrin, 2017; IIRC, 2018; IIRC, 2021). Organisations should explain how they manage multiple capitals to create sustainable returns in their integrated reports (IRCSA, 2011; IIRC, 2013d; Malola and Maroun, 2019; Maroun and Cerbone, 2020; IIRC, 2021).

The IIRC defines each of the six capitals as follows:

[1] ***Multi-capital mindset*** is emphasised for the purpose of this paper.

- Financial capital represents funds available to an entity to be used in its business processes. It includes financing from debt, equity, grants, investments and firm operations.
- Manufactured capital includes the physical objects available to firms that are used in their businesses. These include buildings and equipment, and infrastructure such as roads and bridges.
- Intellectual capital includes business and knowledge-based intangible items such as intellectual property, and knowledge of organisational procedures, systems and protocols.
- Human capital refers to the competencies, capabilities and experience of people including their enthusiasm to innovate.
- Social and relationship capital includes the relationships within and between stakeholders and the entity including communities affected by the entity and the organisation's social licence to operate.
- Natural capital includes all the renewable and non-renewable resources from the environment that supports the sustainability of a business. It comprises of air, water, minerals, biodiversity and eco-systems (IIRC, 2013d).

A multi-capital mindset is seen as fundamental to integrated thinking (IIRC, 2020). The current best performers base their business decisions on interconnected information across multiple capitals where financial capital is seen as one of many capitals (Coulson et al., 2015; IIRC, 2020). Integrated reports should follow a process of integrated thinking within the organisation. This suggests that the organisation should have an awareness of the interrelated nature of the organisation's financial and non-financial capital which is used to create value (IIRC, 2013d; IIRC, 2013b). Although the integrated report combines information from the financial statements and the sustainability (the social and environmental) report, there is more to the integrated report than merely merging financial and non-financial information in one report (IoDSA, 2016; Vitolla et al., 2019b). Increases, decreases and transformations of the capitals arising from the entity's activities and outputs should demonstrate how an organisation creates value over time (IIRC, 2013d).

Conversely, integrated reporting is also seen to have a limited impact on the advancement of the sustainable business agenda (van Bommel, 2014; Flower, 2015; Thomson, 2015; Dumay et al., 2017). Dumay et al. (2017) state that flexibility provided by the IIRC's <IR> Framework in disclosures and metrics results in different ways of implementing integrated reporting which provides empirical and theoretical challenges for academics, including the disclosure on the capitals. For example, firms may classify their interpretation of human and relational capital

under intellectual capital (IIRC, 2013d). Flower (2015) suggests that the IIRC's <IR> Framework often appears to conflict with the sustainability and accountability of organisations. He states that firms have no obligation to report on negative information which has no impact on their value creation although important to stakeholders. Thomson (2015) suggests that the IIRC's <IR> Framework, although a well-intended initiative, has limited application. The IIRC should develop a deeper understanding of what sustainable business entails and then build sustainable business practices (Thomson, 2015). van Bommel (2014) suggests that the emphasis on value for providers of capital leads to a financial capital focus which can result in bias and not legitimate compromise. The possibility that integrated reporting is used as an impression management tool should also not be ignored (Akbar, S. and Deegan, C. 2021; Haji and Anifowose, 2016b). This suggests that integrated thinking informed by the six capitals may not be applied by businesses (Marcia et al., 2015b; Maroun et al., 2018).

2.6 Integrated reporting, thinking and a multi-capital approach in South Africa

The first King Report on Corporate Governance (King I) was published in 1994 and was the first corporate governance report in South Africa. The King Report on Corporate Governance for South Africa 2002 (King II) was issued in 2002, introducing triple-bottom-line reporting (Malola and Maroun, 2019). Triple-bottom-line reporting includes reporting on economic, environmental and social aspects of the firm's activities. The King Report on Governance for South Africa 2009 (King III) was published in 2009 and confirmed the importance of non-financial disclosures or environmental, social and governance (ESG) disclosures and explained that the integrated report should explain the interconnection between economic, environmental and social aspects (IoDSA, 2009; Malola and Maroun, 2019).

In 2010, the JSE decided that all JSE-listed companies should prepare integrated reports or explain why they had not complied (SAICA, 2010; Appiagyei et al., 2018). This indicates the use of integrated reports by listed companies is not entirely voluntary (Malola and Maroun, 2019). In 2011, the IRCSA issued a discussion paper which stated that integrated reporting seems to have bridged the gap between sustainability reporting and financial reporting (which appeared to be disconnected) (IRCSA, 2011). The use of the IIRC's <IR> Framework was and continues to be encouraged in preparing integrated reports (JSE, 2019). The introduction of financial and non-financial reporting in South Africa in a single document and the encouraged use of the IIRC's <IR> Framework suggests that South African companies are in a position to incorporate a multi-capital approach in an integrated report as envisaged by the IIRC.

JSE-listed companies and several South African State-Owned Entities were encouraged to adopt integrated reporting as part of their King III application programmes from the years commencing on or after 1 March 2010. The South African business community viewed

integrated reporting as an innovative approach to look at and manage their businesses and report internally and externally. This included establishing benchmarks, trends, common material issues as well as performance measures which are in line with the IIRC's <IR> Framework content elements and guiding principles. This will result in better integrated reporting practice of South African companies over time (KPMG, 2012a).

Subsequently, the IIRC's <IR> Framework was introduced in 2013 which iterated many of the principles in King III. King IV was introduced in 2016 and currently serves as a guide for integrated reporting (IoDSA, 2016). King IV is aligned with the currently applicable IIRC's <IR> Framework (2013). Both frameworks include an inclusive six capital approach. The IIRC's <IR> Framework (2021) is the new guideline for integrated reporting for financial years commencing 1 January 2022. The IIRC's <IR> Framework (2021) and King IV are emphasised as important (and similar) guides for integrated reporting in South Africa (IRCSA, 2021). This is evidence of the continuous development of integrated reporting in South Africa, which aims to embed an integrated thinking mind-frame.

South African listed companies have been publishing integrated reports since 2010. Evidence exists that unlisted companies and non-profit organisations voluntarily adopted integrated reports as their primary reporting mechanism (Druckman, 2013; Roberts, 2017). A recent study by Marrone and Oliva (2020) shows that South African companies' integrated reports show a high level of alignment with the IIRC's <IR> Framework. The study used a sample of 65 companies which published integrated reports following the IIRC's <IR> Framework (2013) using their 2017 integrated reports. The scoreboard used in the study was adopted from Marrone and Oliva (2019) to assess companies' application of the IIRC's 8 content elements and 2 fundamental concepts: "value creation process" and "by the capitals". The paper evaluated whether the content elements were present or absent in integrated reports. This study suggests that integrated reporting in South Africa has been using the IIRC's <IR> Framework to a large extent, including information relevant to stakeholder decision-making and incorporating integrated thinking through a multi-capital approach. This shows that the IIRC's <IR> Framework is likely to be incorporated by South African firms. In addition, the integrated reports published by South African companies, were ranked as the best on average when compared to 10 other countries globally (Khanyile, 2019). This may confirm the statement made by Malola and Maroun (2019) that South African companies had a chance to refine their compliance with the IIRC's <IR> Framework.

Past studies, using pre-2013 integrated reports show that South African companies are biased toward positive disclosures using multiple impression management techniques and ignore negative outcomes indicating that the IIRC's <IR> Framework and integrated thinking was

applied to a limited extent (Solomon and Maroun, 2012; IRCSA, 2015). Despite this, there is evidence of development of integrated thinking by organisations and in their integrated reports concerning strategy, risk and opportunity (Moolman et al. (2016). Moolman et al. (2016) examined the development of integrated thinking between strategy, risk and opportunity of 18 top 100 JSE-listed companies using surveys and the latest available integrated reports as at 30 September 2015.

2.7 Empirical evidence on a multi-capital approach

Various authors investigated the capital disclosures that organisations include in their corporate reports (Solomon and Maroun, 2012; Carels et al., 2013; Wild and van Staden, 2013; IRCSA, 2015; Melloni, 2015; Serafeim, 2015; Setia et al., 2015; Adams et al., 2016; CIMA, 2016; Haji and Anifowose, 2017; Maniora, 2017; Herbert and Graham, 2019). Although prior research does not focus on the presence of the six capitals in specific sections, the studies are likely to provide evidence of reporting on the capitals that are similar to and can affect the presence of capital disclosures considered in various sections of integrated reports.

2.7.1 International evidence

Non-financial reporting has been promoted by the IIRC (IIRC, 2012; IIRC, 2013a; IIRC, 2021). Empirical evidence, internationally show that organisations are considering multiple capitals in their integrated reports. The IIRC's pilot study, using the 2013 corporate reports of 100 multinational companies suggests that companies are engaging in integrated reporting, and including both financial and non-financial information in their corporate reports (Serafeim, 2015). Serafeim (2015) states that many more firms are incorporating sustainability information in their financial reports, increasingly engaging in integrated reporting practices as more users are using this type of information.

Wild and van Staden (2013) studied 58 companies' 2013 corporate reports. Their sample consisted of companies which reported (including companies in the IIRC's pilot study). They find that although most companies addressed financial, human, natural, and social and relationship capital in their reports (between 86% and 90%), 43% disclosed manufactured capital and 40% intellectual capital in their integrated reports. Nevertheless, most companies addressed 4 or more capitals with 20% covered less than 4 capitals in their reports. This implies that firms globally appear to be progressing to implementing a multi-capital approach (Wild and van Staden, 2013). Adams et al. (2016) find that for four multi-national companies there is a visible shift in including sustainability information in their value creation strategy in their annual reports in line with the IIRC's <IR> Framework from 2009 to 2013.

International evidence suggests the amalgamation of financial and non-financial information in the integrated report is not better than separate reporting, as financial information seems to

attract the full attention of stakeholders and reduce the significance of non-financial information (Maniora, 2017). Prior literature suggests that manufactured capital is also commonly reported by firms, in addition to financial capital. Financial and manufactured capital are seen as tangible assets and liabilities while the other capitals are intangible factors which are becoming more important (CIMA, 2016). A study by Melloni (2015) analysed the integrated reports of 54 global companies which formed part of the IIRC's initial pilot study from 2011 to 2013 and found that social and relationship capital continue to dominate in integrated reports. The reason for this result is that firms are continuously working on improving their corporate image by increasing their social and relationship disclosures (Melloni, 2015; Setia et al., 2015) This may suggest that the disclosures on social and relationship capitals will continue to be prevalent in various integrated report sections.

The majority of the international evidence shows an increase in multi-capital disclosures. Some studies suggest that financial capital, manufactured and social and relationship capital are prevalent. These studies, however, do not consider the period post-2013 where events such as the COVID-19 pandemic affected the global economy which may result in different capitals being more prevalent in integrated reports than in the past.

2.7.2 Evidence from South Africa

Solomon and Maroun (2012) analysed the 2009, 2010 and 2011 annual and integrated reports of ten environmentally and/or socially sensitive JSE-listed South African companies. They examined the impact of the 2009 King III report on the social, environmental and ethical reporting of the sampled companies. They found there was a noticeable increase in the quantity of social, environmental and ethical disclosures in a greater number of sections in 2011 and 2010, compared to 2009. They discovered a significant increase in the number of such disclosures in integrated reports in 2010 and 2011, with a notable increase in social disclosures (see also Atkins and Maroun, 2015).

Carels et al. (2013) studied the sustainability disclosures in the integrated reports of fifteen mining companies listed on the JSE between 2008 and 2012. The period included the initial adoption period of King III. It ended one year before the publication of the 2013 IIRC's <IR> Framework. They found that companies' ethical disclosures remained constant throughout the period examined but environmental and social disclosure increased significantly. Transformation, labour relations and HIV/AIDS were the most common disclosures. The environmental disclosures were often included as qualitative information with key performance metrics.

Setia et al. (2015) analysed a sample of the top 25 companies listed on the JSE. The companies' 2009/2010 and 2011/2012 annual reports were assessed. They have similar

findings to Solomon and Maroun (2012), with a number of social and relationship capital disclosures at a significant level. They also found a higher number of human capital, natural capital and intellectual capital disclosures but these findings were not significant. Further, there is evidence that social information was included in more integrated report sections.

Haji and Anifowose (2017) studied sustainability disclosures in the integrated reports of 82 South African companies' integrated reports from 2011 to 2013. They found that intellectual and human capital disclosures increased during the period studied. In addition, relationship capital disclosures were more frequent in highly sensitive industries, such as the mining industry. Despite an increase in disclosures, interrelationships between the capitals and capital trade-offs were not evident.

Herbert and Graham (2019) have similar findings when analysing integrated reports of 45 South African companies for the 2011 and 2015 financial years. They concluded that there is an increase in sustainability disclosure, but not at a significant level.

Results from IRCSA (2015) which analysed the 2014 and 2015 integrated reports of some listed and public sector entities revealed that some of the sampled entities focused on financial capital but ignored the outcomes of the other capitals or only included these capitals until they had a long-term effect, even if these are key to an organisation. This suggests that financial capital is evident in integrated reports, but there is a time lag in the integration of non-financial capitals post-publication of the IIRC's <IR> Framework (Atkins et al., 2020a).

A large number of studies have been done in the South African context on sustainability reporting, using evidence prior to and soon after the introduction of the IIRC's <IR> Framework. Most of the studies found increases in the number of sustainability disclosures in integrated reports, with social and relationship capital showing significant increases. Evidence reveals non-financial capital is included in many sections of the integrated report in the initial years of integrated reporting. There is also evidence that financial capital is more likely to be addressed in integrated reports, compared to non-financial capital which may be absent or included at a later stage.

Chapter 3: Development of research questions

Although integrated reports should be concise communication (IIRC, 2013d; IIRC, 2021) they are often lengthy and difficult to read (Wild and van Staden, 2013). This may contribute to information overload experienced by users (EY, 2012; Stolowy and Paugam, 2018). The perceived problem of increased information and disclosures has resulted in user confusion and anxiety (Hoogervorst, 2017; Stolowy and Paugam, 2018). As a result, it is unlikely that stakeholders read the entire integrated report because of the high volume of information included in it (Deloitte, 2015).

The requirements of the content elements are seen to be a valuable proxy for disclosure guidelines (Moolman et al., 2016). Guidance on integrated report format has been recommended by various organisations, including audit firms: EY, KPMG and PwC (KPMG, 2012b; PwC, 2012; EY, 2014; PwC, 2019, p. 29). These guidelines include integrated reporting sections in line with the IIRC content elements. Recommended sections include strategy, risk and performance sections (KPMG, 2012b; EY, 2014; PwC, 2019).

Explaining the strategy, risk and performance content elements is important to stakeholders' decision-making (IIRC, 2013d; IoDSA, 2016; Eccles and Serafeim, 2017; Van Zijl et al., 2017; van Zijl and Hewlett, 2021), is considered best practice (Chen and Perrin, 2017) and provides insight into the company value creation process which is useful to stakeholders (Slack and Campbell, 2016). Assessing the level of detail (which forms part of the content element of integrated report quality (Pistoni et al., 2018; Marrone and Oliva, 2019)) of the strategy, risk and performance sections provides insights on what is explained on value creation in integrated reports.

Financial information and sustainability issues should be presented in the context of an organisation's value creation process to assist investors in understanding ESG issues and practices related to a specific business (Eccles and Serafeim, 2017; King et al., 2022). This includes the consideration of the six capitals. It should also be noted that some capitals may not be as relevant to some entities as they are to other entities, even though most entities interact with all the capitals. Because of a relatively minor interactions with specific capitals, these capitals may not be included in integrated reports or there may be limited inclusion of specific capitals in specific sections because it is not being sufficiently important to the organisations (IIRC, 2013d). An analysis of the adoption of the six capital approach by organisations in the stated sections may be useful given the important role it plays in the value creation process.

The above guidelines and reporting requirements triggered the need to investigate the level of detail and the presence of the six capitals in the strategy, risk and performance sections of integrated reports:

RQ1: What is the level of detail of the strategy, risk and performance sections in the integrated reports of top JSE-listed companies and are the six capitals addressed in these sections from 2013 to 2020?

South Africa has a long history of reporting non-financial information along with financial disclosures, since the introduction of King I in 1994 (Malola and Maroun, 2019). When the <IR> Framework was published in 2013, South African listed companies were already required to present integrated reports on a "apply or explain" basis (from 2010) in line with King III under the JSE listing requirements (JSE, 2019). Since South African listed companies have experience in preparing integrated reports before the IIRC's <IR> Framework, they were probably in a position to produce more comprehensive integrated reports and incorporate a high level of detail in their strategy, risk and performance sections from 2013 to date.

This has led to the following question:

RQ 2.1: Does the level of detail in the strategy, risk and performance sections of the integrated reports differ from 2013 to 2020 among top JSE-listed entities?

Conceptually, organisations in environmentally and socially sensitive (controversial) industries will have more information to report to stakeholders (de Villiers et al., 2017). As these firms have a greater opportunity and incentive to report to their stakeholders and should be more accountable (Kilian and Hennigs, 2014; Stacchezzini et al., 2016; de Villiers et al., 2017; Herbert and Graham, 2021), it is likely that the section level of detail will be higher than less environmentally and socially sensitive firms. Controversial industries include mining and basic materials (Kilian and Hennigs, 2014; de Laan et al., 2017) and less controversial industries include the consumer goods and services industry, telecommunications, health care (excluding manufacturers of health/sex-related products) and financial services because of the nature of their products (Kilian and Hennigs, 2014). This suggests that information included in the strategy, risk and performance sections may be more detailed for more controversial industries.

Empirical evidence suggests that reporting quality on ethical, social, economic and environmental issues may vary widely by companies in the same industry, specifically in

relation to the comprehensiveness (which includes level of detail) of the information reported (Adams, 2002; Stacchezzini et al., 2016; Diouf and Boiral, 2017). Poor quality or incomplete reporting of bad news (Adams, 2004; Stacchezzini et al., 2016), may impact the level of detail in integrated report sections. This may imply that there is no or a weak correlation between level of detail in the strategy, risk and performance sections and industry.

This has led to the following question:

RQ 2.2: Is there an association between the level of detail in the strategy, risk and performance sections of the integrated reports and industry from 2013 to 2020 among JSE-listed entities?

Firm size and value can be measured using the total book value of assets, market capitalisation or total revenue (Ahmed and Courtis, 1999; de Laan et al., 2017). Firm size has persistently been found to be positively and significantly associated with the level of disclosure in corporate reports (e.g. Belkaoui and Karpik (1989), and Hahn and Kühnen (2013)). This may suggest that larger firms have better disclosure practices (Ahmed and Courtis, 1999). The reason for this association may be that larger firms having the financial means to employ skilled personnel in preparing corporate reports, being able to afford the higher cost attributable to voluntary disclosures and bearing the higher cost associated with sophisticated corporate reporting systems (Lang and Lundholm, 1993; Ahmed and Courtis, 1999; Depoers, 2000; Ho and Taylor, 2007).

Evidence from South Africa suggests that larger firms produce better integrated report quality potentially because of more resources being allocated to prepare it (de Laan et al., 2017). This may suggest that larger firm size is associated with a higher level of reporting detail (an element of integrated report quality (Marrone and Oliva, 2019)).

Market capitalisation represents an external view of companies' values from the perspective of the investing public and not internal company measures (de Laan et al., 2017). By using market capitalisation, firm value according to the financial markets can provide a more consistent basis in comparing firms than using internal measures such as revenue or book value of assets that are subject to different firms' accounting policies.

This has led to the following question:

RQ 2.3: Is there an association between the level of detail in the strategy, risk and performance sections of the integrated reports and market capitalisation from 2013 to 2020 among JSE-listed entities?

The King Code on Corporate Governance (King IV has been the official guideline since 2016, and King III was the principal guiding document from 2009 until the implementation of King IV) is the mandatory corporate governance guide which should be adopted by JSE-listed companies (JSE, 2019).

As listed entities were encouraged to report on ESG information under King III (IoDSA, 2009), they may have reported on the six capitals to a limited extent by 2013 when the first IIRC's <IR> Framework was published. Although compliance with the 2013 IIRC's <IR> Framework is optional and only recommended for JSE-listed entities (JSE, 2019), there is a possibility that JSE-listed companies have adopted the six capital approach early (before 2013) (KPMG, 2012a). Before 2013 (the start of the study), companies could have consciously addressed more capitals in their integrated reports. However, limited and potentially conflicting guidance on the implementation of integrated reports before the official publication of the 2013 IIRC's <IR> Framework is evident (Watson, 2012; Rensburg and Botha, 2014). This results in less consistent disclosures informed by the six capitals model of the IIRC's <IR> Framework in the sections evaluated in the initial years starting in 2013. King IV adopted the IIRC's six capital model in its framework (IIRC, 2013d; IoDSA, 2016). The six capitals may be addressed by JSE-listed companies' integrated reports more consciously from 2016 onwards after King IV code was published.

Empirical evidence suggests that reporting on sustainability information has increased globally (Solomon and Maroun, 2012; Carels et al., 2013; IRCSA, 2015; Melloni, 2015; Setia et al., 2015; Eccles and Serafeim, 2017; Haji and Anifowose, 2017; Herbert and Graham, 2019). Key findings from prior studies indicate that the disclosure of social and relationship capital is prevalent in integrated reports (Solomon and Maroun, 2012; Carels et al., 2013; Melloni, 2015; Setia et al., 2015; Eccles and Serafeim, 2017). Some studies state that manufactured capital may also have a high presence (CIMA, 2016). There is also evidence of an increase in intellectual and human capital disclosures (Haji and Anifowose, 2017). Although non-financial disclosures are increasing, they may not be disclosed as frequently as financial capital disclosures (Eccles and Krzus, 2010; Skouloudis et al., 2010; IRCSA, 2015).

The focus of empirical studies which examine the adoption of a multi-capital approach are mainly on pre-2013 annual/integrated reports. There is limited research which assesses post-2013 integrated reports. The latest integrated reports examined in prior studies on the multiple capital approach date back to the 2015 financial year-end (Herbert & Graham, 2019; IRCSA, 2015) which is prior to the publication of King IV. Capital disclosure may have changed from

2013 to 2020, given the development of integrated reporting guidelines and constantly changing business environment.

This has led to the following question:

RQ 3.1: Does the inclusion of each of the capitals in the strategy, risk and performance sections of the integrated reports differ from 2013 to 2020 among top JSE-listed entities?

Empirical evidence, internationally and in South Africa suggests that the type of industry is significant when reporting on social and environmental issues with reference to a business (Adams and McNicholas, 2007; Maubane et al., 2014). Empirical evidence suggests that firms which include more disclosure tend to be firms in more controversial industries such as mining and basic materials (Kilian and Hennigs, 2014; de Laan et al., 2017).

Firms in more controversial industries require increased legitimacy because of the nature of their operations (Kilian and Hennigs, 2014). They are inclined to report on their social responsibility and/or environmental information (Gamble et al., 1995; Deegan and Gordon, 1996; Frost and Wilmshurst, 2000; Gray et al., 2001; Freedman and Jaggi, 2005; Gao et al., 2005; Liu and Anbumozhi, 2009; Kilian and Hennigs, 2014; Stacchezzini et al., 2016; de Laan et al., 2017) because of increased pressure to report to stakeholders, government and society (Stacchezzini et al., 2016; Herbert and Graham, 2021). This implies that reporting on the social and relationship, human and natural capitals could be significantly positively associated with more socially and environmentally sensitive industries.

Empirical evidence purports that social and relationship, human and natural capital may be excluded or have limited disclosure, the more environmentally and socially sensitive the industry is, if any negative information related to these capitals are evident in the business (Stacchezzini et al., 2016).

This has led to the following question:

RQ 3.2: Is there an association between the inclusion of each capital in the strategy, risk and performance sections of the integrated reports and industry from 2013 to 2020 among JSE-listed entities?

Larger firm size is associated with more ESG information being reported (Ho and Taylor, 2007; de Villiers et al., 2017; Drempetic et al., 2020). Larger firms are under more public scrutiny

than are smaller firms because they have a larger number of stakeholders. To maintain legitimacy, larger firms are under greater pressure to disclose ESG information (Drempetic et al., 2020). The disclosure of the capitals, especially non-financial capitals, may be evident the higher the market capitalisation of the company.

This has led to the following question:

RQ 3.3: Is there an association between the inclusion of each capital in the strategy, risk and performance sections of the integrated reports and market capitalisation from 2013 to 2020 among JSE-listed entities?

The research questions are informed by prior literature.

Chapter 4: Methodology

This exploratory study is quantitative but it is inspired by interpretative philosophy.

4.1 Research approach and design

This paper follows a mixed-methods approach. Qualitative data were analysed and coded using quantitative methods. The integrated reports of the sampled companies which are publicly available were downloaded and analysed by the researcher. Information from other reports or websites were not considered for this study. The data collection and analysis process were done manually and with the aid of computer software (Microsoft Excel).

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[2] of the capital disclosure in the stated sections.
- Assess whether each capital is included in the stated sections.

A descriptive statistics package, IBM SPSS Statistics 27, was used to analyse further the level of detail and presence of the capitals when grouped by year, industry and market capitalisation.

4.2 Population and sampling

The population includes the top 100 companies listed on the JSE. Purposive sampling was used. The research findings may not be generalisable because of sampling and researcher biases. Thirty (30) JSE-listed companies were selected from the top 100 companies (by market capitalisation on 09 June 2021). Large listed companies were included in this research report as these firms are likely to have the relevant resources, technical expertise and experience to provide integrated reports of an acceptable quality (Malola and Maroun, 2019; IIRC, 2021). The integrated reports published for the companies' 2013 to 2020 financial years (8 years) will be analysed as this period coincides with the publication of the IIRC's <IR> Framework (2013) and the release of King-IV (2016). The number of integrated reports analysed in this study is 240 (8 years x 30 integrated reports).

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. Industries with similar

[2] The level of detail was coded using the numbers 0, 1, 2 and 3. Details are discussed in Table 5 under data collection and analysis.

business activities were grouped. Table 3 shows the number of sampled companies and integrated reports examined in this study in each industry.

With regards to the conglomerate, findings discussed in Chapter 5: Results and Summary of findings in Chapter 6: Conclusion may not be representative of all conglomerates in the population as only 1 company's integrated reports were examined.

Table 3: 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
Adapted from: FTSE-Russell (2021)		

Table 4 indicates the number of sampled companies included in each quarter of the top 100 JSE-listed companies grouped by market capitalisation on 09 June 2021. The market capitalisation is grouped by quartile. Quartile 1 represent the lower quarter of the top 100 companies on the JSE as at 09 June 2021. The companies' size increases by market capitalisation when moving from quartile 1 to 4.

Table 4: Number of sampled companies and integrated reports included in each market capitalisation quartile

Quartile	Number of companies	Number of integrated reports
Quartile 1	5	40
Quartile 2	7	56
Quartile 3	11	88
Quartile 4	7	56
Total	**30**	**240**

Table 13 in appendix 1 provides a breakdown of the sampled companies examined in this thesis, including their industry and market capitalisation quartile.

4.3 Data collection and analysis

4.3.1 Research Question 1

This part of the study used qualitative content analysis. The qualitative information (such as words, paragraphs, diagrams) and quantitative information (such as quantitative results) were not presented consistently across the integrated reports. Content analysis was, therefore, the most appropriate method (Guthrie et al., 2004; 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, first, 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 performed at the level of specific words, phrases or sentences. The use of specific themes was considered, and subthemes were documented.

The thesis focused on analysing specific sections and subsections of the integrated report. When analysing the integrated reports, the researcher tried to avoid performing key sentence or phrases searches and mainly relied on the report format and content in determining what the company considers as its strategy, risks, and key performance section of the report. Despite this, to ensure the disclosures were identified, a keyword search was performed.

Firstly, the analysis identified whether the report has 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 are included in a different section. Keyword search included the following: strategic objectives, strategy, strategic, risk, key performance, key performing, key, perform, KPI, KP, performance, results, features, highlights, salient and indicator, deliverable to identify the various sections used in this study. Only the specified sections or the equivalent were analysed. This was coded as follows:

- Where the strategy/risk/key performance was addressed in a section, a score of 1 was assigned to the company for the respective year of the study (2013 to 2020). If the respective information was not addressed in a section in the integrated report, the company was assigned a score of 0 for the year.
- If the company had a specific section dedicated to strategy, risk or key performance, the company was assigned a score of 1 for the respective year. If no

strategy/risk/performance section was present, the company was assigned a score of 0 for the year.

In identifying the strategy, risk or performance sections, the following section specific considerations were taken into account:

a. Strategy section

- The integrated report was first analysed to determine whether there are group or company strategy section(s). A score of 1 was given if a group or company strategy section was included.
- If this was not present, the divisional strategies included in the business unit/divisional/operational sections were used.
- Lastly, if there was no group, company or divisional strategy, the report was analysed to determine whether any other section included information on strategy in a different section. Where the strategy was included in the business unit/division/operational section or other section, a score of 0 was given as there was no specific section dedicated to company strategy.

b. Risk section

- The analysis firstly identified whether there was a section which related to material risks facing the company or group.
- Risk management sections were only used if they specifically addressed material risks of the company or group if no material risk section was present in the report.
- If the material risk section or risk management section was not present, the material issues section was used, only if it considered the company's material risks.
- If risks were found in the material risk or risk management section, a score 1 of was given when assessing that a specific section was dedicated to material risk.
- Where a different section such as the material issues section, strategy section or operations section was analysed, a score of 0 was given as these sections are not specifically dedicated to risk.

c. Key performance section

- The integrated report was first analysed to determine whether key performance indicators (KPIs) were included in the integrated report in a section. If group or company KPIs were included in the report, these were considered first.
- KPIs relevant to specific individual employees were ignored. If KPIs related to employees' remuneration (in general), the remuneration section was used. KPIs should represent performance measures that are based on a comprehensive strategy

which should allow firms to measure strategy continuously using indicators which truly reflect key areas of an organisation's performance (IIRC, 2013d; PwC, 2015).

- If the report did not include KPIs, the following steps were followed:
    - As performance should be linked to strategy (IIRC, 2013d; PwC, 2015), the group or company performance against strategy section was considered if there was no mention of KPIs in the integrated report.
    - If group or company KPIs were not present and there was no group performance against company strategy, divisional KPIs were used.
    - If there were no divisional KPIs, divisional performance against divisional strategy was used.
    - Lastly, if there were no KPIs in the report or performance against strategy section, salient features of the report were used, as this is likely to reflect the performance highlights (including key quantitative information included in the integrated report) (IIRC, 2013d).
- If the section did not refer to KPIs, key performance, key features in its heading or provide some sort of indication that the section discussed the key performance indicators of the company/group, a score of 0 was assigned when identifying whether a specific section was dedicated to key performance.

  A score of 0 was given when the section used to extract key performance information was the remuneration section, strategy section, operating divisions section, and salient features sections.

Next, the level of detail of the strategy, risk and performance sections for each year was coded using the schematic in Table 5. The scoring system was adapted from Marrone and Oliva (2019) who assessed the level of detail of specific content elements.

Table 5: Assessing the level of detail

Score	Description of what the score represents
0	No disclosure
1	Strategy/Risk/Performance mentioned[3] only
2	Strategy/Risk/Performance mentioned, and

[3] Mentioning the strategy, risk or performance refers to whether the company states what the strategic objectives, risk or performance indicators are.

Table 5: Assessing the level of detail	
Score	**Description of what the score represents**
	Results are included[4] or a description[5] is given
3	Strategy/Risk/Performance mentioned, and Results are included and A description is given
Adapted from: Marrone and Oliva (2019)	

The researcher 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. Table 14 in appendix 2 includes illustrations of disclosures with scores of 0 to 3.

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 and a score of 0 was assigned if the capital was not present. 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 year of the study.

Thematic content analysis was used to assess whether each of the six capitals is addressed in the strategy, risk and performance sections of the integrated reports. The disclosure themes in Table 6 were interpretatively developed from existing literature to determine the presence of each of the six capitals included in the disclosure checklist.

The thematic content analysis table was created using:

- The description of the capitals by the IIRC and prior literature (Dess and Picken, 2000; Stiglitz et al., 2009; IIRC, 2013a; IRCSA, 2015; Setia et al., 2015; Nilsson, 2016; Haji and Anifowose, 2017; Barnes, 2018) and

[4] Results refer to whether the company provides company specific context, information, and results for the strategy, risk and performance aspects discussed.

[5] Description of strategy, risk or performance refers to whether the different strategic objectives, risk and performance indicators are defined or described.

- A pilot study incorporating 44 integrated reports: the 2020 integrated reports of all the companies in the study and 2 of the sampled companies' 2013 to 2019 integrated reports.

Table 6: Thematic content analysis		
Capital	**Description**	**Theme disclosures**
Financial capital	Financial capital is broadly understood as the funds an organisation has available (IIRC, 2013a; IRCSA, 2015). Financial concepts include economic thinking (IIRC, 2013a), the firm's earnings, financial liabilities and equity (Nilsson, 2016).	• 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).	• 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 an organisation's competitive advantage (IIRC, 2013a; Nilsson, 2016). Processes, policies and procedures, organisational structure, intellectual property (Setia et al., 2015; Nilsson, 2016), corporate brands, brand recognition, brand development, corporate culture and management philosophy (Setia et al., 2015; Haji and Anifowose, 2017) form part of intellectual capital.	• Brand and reputation • Company governance and control • Business processes • Intellectual property and other intangibles • Research and development

Table 6: Thematic content analysis		
Capital	**Description**	**Theme disclosures**
Human capital	Human capital includes knowledge, skills, experience (Dess and Picken, 2000; IRCSA, 2015), competence and capabilities (Nilsson, 2016). It also links to other aspects of human capital, such as employee health and care (Stiglitz et al., 2009; IIRC, 2013a; IRCSA, 2015; Nilsson, 2016), human resource development, employee loyalty and motivation (Nilsson, 2016), employee succession, number of employees (Haji and Anifowose, 2017) and employee benefits (Setia et al., 2015).	• 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 an organisation (IIRC, 2013a). It includes supply chain relationships, community acceptance, customer loyalty, government relations, relationship with competitors and other stakeholders (IIRC, 2013a; Setia et al., 2015; Nilsson, 2016; Haji and Anifowose, 2017), and recruitment of disadvantaged groups (Haji and Anifowose, 2017).	• Customers • 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 which 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	• Project to help the environment • Climate change/natural disasters

Table 6: Thematic content analysis		
Capital	**Description**	**Theme disclosures**
	resources, water resources and energy (Setia et al., 2015; Nilsson, 2016).	• Sustainable supply chain/business processes

The researcher flagged specific examples of the disclosures from the different sections of the integrated reports illustrating how companies are operationalising integrated thinking informed by a multi-capital approach. Table 15 in appendix 3 illustrates how the presence of the six capitals was analysed by flagging specific examples.

4.3.2 Research Questions 2 and 3

To address research question 2 and research question 3, the data was grouped by year, industry and market capitalisation as illustrated in Table 7. The level of detail of each respective section, the presence of each of the capitals as well as the presence of all six capitals (total capital) in the respective sections are the dependent variables. Each were considered separately.

Table 7: Summary of grouping variables to be used in the statistical analysis		
Grouping variable	**Assessment**	**Research question**
Year	Level of detail scores and presence of capital scores were aggregated based on each year (2013 to 2020).	RQ2.1 and RQ3.1
Industry	Companies were grouped into industries based on the nature of their main business activities. The lower limit was 1 and the upper limit was 6. A nominal scale was used as an ordinal scale may skew the results. Environmental and social impact was not used to order the industries because different industries may have disclosure trends that are not identical across all six capitals in the different sections.	RQ2.2 and RQ3.2
Market capitalisation	Company size was measured by market capitalisation. Companies were grouped by quartile. The lower limit was 1 and the upper limit was 4.	RQ2.3 and RQ3.3

Non-parametric tests were used as the data were not expected to be 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 if 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 if there is a difference between the level of detail in the stated sections and the presence of the capitals in the stated sections when grouped by the independent variables, and to determine if there were any associations.

4.4 Validity and reliability of data

Data collection and analysis processes were iterative.

This thesis is likely to be one of the first to do an extensive analysis of integrated report sections. 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. Specific steps were followed when identifying the section to be evaluated in the integrated reports as highlighted in the data collection and analysis section for research question 1. Following these steps ensured consistency in identifying sections.

The level of detail analysis was adapted from a study which focused on <IR> content elements. This assisted in the effect of researcher bias when assessing the section level of detail. The definitions of the respective capitals were analysed using prior literature to determine which themes to use to identify each capital (Dess and Picken, 2000; Stiglitz et al., 2009; IIRC, 2013a; IRCSA, 2015; Setia et al., 2015; Nilsson, 2016; Haji and Anifowose, 2017; Barnes, 2018). In identifying themes using prior research, the researcher aimed to align the capital themes with prior literature. To ensure the accuracy and completeness of the coding process, a pilot study incorporating 44 integrated reports including the 2020 integrated reports of all the companies in the study and 2 of the sampled companies' 2013 to 2019 integrated reports was conducted. It 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. A list of items which indicated a specific theme was present was created (this is included in Table 16 in appendix 4). Where updates to the thematic themes or updates to the specific items under the themes were required, the data already captured were re-examined. This process was continued until no further disclosures were noted and no more changes to how

the disclosures were classified were required (Beattie et al., 2004; Krippendorff, 2018). 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 regards to items which can result in the study being inconsistent. These notes were analysed during data analyses to ensure consistency. The coding was re-analysed 7 days after the initial data capturing (adapted from Büchling and Maroun (2021)). Where there was uncertainty about how a disclosure should be classified, the literature and prior data captured were consulted to ensure appropriate coding and consistency (Beattie et al., 2004).

To improve validity there was clarity in the processes followed in the data collection, analysis and subsequent interpretation of the data. In addition, meticulous record keeping was followed when coding the data and analysing integrated reports.

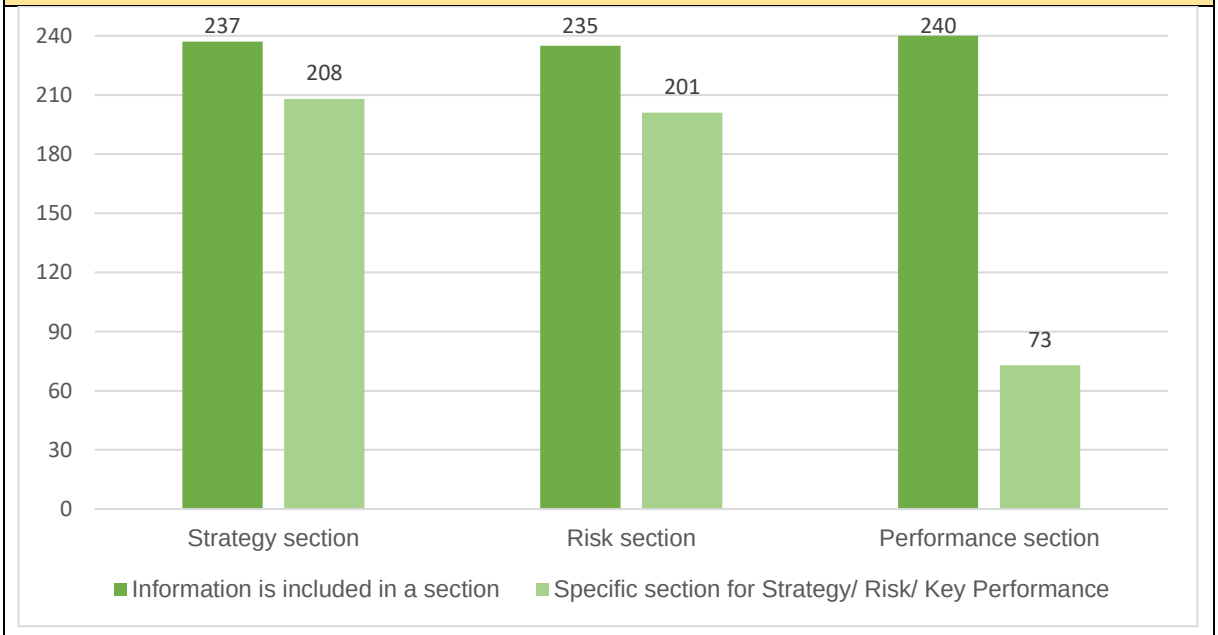
Chapter 5: Results

The results section addresses research questions 1, 2 and 3. The research questions require an assessment of the level of detail and presence of each of the six capitals in 3 different sections (strategy, risk and performance sections). The researcher flagged significant differences and highlighted interesting trends for each of the sections analysed.

5.1 Research question 1

The results below show the number of integrated reports which included strategy, risk and performance information in specific sections. It illustrates whether these sections explicitly mentioned that the section was dedicated to discussing the company's strategy, risk or performance (figure 2). Further, section level of detail is depicted in table 7 and presence of the capitals is shown table 8.

Figure 2: Graph illustrating the integrated report sections used to extract information on company strategy, risk and performance



Out of the 240 sampled integrated reports, 237 integrated reports included strategy information in a section and 235 integrated reports included risk factors in a section. 208 integrated reports had a specific section named the strategy section, and 201 companies had a section dedicated to discussing the business's risks. All the companies included performance-related information in specific integrated report sections but only 73 explicitly mentioned that the section related to the key performance of the company. From these results, it can be inferred that numerous different sections were used when determining a section that

included the company's key performance, and decisions in dedicating a specific section to discuss key performance indicators.

Table 8: Descriptive statistics: Section Level of detail

	Strategy section				Risk section				Performance section			
	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev
Level of detail	0	3	2,53	0,720	0	3	2,45	0,651	1	3	2,36	0,577

Min = Minimum; Max = Maximum; Std. Dev.= Standard deviation

The average level of detail of the strategy section is 2,53 which is relatively high when compared to the maximum level of detail of 3. This is followed by a slightly lower mean level of detail in the risk section of 2,45 which is also relatively high compared to the maximum level of detail of 3. The performance average level of detail (2,36) is the lowest of all the sections analysed but also relatively high compared to the maximum level of detail of 3.

The strategy and risk sections have a minimum level of detail score of 0 (no disclosure), in line with the results in figure 2 which indicates that not all the sampled integrated reports have a specific section which contains strategy or risk information, and possibly included strategy and risk information throughout the report. Figure 2's results indicate that performance information was included in a section in the integrated reports examined, resulting in an assessment of the level of detail having a minimum value of 1.

The descriptive statistics in Figure 3 give a high-level overview of the presence of the six capitals in the strategy, risk and performance sections of the integrated reports analysed in the study. The descriptive statistics of the capital disclosures were sorted from smallest (left) to largest (right) for each section. The standard deviation values are included as bars on the mean on Figure 3 and the standard deviation values are specified in table 9 below.

Figure 3: Descriptive statistics: Six capital disclosures

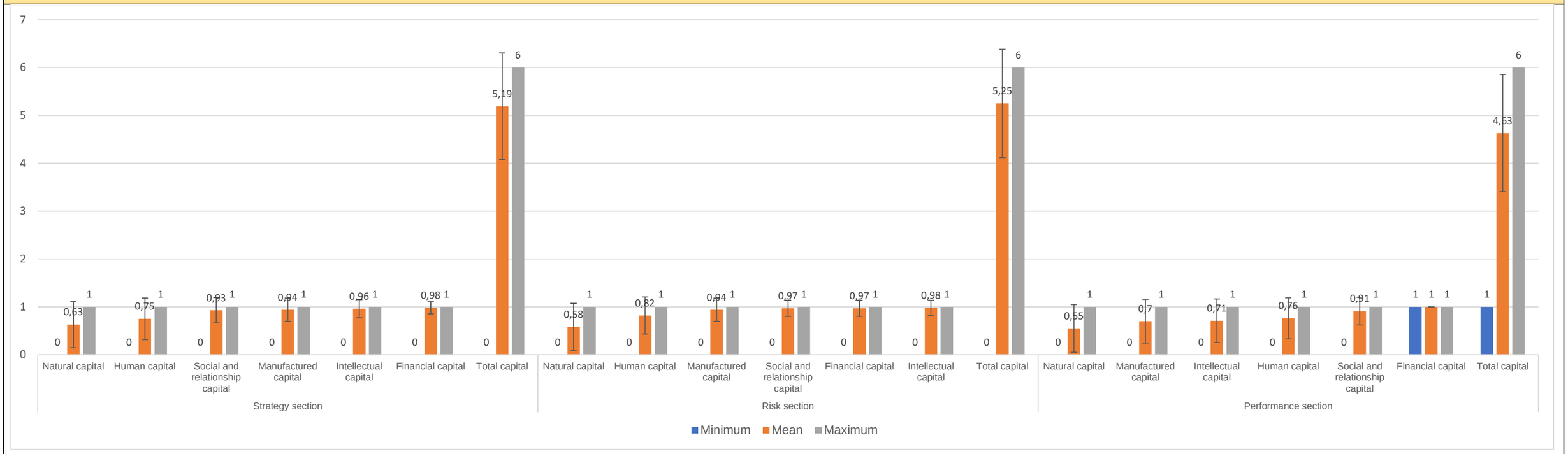


Table 9: Standard deviation values included on the means of each capital in Figure 3

	Strategy section							Risk section							Performance section						
Capital	Natural capital	Human capital	Social and relationship capital	Manufactured capital	Intellectual capital	Financial capital	Total capital	Natural capital	Human capital	Manufactured capital	Social and relation-ship capital	Financial capital	Intellectual capital	Total capital	Natural capital	Human capital	Manufactured capital	Social and relation-ship capital	Financial capital	Intellectual capital	Total capital
Standard deviation	0,484	0,434	0,264	0,243	0,19	0,128	1,114	0,495	0,388	0,243	0,169	0,169	0,156	1,13	0,498	0,429	0,457	0,289	0	0,455	1,223

Overall disclosure of the six capitals on average is 5,19 in the strategy section (highest average), 5,25 in the risk section and 4,63 in the performance section (lowest average). This means, on average, out of the 6 capitals, 5 capitals were addressed in the risk and strategy sections, and an average of between 4 and 5 capitals were included in the performance section. This suggests that companies are, to some extent, implementing a multi-capital approach.

The capital which was observed most in the strategy and performance sections is financial capital. In the risk section, financial capital has the second-highest average score (0,97) tied with social and relationship capital. This was only 1% lower than intellectual capital (0,98).

A key observation from Figure 3 is that financial capital in the performance section has 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, indicating that the capitals are not present in the performance section. 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 being observed less (IRCSA, 2015). The least observed capital in all the sections was natural capital. 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.

5.2 Research questions 2 and 3

5.2.1 Non-parametric tests

This subsection includes the results of the non-parametric tests and correlations performed between level of detail, the capitals, and the grouping variables: year, industry and market capitalisation. This will be discussed in detail under the subsections dedicated to addressing RQ 2 and RQ 3.

Table 10 presents the results of the non-parametric tests performed for the section level of detail. A Kruskal-Wallis H test and a Jonckheere-Terpstra test were used to test if there were significant differences in the level of detail in the strategy, risk and performance sections when researching year 2013 to 2020, industry (grouped by nature of the companies' business) and market capitalisation (grouped into quartiles) as grouping variables.

Table 10: 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**	1,664	0,389
Risk section level of detail	36,57**	6,02**	21,92**	-1,097	13,31**	-1,512
Performance section level of detail	6,890	2,16*	12,82*	1,511	20,19**	-2,86**
H = Kruskal-Wallis H Test; J-T = Std. Jonckheere-Terpstra Test Statistic						
*Significant at the 5% level						
**Significant at the 1% level						

Table 11 presents the results of the non-parametric tests performed for the disclosure of the six capitals. A Kruskal-Wallis H test and a Jonckheere-Terpstra test was used to test if there were significant differences in the presence of each capital in the strategy, risk and performance sections when using year (2013 to 2020), industry (grouped by nature of the companies' business) and market capitalisation (grouped into quartiles) as grouping variables.

Table 11: 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	4,050	1,757	27,78**	-0,88	3,25	-0,06
	Manufactured capital	15,23*	3,66**	17,96**	-2,16*	7,10	-2,64**
	Intellectual capital	6,323	2,29*	14,57*	0,16	4,08	-2,02*
	Human capital	4,250	0,97	29,91**	-4,55**	3,76	-1,83

Table 11: 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
	Social and relationship capital	5,500	1,71	42,86**	1,43	5,01	0,44
	Natural capital	6,950	1,426	15,74**	-3,04**	8,91*	-2,90**
	Total for the 6 capitals	8,890	2,18*	18,20**	-3,70**	9,06*	-3,02**
Risk section	Financial capital	5,710	1,750	3,45	-0,95	9,80*	-2,19*
	Manufactured capital	6,160	2,15*	10,83	-3,11**	22,78**	-3,79**
	Intellectual capital	4,770	1,440	3,900	-0,55	12,57**	-2,98**
	Human capital	9,310	2,69**	31,97**	-2,47*	26,42**	-3,84**
	Social and relationship capital	3,370	0,920	5,410	-0,42	15,83**	-3,29**
	Natural capital	7,060	2,31*	31,14**	-3,15**	7,07	-2,17*
	Total for the 6 capitals	11,680	3,22**	41,73**	-3,86**	19,41**	-3,86**
Perfor-mance section	Financial capital	0,00	0,00	0,00	0,00	0,00	0,000
	Manufactured capital	3,330	1,570	67,51**	1,46	1,49	0,96
	Intellectual capital	9,56	2,91**	12,97*	1,57	12,84**	2,18*
	Human capital	4,980	0,660	25,54**	-4,48**	0,46	-0,07
	Social and relationship capital	5,380	1,750	36,44**	2,74**	9,27*	-0,91
	Natural capital	7,780	1,160	65,05**	-6,78**	11,42**	-0,94

Table 11: 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**
	Total for the 6 capitals	11,630	2,69**	44,82**	-2,65**	5,77	0,85
H= **Kruskal-Wallis H Test; J-T = Std. Jonckheere-Terpstra Test Statistic** *Significant at the 5% level **Significant at the 1% level							

Table 12 (below) contains the correlation matrix for all the variables included in the study. A Spearman's rho and Kendall's tau-b correlation were used to determine the correlation between the variables.

Table 12: Correlation coefficient matrix

		Grouping variable			Strategy section								Risk section								Performance section							
		Year	Industry	Market Capital-sation	Level of detail	Financial capital	Manufac-tured capital	Intellec-tual capital	Human capital	Social and relationship capital	Natural capital	Total capital	Level of detail	Financial capital	Manufac-tured capital	Intellec-tual capital	Human capital	Social and relationship capital	Natural capital	Total capital	Level of detail	Financial capital	Manufac-tured capital	Intellec-tual capital	Human capital	Social and relationship capital	Natural capital	Total capital
Grouping variable	Year	1,000	0,000	0,000	0,260**	0,114	0,237**	0,148*	0,063	0,110	0,092	0,138*	0,387**	0,113	0,139*	0,093	0,174**	0,059	0,149*	0,208**	0,142*		0,102	0,188**	0,042	0,113	0,075	0,168**
	Industry	0,000	1,000	-0,106	-0,253**	-0,057	-0,139*	0,011	-0,294**	0,093	-0,197**	-0,244**	-0,072	-0,061	-0,201**	-0,036	-0,160*	-0,027	-0,204**	-0,248**	0,101		0,094	0,101	-0,290**	0,177**	-0,439**	-0,169**
	Market Capitalisation	0,000	-0,088	1,000	0,022	-0,004	-0,171**	-0,131*	-0,118	0,029	-0,187**	-0,194**	-0,094	-0,142*	-0,245**	-0,193**	-0,248**	-0,213**	-0,141*	-0,247**	-0,185**		0,062	0,141*	-0,005	-0,059	-0,061	0,053
Strategy section	Level of detail	0,217**	-0,217**	0,022	1,000	0,234**	0,430**	0,341**	0,511**	0,259**	0,358**	0,575**	0,212**	0,171**	0,276**	0,203**	0,045	0,216**	0,136*	0,132*	0,079		0,214**	0,375**	0,228**	0,156*	0,139*	0,359**
	Financial capital	0,098	-0,052	-0,004	0,226**	1,000	0,504**	0,488**	0,225**	0,334**	0,170**	0,242**	0,059	-0,023	-0,034	-0,021	0,107	-0,023	-0,045	0,013	0,128*		-0,013	-0,012	0,003	-0,041	0,014	0,001
	Manufactured capital	0,205**	-0,127*	-0,157**	0,415**	0,504**	1,000	0,674**	0,209**	0,319**	0,336**	0,454**	0,162*	0,467**	0,573**	0,510**	0,323**	0,467**	0,163*	0,282**	0,137*		0,097	0,099	0,055	0,157*	0,184**	0,147*
	Intellectual capital	0,128*	0,010	-0,120*	0,329**	0,488**	0,674**	1,000	0,038	0,277**	0,257**	0,342**	0,228**	0,487**	0,402**	0,530**	0,190**	0,487**	0,054	0,152*	0,138*		-0,032	0,066	-0,060	0,013	0,088	0,037
	Human capital	0,055	-0,269**	-0,108	0,493**	0,225**	0,209**	0,038	1,000	0,274**	0,254**	0,685**	0,189**	-0,043	0,089	-0,031	0,075	0,014	0,054	0,087	-0,033		0,153*	0,222**	0,326**	0,117	0,082	0,256**
	Social and relationship capital	0,096	0,085	0,026	0,250**	0,334**	0,319**	0,277**	0,274**	1,000	0,142*	0,424**	0,205**	0,139*	0,057	0,157*	-0,012	0,139*	-0,083	-0,072	-0,004		0,162*	0,165*	-0,050	0,348**	-0,064	0,140*
	Natural capital	0,080	-0,180**	-0,172**	0,345**	0,170**	0,336**	0,257**	0,254**	0,142*	1,000	0,807**	0,125	0,123	0,194**	0,153*	0,082	0,175**	0,167**	0,150*	0,058		-0,139*	-0,018	0,050	0,085	0,353**	0,106
	Total capital	0,114*	-0,205**	-0,168**	0,530**	0,227**	0,426**	0,321**	0,642**	0,397**	0,757**	1,000	0,241**	0,206**	0,288**	0,246**	0,129*	0,262**	0,129*	0,156*	0,059		0,056	0,163**	0,203**	0,209**	0,253**	0,262**
Risk section	Level of detail	0,331**	-0,064	-0,088	0,201**	0,058	0,159*	0,224**	0,186**	0,202**	0,123	0,224**	1,000	0,331**	0,179**	0,307**	0,166**	0,308**	0,144*	0,216**	0,108		0,004	0,116	-0,002	-0,019	-0,102	-0,006
	Financial capital	0,098	-0,056	-0,130*	0,165**	-0,023	0,467**	0,487**	-0,043	0,139*	0,123	0,193**	0,325**	1,000	0,569**	0,924**	0,302**	0,853**	0,203**	0,315**	0,030		-0,058	-0,002	-0,040	0,031	0,143*	0,029
	Manufactured capital	0,120*	-0,183**	-0,225**	0,266**	-0,034	0,573**	0,402**	0,089	0,057	0,194**	0,270**	0,176**	0,569**	1,000	0,620**	0,500**	0,569**	0,268**	0,458**	0,074		0,059	0,024	0,136*	0,157*	0,219**	0,145*
	Intellectual capital	0,081	-0,032	-0,177**	0,196**	-0,021	0,510**	0,530**	-0,031	0,157*	0,153*	0,231**	0,302**	0,924**	0,620**	1,000	0,338**	0,924**	0,188**	0,299**	0,063		-0,045	0,015	-0,028	0,042	0,125	0,036
	Human capital	0,151**	-0,146*	-0,227**	0,043	0,107	0,323**	0,190**	0,075	-0,012	0,082	0,121*	0,163*	0,302**	0,500**	0,338**	1,000	0,302**	0,229**	0,647**	0,072		-0,118	-0,091	0,160*	-0,001	0,247**	0,058
	Social and relationship capital	0,051	-0,025	-0,196**	0,208**	-0,023	0,467**	0,487**	0,014	0,139*	0,175**	0,246**	0,303**	0,853**	0,569**	0,924**	0,302**	1,000	0,153*	0,295**	0,030		-0,058	-0,002	-0,040	0,031	0,094	0,005
	Natural capital	0,129*	-0,186**	-0,129*	0,131*	-0,045	0,163*	0,054	0,054	-0,083	0,167**	0,121*	0,142*	0,203**	0,268**	0,188**	0,229**	0,153*	1,000	0,863**	-0,031		-0,183**	-0,046	0,110	-0,037	0,220**	0,011
	Total capital	0,172**	-0,217**	-0,218**	0,121*	0,013	0,268**	0,145*	0,083	-0,069	0,143*	0,139*	0,206**	0,300**	0,436**	0,284**	0,616**	0,281**	0,821**	1,000	-0,020		-0,198**	-0,089	0,133*	-0,041	0,271**	0,017
Perfor-mance section	Level of detail	0,118*	0,087	-0,166**	0,075	0,128*	0,137*	0,138*	-0,033	-0,004	0,058	0,059	0,108	0,030	0,074	0,063	0,072	0,030	-0,031	-0,020	1,000		0,157*	0,093	0,071	0,010	0,048	0,157**
	Financial capital[6]																											
	Manufactured capital	0,088	0,086	0,057	0,206**	-0,013	0,097	-0,032	0,153*	0,162*	-0,139*	0,056	0,004	-0,058	0,059	-0,045	-0,118	-0,058	-0,183**	-0,198**	0,157*		1,000	0,488**	0,146*	0,269**	-0,104	0,567**
	Intellectual capital	0,163**	0,093	0,130*	0,361**	-0,012	0,099	0,066	0,222**	0,165*	-0,018	0,163**	0,116	-0,002	0,024	0,015	-0,091	-0,002	-0,046	-0,089	0,093		0,488**	1,000	0,152*	0,304**	-0,059	0,576**
	Human capital	0,037	-0,264**	-0,004	0,220**	0,003	0,055	-0,060	0,326**	-0,050	0,050	0,203**	-0,002	-0,040	0,136*	-0,028	0,160*	-0,040	0,110	0,133*	0,071		0,146*	0,152*	1,000	0,158*	0,238**	0,517**
	Social and relationship capital	0,098	0,162**	-0,054	0,150*	-0,041	0,157*	0,013	0,117	0,348**	0,085	0,209**	-0,019	0,031	0,157*	0,042	-0,001	0,031	-0,037	-0,041	0,010		0,269**	0,304**	0,158*	1,000	0,093	0,403**
	Natural capital	0,065	-0,400**	-0,056	0,134*	0,014	0,184**	0,088	0,082	-0,064	0,353**	0,253**	-0,102	0,143*	0,219**	0,125	0,247**	0,094	0,220**	0,271**	0,048		-0,104	-0,059	0,238**	0,093	1,000	0,443**
	Total capital	0,137**	-0,142**	0,046	0,316**	0,001	0,147*	0,037	0,256**	0,140*	0,106	0,262**	-0,006	0,029	0,145*	0,036	0,058	0,005	0,011	0,017	0,157**		0,567**	0,576**	0,517**	0,403**	0,443**	1,000

Spearman's rho correlations are reported above the diagonal. Kendall's tau-b correlations are reported below the diagonal

*Correlation is significant at the 0,05 level (2-tailed)

**Correlation is significant at the 0,01 level (2-tailed)

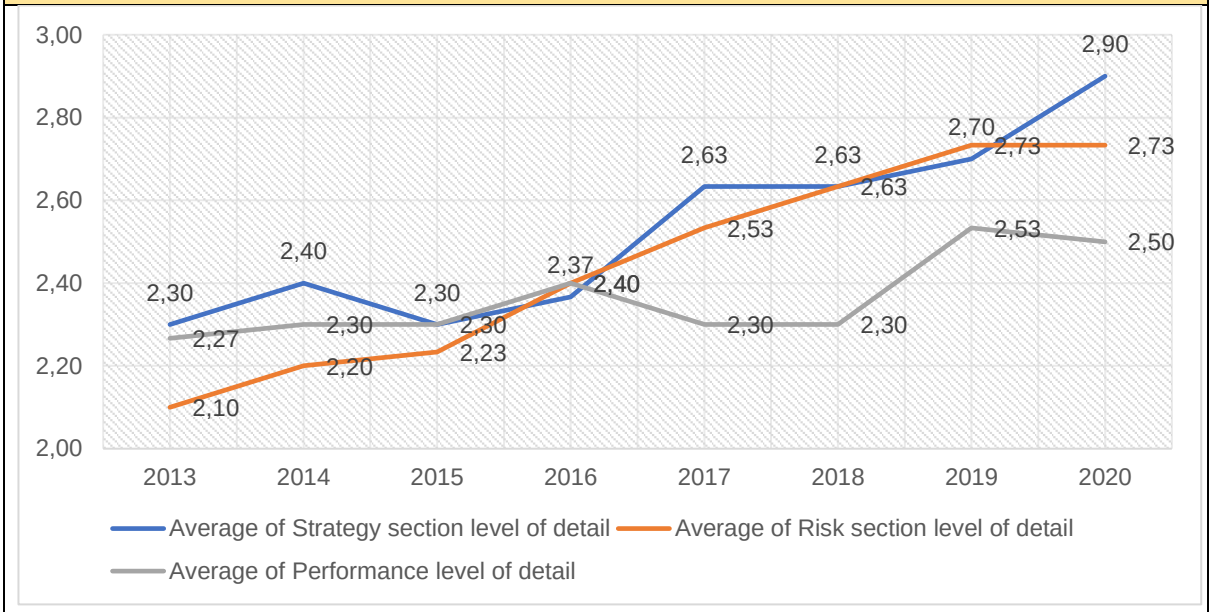
[6] Financial capital in the performance section is addressed in all the integrated reports sampled. It therefore has no correlation with the grouping variables, level of detail or any of the capitals in the different sections, and therefore is blank.

5.2.2 Research question 2 discussion

This subsection illustrates and discusses how the strategy, risk and performance section level detail differs when grouped by year, industry and market capitalisation.

Figure 4 indicates the average level of detail in all the sections from 2013 to 2020.

Figure 4: Graph showing the average level of detail of the Strategy, Risk and Performance sections for all the companies from 2013 to 2020



The companies mentioned the strategy, risk or key performance indicator, provided results or descriptions of these elements in the respective sections. The level of detail starting point of just above 2 for all sections in 2013 may be indicative of the long history of integrated reporting practices in South Africa where companies were already in the process of improving their integrated reports. This has increased to close at the maximum of 3 in 2020 for the strategy section (2,9), followed by the risk section (2,73), and lastly the performance section (2,5). This may be evidence of the increased refining of South Africa's integrated reporting practices until 2020, improving reporting quality. All sections show an increase from 2015 to 2016 when King IV was published. The strategy section level of detail shows a steep increase post-implementation from 2016 to 2017 whereas key performance, interestingly, shows a decrease in the level of detail from 2016 to 2017.

The average level of detail in the strategy section is 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. Table 10 indicates that there is a statistically significant difference at the 1% level between the level of detail in the strategy section and the year (H=19,07; p<0,01). The Jonckheere-Terpstra test indicates that the strategy section level of detail increased at a 1% statistically significant level as the years progressed from 2013 to 2020 (J-T=19,07; p<0,01). There is a very weak positive correlation between year and level of detail in the strategy section, significant at the 1% level (Spearman's rho: r=0,260, p<0,01; Kendall's tau-b: r=0,217; p<0,01), indicated in table 12.

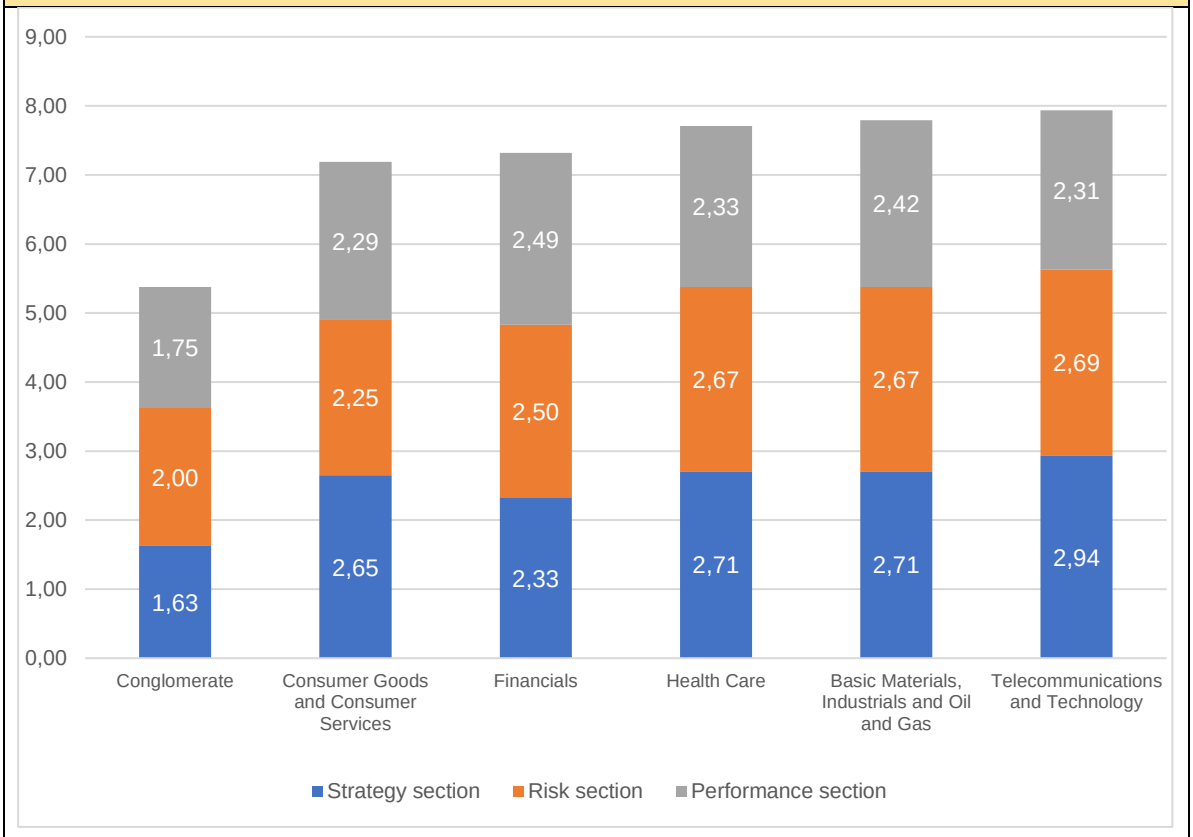
The risk section shows the steepest increase of all the sections for the period analysed, increasing from 2,10 in 2013 to 2,73 in 2019 and 2020 (figure 4). There is a statistically significant difference at the 1% level between the level of detail and the risk section (H=36,57; p<0,01). There is a weak positive correlation between the level of detail in the risk section and year which is significant the more detailed the section is (r=0,387, p<0,01 Spearman's rho; 0,331; p<0,01 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. This is statistically significant at the 1% level (J-T=6,07; p<0,01).

The performance section level of detail is fairly 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 difference to year, the performance section level of detail is very weakly positively correlated with the year at the 5% significance level (Spearman's rho: r=0,142, p<0,05; 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 (J-T=2,16; p<0,05).

The significant positive, albeit weak, association in all the stated 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 (Malola and Maroun, 2019).

Figure 5 illustrates the average level of detail of the strategy, risk and performance sections in each industry. The industries have been sorted from lowest to highest level of detail (based on an aggregate level of detail of all 3 sections), to better analyse the results.

Figure 5: Graph showing the average level of detail of the Strategy, Risk and Performance sections for all the companies by industry classification



The industries' strategy section level of detail (excluding the conglomerate) ranges between 2,33 and 2,94. The risk section level of detail (excluding the conglomerate) is from 2,25 to 2,69. The performance level of detail range (excluding the conglomerate) is between 2,29 and 2,49. This means the companies in the industries specified (excluding the conglomerate) have an average level of detail between a level 2 (mentioning, as well as describing the strategy/risk/performance, or mentioning it and including results) and level 3 (mentioning the strategy/risk/performance, explaining it and providing results related to it).

The industry with the lowest level of detail for all the stated sections is the conglomerate with an average level of detail of 1,63 for the strategy section and 1,75 for the performance section. This means that the conglomerate in the sample has an average level of detail between a

level 1 (only mentioning the specific strategy or key performance) and level 2. The average for the risk section is 2,00.

The telecommunications and technology industry classification has 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 the expectation as it does not have controversial products (Kilian and Hennigs, 2014) but may be because of the unique telecommunications setting in South Africa. In South Africa, consumers have a negative sentiment towards telecommunication firms compared with banks, insurers and retailers (BrandsEye and Deloitte, 2021). The financial industry has the highest level of detail in the performance section (2,49). These findings are not as expected as their products are not seen as controversial (Kilian and Hennigs, 2014).

Companies in the basic materials, industrials, and oil and gas industry include a great level of detail in all the stated sections when aggregating the level of detail in all the sections. This is as expected, given the high environmental and social impact of the industry (Kilian and Hennigs, 2014). The health care industry also reflects high level of detail in all sections when aggregated. This is probably because of the nature of the industry continuously looking to legitimise its practices to gain trust in them (Haji and Anifowose, 2017). The lower level of detail in the less socially 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 and Hennigs, 2014).

From table 10, industry and level of detail in the strategy section and risk section is statistically significant at the 1% significance level (strategy section: $H=24,74$; $p<0,01$, risk section: $H=21,92$; $p<0,01$). Level of detail in the performance section has a statistically significant relationship to the industry at the 5% level ($H=12,82$; $p<0,05$). This means the level of detail is statistically significant in all sections.

Results from table 12 indicate that the strategy section has a very weak negative correlation with industry which is significant at the 1% level (Spearman's rho=-0,217; 0,01; Kendal's tau-b=-0,253; 0,01). The Jonckheere-Terpstra test shows that level of detail in the strategy section decreases, as industry changes (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.

This mixed result from the different sections shows that, although there is a significant correlation between the stated sections and industry, the correlation can be positive or negative. The weak correlation between industry and level of detail in all the sections in the

study demonstrates similar findings to previous studies which state that the level of detail of information reported may vary widely by companies in the same industry (Adams, 2002; Stacchezzini et al., 2016; Diouf and Boiral, 2017) resulting in weak associations.

Figure 6 illustrates the level of detail for each section in relation to firm size, when moving from smaller firms in quartile 1 to larger firms in quartile 4.

Figure 6: Graph showing the average level of detail of the Strategy, Risk and Performance sections for all the companies by market capitalisation

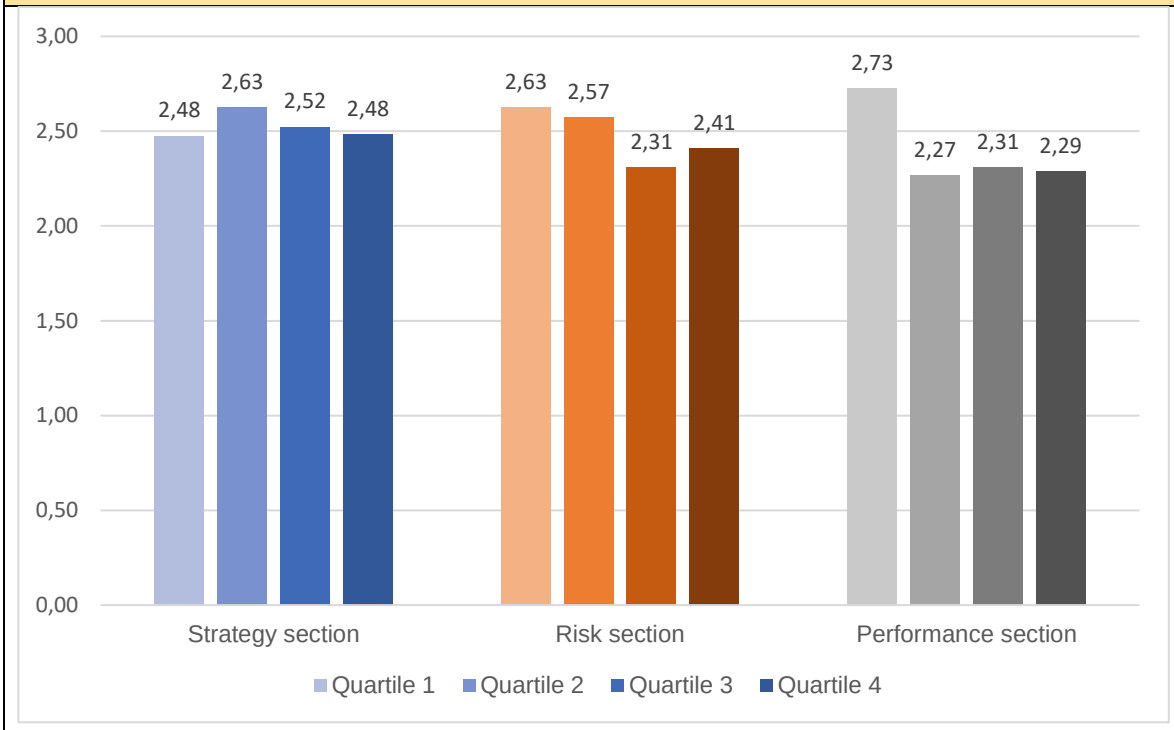


Table 10 shows that level of detail and market capitalisation have a statistically significant relationship at the 1% level in the risk and performance sections (risk section: H=13,31; p<0,01, performance section: H=20,19; p<0,01).

Figure 6 shows that the risk section level of detail shows a negative trend from quartile 1 (2,63) to quartile 3 (2,31) and increases 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 in table 12 which is very weak and negative. According to the Jonckheere-Terpstra test in table 10, the higher the market capitalisation, the lower level of detail in the risk section.

As illustrated in figure 6, quarter 1 has the highest performance section level of detail of 2,73. Quartiles 2, 3 and 4 have a similar average level of detail in the performance section of 2,27, 2,31 and 2,29, respectively. The Jonckheere-Terpstra test in table 10 shows that the higher

the market capitalisation, the lower the level of detail, significant at the 1% level (J-T= -2,86; p<0,01). Table 11 shows the correlation between market capitalisation and level of detail in the performance section. This is a very weak negative association according to Spearman's rho (-0,166) and Kendall's tau-b (-0,185), which are significant at the 1% level.

The negative correlation and descriptive statistics for the risk and performance sections are not as expected, seeing 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 (Lang and Lundholm, 1993; Ahmed and Courtis, 1999; Depoers, 2000; Ho and Taylor, 2007; de Laan et al., 2017).

There is no statistically significant difference between market capitalisation and level of detail in the strategy section (Kruskal-Wallis H test in table 10). This section's level of detail has a positive association with market capitalisation, albeit very weak, as indicated in table 12. The trend from quartile 1 to quartile 4 for the strategy section shows the positive association is because of the sharp increase from quartile 1 to quartile 2 from 2,48 to 2,63 and then decreasing to 2,52 and 2,48 in quartile 3 and 4 (illustrated in figure 5).

5.2.3 Research question 3 discussion

Analysis of the associations between the grouping variables (year, industry and market capitalisation) and the presence of each of the six capitals in the strategy, risk and performance sections are included in this subsection.

Figures 7, 8 and 9, are line graphs that include the percentage of the sampled integrated reports that addressed each of the six capitals in the stated sections from 2013 to 2020, and a graph showing whether all six capitals (total capital)[7] are addressed in the sections for the period studied.

Figure 7: Graph showing the percentage of companies that included each of the six capitals in the Strategy section from 2013 to 2020

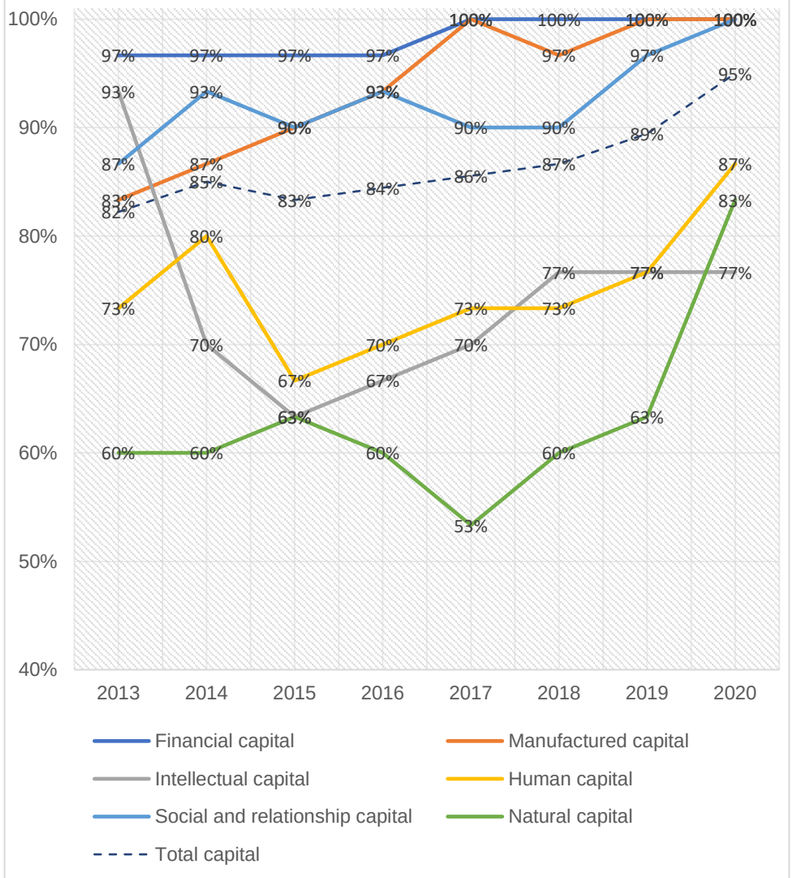


Figure 8: Graph showing the percentage of companies that included each of the six capitals in the Risk section from 2013 to 2020

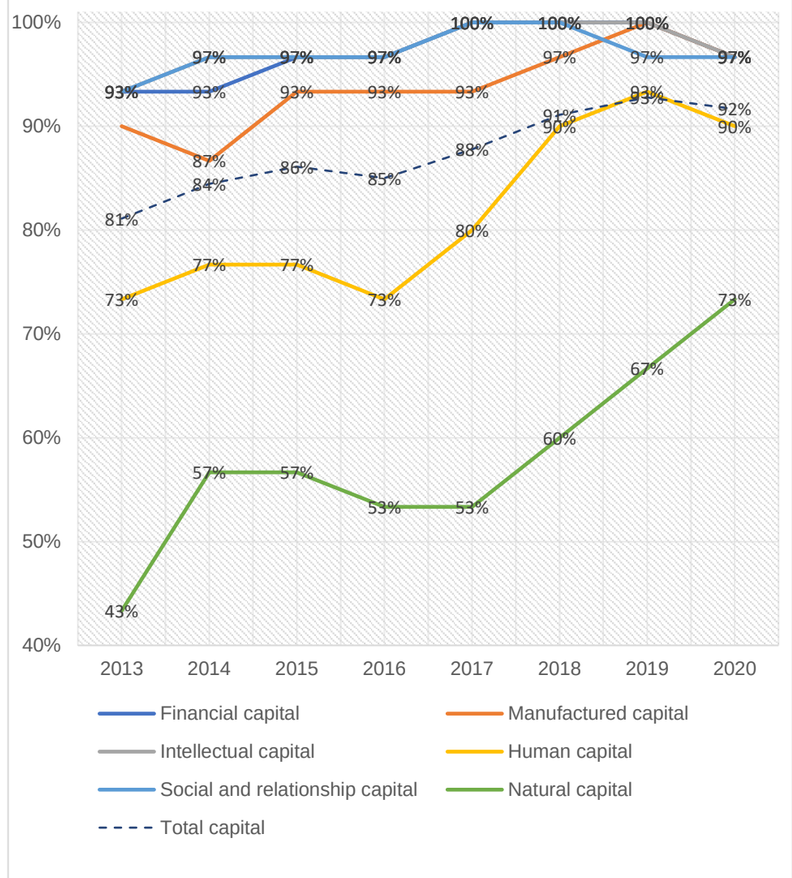
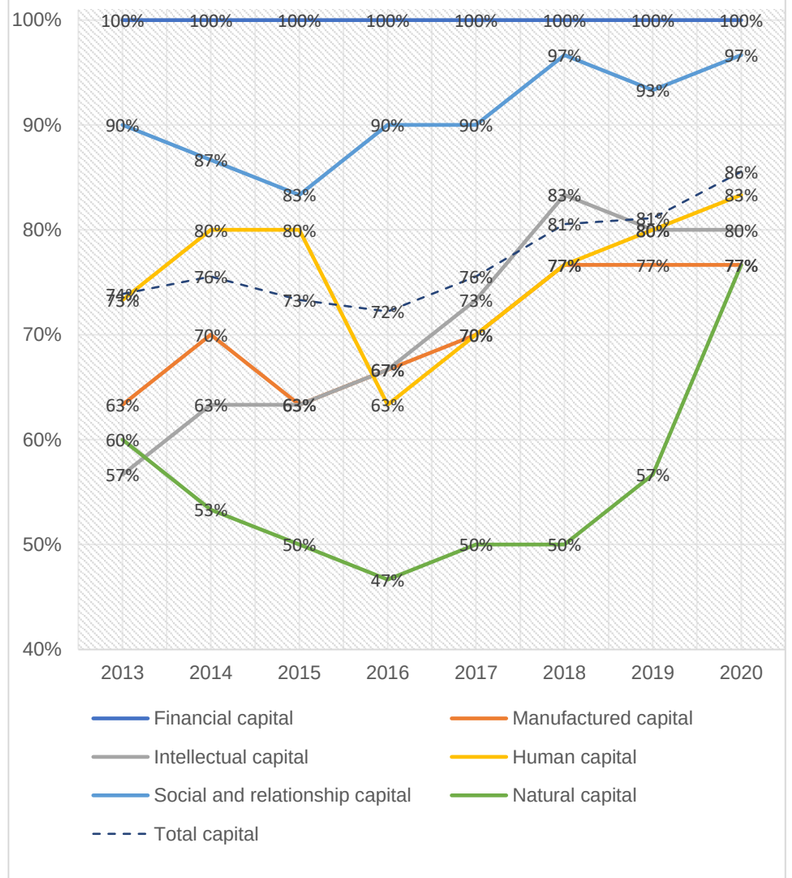


Figure 9: Graph showing the percentage of companies that included each of the six capitals in the Performance section from 2013 to 2020



[7] Total capital represents the sum of all capitals included in the integrated reports of the companies in that specific year divided by the total number of sampled integrated reports in that year (180=6 capitals x 30 integrated reports per year).

Financial capital and social and relationship capital are of the capitals which have 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 are other capitals (Eccles and Krzus, 2010; Skouloudis et al., 2010; IRCSA, 2015). Social and relationship capital being important in the strategy section is in line with expectations from prior studies which indicate that a higher number of social and relationship capital disclosures are being included in integrated reports of JSE-listed companies (Solomon and Maroun, 2012; Carels et al., 2013; Melloni, 2015; Setia et al., 2015; Eccles and Serafeim, 2017). 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 performance section in 2013. Manufactured capital also has the highest presence of non-financial capital in the strategy and risk section from 2015 to 2020. This finding is in line with prior research which states that firms tend to report on manufactured capital (Setia et al., 2015; CIMA, 2016).

Figure 7 shows that there is an increase in the total number of capitals in the strategy section of all the integrated reports in the sample. In 2013, the total capitals score was 82%, which is relatively high. This increased slightly to 85% in 2014 after the publication of the IIRC's <IR> Framework in 2013 and then decreased to 83% in 2015. From 2015 until 2019, there has been a gradual increase in the disclosure of the capitals. 2020 showed a steeper increase, from 89% in 2019 to 95% in 2020. The increase in 2020 is possibly 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 (Atkins et al., 2020b; IIRC, 2020).

Interestingly, the Kruskal-Wallis H test in table 11 shows that the only significant difference exists between manufactured capital disclosed in the strategy section and year ($H=15,23$; $p<0,05$). As the years' progress, the Jonckheere-Terpstra test (table 11) indicates that there is a significant increase in the presence of manufactured capital at the 1% level ($J\text{-}T=3,66$; $p<0,01$). There is also a significant positive correlation between manufactured capital in the strategy section and year (Spearman's rho: $r=0,237$, $p<0,01$; Kendall's tau-b: 0,205; $p<0,01$).

There is a significant increase (at the 5% level) in the presence of intellectual ($J\text{-}T=2,29$; $p<0,05$) and total capital ($J\text{-}T=2,18$; $p<0,05$) as the years progress. The correlation between the mentioned capitals is also positive and significant at the 5% level (intellectual capital (Spearman's rho: $r=0,148$, $p<0,05$; Kendall's tau-b: 0,128; $p<0,05$)) and total capital (Spearman's rho: $r=0,138$, $p<0,05$; Kendall's tau-b: $r=0,114$; $p<0,05$)).

Figure 8 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. Where there is a one-year lag in the increase in capital presence there may have been a lag in the adoption of IIRC's <IR> Framework and/or King IV by firms.

All the same, there is no statistically significant difference between the year and the presence of the capitals (Kruskal-Wallis H test (table 11)). Whereas, the Jonckheere-Terpstra test (table 11) shows that, as the year increases, there are statistically significant increases in human capital (J-T=2,69; p<0,01) and total capital (J-T=3,22; p<0,01) (at the 1% level), and manufactured capital (J-T=2,15; p<0,05) and natural capital (J-T=2,31; p<0,05) (at the 5% level) (table 11). The correlation coefficient table (table 12) shows a very weak positive association between the capitals and year. The correlation between the mentioned capitals is also positive and significant at the 1% and 5% level (human capital (Spearman's rho: r=0,174, p<0,01; Kendall's tau-b: 0,151; p<0,01), total capital (Spearman's rho: r=0,208, p<0,05; Kendall's tau-b: r=0,172; p<0,01), manufactured capital (Spearman's rho: r=0,139, p<0,05; Kendall's tau-b: 0,120; p<0,05) and natural capital (Spearman's rho: r=0,149, p<0,05; Kendall's tau-b: r=0,129; p<0,05)).

Figure 9 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 2013 IIRC's <IR> Framework, decreased from 2014 to 2016 and then increased in 2017 after the publication of King IV. Although there is an increase in natural capital, human capital, and manufactured capital, there are year-on-year fluctuations. Intellectual capital also shows a moderate increase with fewer fluctuations.

The capitals with 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 <IR> 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 of 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%), one year after the 2013

IIRC's <IR> Framework 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 2016 to 2020 coincides with the publication of King IV to date.

The Kruskal-Wallis H test (table 11) has no statistically significant difference between the year and the capitals in the performance section. The correlation coefficient table in table 12 shows that all capitals reflect a very weak positive association. Only intellectual capital (Spearman's rho: r=0,188, p<0,01; Kendall's tau-b: 0,163; p<0,01) and total capital (Spearman's rho: r=0,168, p<0,01; Kendall's tau-b: r=0,137; p<0,01) have a significant correlation at the 1% level.

Figures 10, 11 and 12 illustrate the percentage of integrated reports grouped by industry that addressed each of the six capitals and total capital[8] in the strategy, risk and performance sections. The industries have been ranked by total capital disclosure percentage. The industry with the lowest total capital disclosure is on the left and the industry with the highest total capital disclosure is on the right.

Figure 10: Graph showing the percentage of companies grouped by industry that included each of the six capitals in the Strategy section

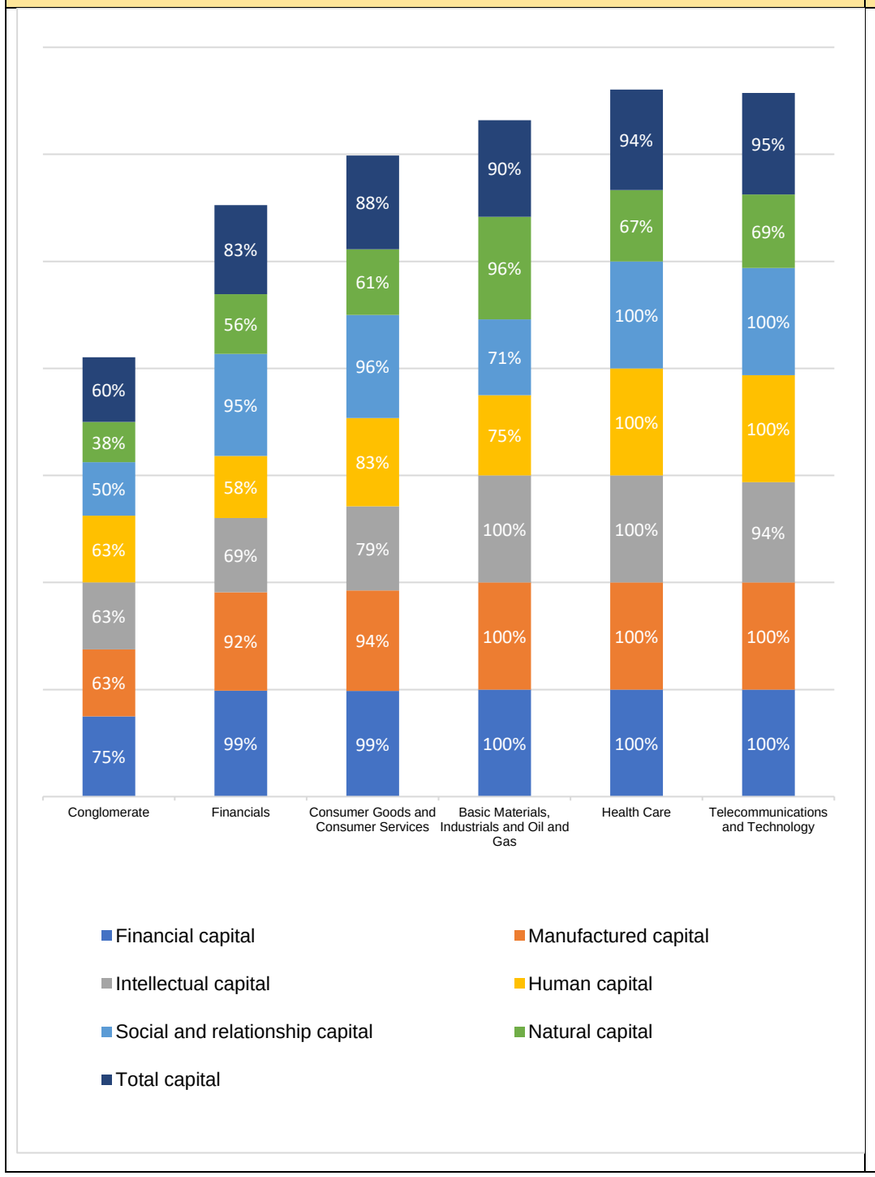
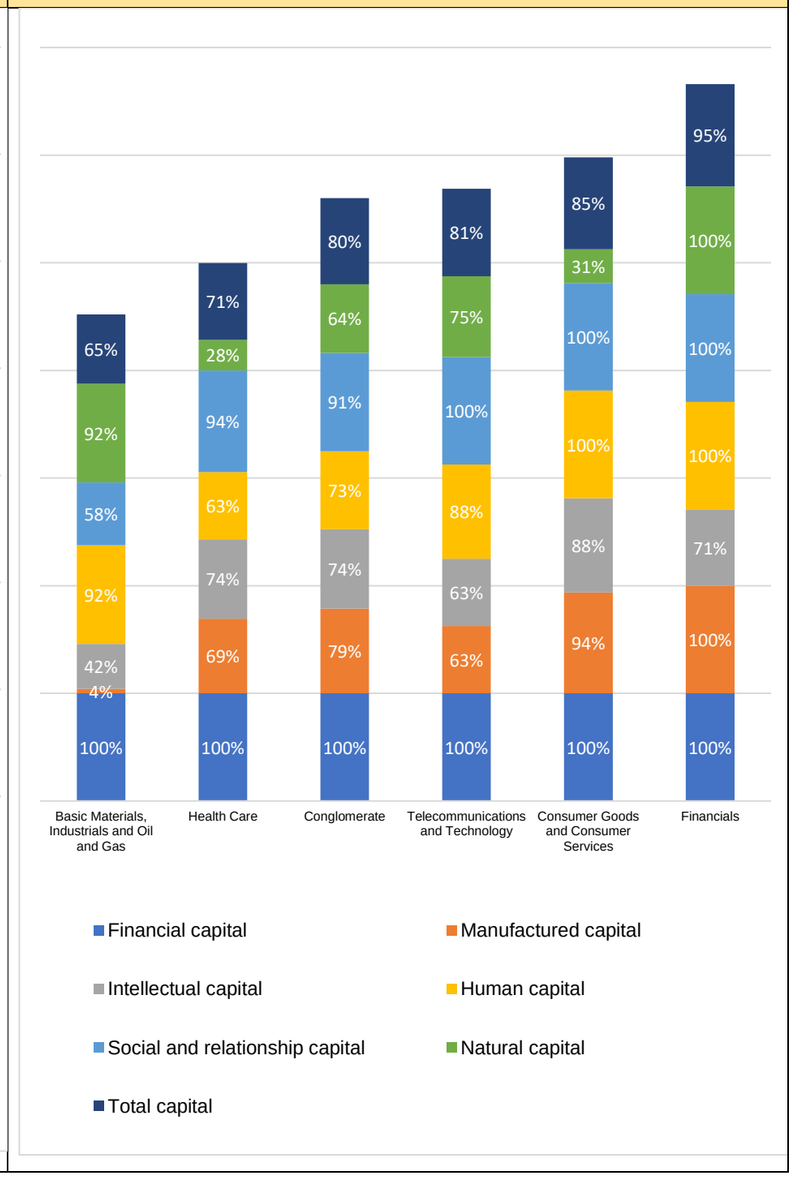


Figure 11: Graph showing the percentage of companies grouped by industry that included each of the six capitals in the Risk section



Figure 12: Graph showing the percentage of companies grouped by industry that included each of the six capitals in the Performance section



[8] Total capital represents the sum of all capitals included in the integrated reports of the companies in a specific industry divided by the total number of sampled integrated reports in that industry.

Total capital disclosure in all the sections is high, except for the total capital presence of the conglomerate in the strategy section (60%), and the basic material, industrials, and oil and gas industry (65%) and health care industry (71%) in the performance section. All the industries were in a position to refine their integrated reporting and thinking practices (Malola and Maroun, 2019), and improve their capital disclosure in the sections.

Financial capital remains a prominent capital across industries across all sections. This is due to its longer reporting history compared to reporting on non-financial capital (Eccles and Krzus, 2010; Skouloudis et al., 2010; IRCSA, 2015). All industries also show a marked presence of manufactured capital in the strategy section and risk section. Manufactured capital is not as prominent in the performance sections of all the industries, with only the financials industry and consumer goods and services industry having a high manufactured capital presence. Social and relationship capital is also high in all the industries' strategy, risk and performance sections, except for the conglomerate in the strategy section (50%) and the basic material, industrials, and oil and gas industry performance section (58%).

The basic material, industrials, and oil and gas industry which is socially and environmentally sensitive has a 100% inclusion of all capitals in the risk section (figure 11). This finding is in line with prior literature which states that socially/environmental industries tend to have greater consideration for non-financial information (Gamble et al., 1995; Deegan and Gordon, 1996; Frost and Wilmshurst, 2000; Gray et al., 2001; Freedman and Jaggi, 2005; Gao et al., 2005; Liu and Anbumozhi, 2009; Kilian and Hennigs, 2014; Stacchezzini et al., 2016; de Laan et al., 2017).

Basic materials, industrials, and oil and gas also have the highest natural capital presence in the strategy section (figure 10) and second highest presence in the performance section (figure 12). 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 industry 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 industry.

Interestingly, although the basic materials, industrials and oil and gas industry is one of the most controversial social industries and is expected to have a strong social and relationship capital presence (Gamble et al., 1995; Deegan and Gordon, 1996; Frost and Wilmshurst, 2000; Gray et al., 2001; Freedman and Jaggi, 2005; Gao et al., 2005; Liu and Anbumozhi, 2009; Kilian and Hennigs, 2014; Stacchezzini et al., 2016; de Laan et al., 2017), their strategy and performance sections reflect the lowest social and relationship capital presence.

Conversely, their risk section findings are in line with the expectation as it has the highest social and relationship capital presence.

The basic material, industrials, and oil and gas industry has the lowest intellectual capital (42%) and manufactured capital (4%) presence in their performance sections (figure 12) which is unusual given the machine intensive nature of the industry, and established business processes. Their human capital disclosures (92%) are the second highest following the financials industry. It is likely reporting on human capital performance has been institutionalised (Haji and Anifowose, 2017) such as reporting on staff injury and staff health and safety.

Social and relationship capital is addressed in the strategy sections of all the telecommunications and healthcare companies from 2013 to 2020 (figure 10). This is followed by consumer goods and services (96%). Human capital follows a similar trend to social and relationship capital, as it is reported in the strategy sections of all the sampled telecommunications and healthcare companies' integrated reports. This is followed by the consumer goods and services industry (96%), and the financials industry (95%). Consumer goods and services have the third-highest disclosure of human capital at 83%. A possible reason for industries including social and relationship disclosures in this section may be legitimising their businesses to appeal to stakeholders (Haji and Anifowose, 2017).

The Kruskal-Wallis H test in table 11 shows that, in the strategy section, there is a 1% statistically significant difference between industry and all capital variables (except manufactured capital which is significant at the 5% level). All the capital variables have a weak correlation with industry. The correlation coefficient table (table 12) shows that industry has a negative relationship with financial capital, manufactured capital, human capital, natural capital and total capital. Social and relationship capital and intellectual capital have a positive correlation with industry.

The risk section (figure 11) human capital presence is strong for industries which rely heavily on human capital, namely: the basic material, industrials, and oil and gas industry, the conglomerate (taking into consideration the nature of the business's held by the conglomerate and their human resources), the health care industry, and consumer goods and services industry. The financials, and telecommunications and technology industries which are likely to rely less on human capital have a lower human capital presence in the risk section.

The Kruskal-Wallis H test in table 11 shows that there is a 1% statistically significant difference between industry and human capital, natural capital and the sum of the capitals in the risk

section. The correlation coefficient in table 12 indicates that all the capital variables have a very weak negative correlation to industry. Significant correlations include human capital at the 5% significance level, and manufactured capital, natural capital and the sum of the capitals 1% significance level.

The industry which considered most of the capitals in their performance sections is the financials industry (figure 12). The financials industry considered 100% of all the capitals in the performance section and intellectual capital considered in 71% of the integrated reports. The consumer goods and services industry has the second highest presence of all the capitals. This is not as expected as these are not the most controversial industries (Kilian and Hennigs, 2014). In the consumer goods and services industry, natural capital is very low (31%) but its intellectual capital is the highest among the industries. Many companies in this industry also disclosed specific business processes, including company innovation, and/or brand and reputational information related to their business or products.

The Kruskal-Wallis H test in table 11 indicates that in the performance section, there is a 1% statistically significant difference between industry and all the capital variables (except intellectual capital and financial capital). There is a 5% statistically significant difference between intellectual capital and industry in the performance section. The difference between financial capital and industry is 0 as all companies across industries included financial capital in their performance sections. The correlation coefficient shows that industry has a 1% significant negative correlation with human capital, natural capital, social and relationship capital, and total capital. All correlations are very weak, except for natural capital which has a weak negative association (Spearman's rho (-0,400; $p<0,01$) and Kendall's tau-b (-0,439; $p<0,01$)).

Figures 13, 14 and 15 show the percentage of integrated reports grouped by company market capitalisation (in quartiles) that address each of the six capitals and total capital[9] in the strategy, risk and performance sections.

Figure 13: Graph showing the percentage of companies grouped by market capitalisation that included each of the six capitals in the Strategy section

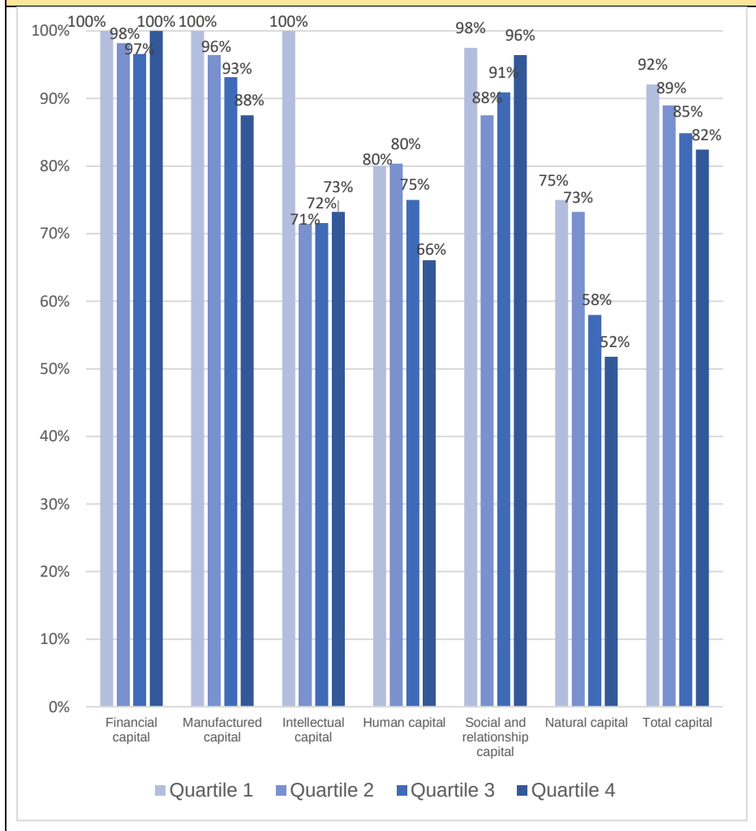


Figure 14: Graph showing the percentage of companies grouped by market capitalisation that included each of the six capitals in the Risk section

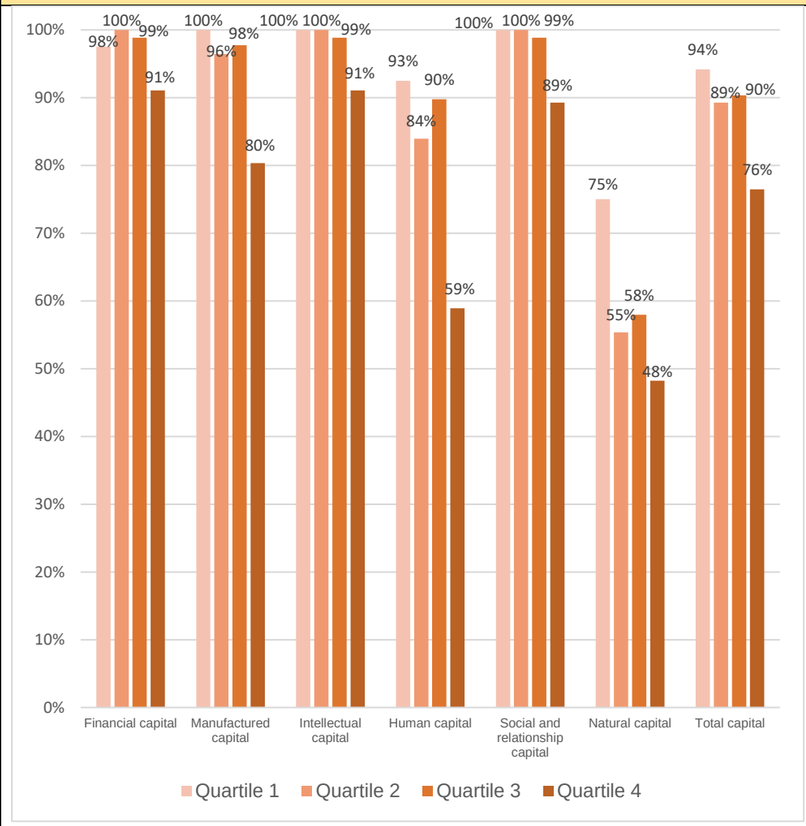
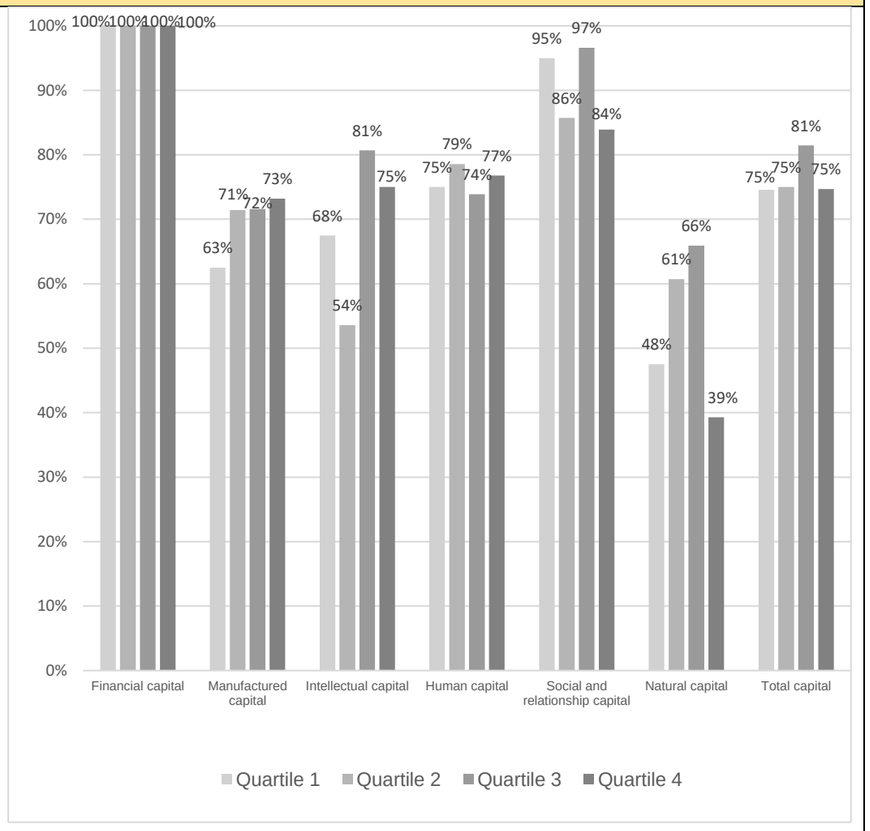


Figure 15: Graph showing the percentage of companies grouped by market capitalisation that included each of the six capitals in the Performance section



[9] Where market capitalisation is the grouping variable, total capital represents the sum of all capitals included in the integrated reports of the companies in a specific quartile divided by the total number of integrated reports in that quartile.

The overall trend of capital disclosures in the strategy, risk and performance sections are not as expected as the smaller firms by market capitalisation had the highest capital presence of most of the capitals in the sections, and not the larger firms which are expected to disclose more ESG information (Ho and Taylor, 2007; de Laan et al., 2017; de Villiers et al., 2017; Drempetic et al., 2020). Natural capital has the lowest presence of all the capitals in the examined sections.

In the strategy section (figure 13), quartile 1 has the highest presence of total capital, quartile 2 has the second highest, quartile 3 has the second lowest and quartile 4 has the lowest presence of all the capitals. Manufactured capital, human capital and natural capital presence show the same trend as total capital. Social and relationship, and intellectual capital presence have similar trends when moving from quartile 1 to 4. These capitals show that quartile 1 has the highest capital presence, quartile 4 has the second-highest presence of these capitals followed by quartile 3 and quartile 2 which have the lowest presence of these capitals.

An interesting observation is that intellectual capital was observed for all companies in quartile 1 in the strategy section. The presence of intellectual capital for the other quartiles is much lower (just above 70%). Human capital is only present in 66% of the quartile 4 companies' integrated reporting strategy sections which is much lower than the other quartiles (quartiles 1 and 2 (80%), and quartile 3 at (75%)).

Of all the capitals, only natural capital and total capital have a significant difference at the 5% level (according to the Kruskal-Wallis H test in table 11) in the strategy section. The Jonckheere-Terpstra test in table 11 shows as the market capitalisation increases from quartile 1 to 4, the manufacturing capital, natural and total capitals decrease significantly from quartile 1 to 4 at the 1% level. Intellectual capital decreases significantly at the 5% level when moving from quartile 1 to 4. The correlation coefficient table (table 12) shows that the associations are very weak and negative for all the capitals except for social and relationship capital, which is very weak and positive.

In the risk section (figure 14), the lower quartile has the highest presence of total capital, and the upper quartile has the lowest level of total capital. Quartiles 2's total capital disclosure is 89% and quartile 3's capital disclosure is slightly higher (90%).

Jonckheere-Terpstra test (table 11) 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. The correlation coefficients in table 12 show very 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)).

A closer examination of the descriptive statistics reveals that quartiles 1, 2 and 3 show a marked presence of financial capital, manufactured capital, intellectual capital, and social and relationship capital. Quartile 4 has a noticeably lower presence of these capitals. Human capital shows a similar trend. The only difference is that the presence of human capital between quartile 4 and quartile 1 is much lower (59%) compared to the other capitals. Natural capital observed differs from the other section because quartile 1 has the highest presence (75%) and quartiles 2,3 and 4 are significantly lower at 55%, 58% and 48% respectively.

Significant relationships according to the Kruskal-Wallis H test (table 11) include the following: market capitalisation and total capital, manufactured capital, intellectual capital, human capital, and social and relationship capital at the 1% significance level. There is a statistically significant difference at the 5% level between market capitalisation and financial capital.

The performance section results reveal that quartile 3 (81%) has the highest total capital (illustrated in figure 15). Quartiles 1, 2, and 4 all have a total capital present of 75%. This result is different from the strategy and risk section where quartile 1 has the highest total capital.

At an individual capital level in the performance section, quartile 3 also leads in the presence of intellectual capital, social and relationship capital, and natural capital. Financial capital is reported by all companies in the sample. Figure 15 shows that reporting on manufactured capital is more or less the same in quartiles 2, 3 and 4 (71% to 73%). Quartile 1 has the lowest disclosure score of manufactured capital (63%). The researcher could not identify any pattern in how intellectual capital, social and relationship capital, human capital, and natural capital performance presence are spread across the market capitalisations.

An interesting result from figure 15 is that intellectual capital disclosure in quartile 2 is much lower than in the other quartiles (54% in quartile 2, compared to quartile 1 at 68%, quartile 4 at 75%, and quartile 3 at 81%).

Table 12 shows that there is a mix of very weak positive and negative correlations between the market capitalisation and the different non-financial capitals in the performance section. The only capitals which have a statistically significant difference to market capitalisation from the Kruskal-Wallis H test (in table 11) are intellectual capital and natural capital at the 1% level, and social and relationship at the 5% level. Intellectual capital is the only capital which increases at a significant level (5%) when the market capitalisation increases from quartile 1 to 4 (J-T= 2,18; $p<0,05$) (table 11). The correlation is very weak, as indicated in table 12.

Chapter 6: Conclusion

This exploratory thesis provided an account of the level of detail of the strategy, risk and performance sections of the annual integrated reports of top JSE-listed companies and whether the six capitals were addressed in the stated sections (King, 2015; de Villiers et al., 2020) over 8 years (2013 to 2020).

Report sections were identified using content analysis. The level of detail of each section was measured using a basic scoring system which considered whether the specific strategy, risk or performance factors were mentioned, described, and provided entity-specific results. To determine whether each of the capitals was addressed, the stated sections were analysed through examining the definitions and guidelines published by the IIRC and analysing prior studies' interpretation of the different capitals.

Descriptive statistics were performed to evaluate the level of detail and presence of the capitals in each section. Non-parametric tests, Kruskal-Wallis H tests, Jonckheere-Terpstra tests, a Spearman rho and Kendall's Tau-b test, were used to determine whether there were any associations between these variables and the grouping variables: year, industry and market capitalisation. The findings are summarised below.

6.1 Summary of findings

Key findings (grouped by research question) are discussed below.

RQ1: What is the level of detail of the strategy, risk and performance sections in the integrated reports of top JSE-listed companies and are the six capitals addressed in these sections from 2013 to 2020?

There is detail in the sampled companies' integrated report strategy (average level of detail score of 2,53), risk (average level of detail score of 2,45) and performance sections (average level of detail score of 2,36) as noted in table 8. A high level of detail means that the strategy, risk and performance elements were mentioned in the section, including descriptions and/or results on the elements. This is because of the long reporting history of South African firms which allow them to refine their integrated reporting practices (Malola and Maroun, 2019).

The sampled integrated reports accounted for nearly all the capitals on average. The strategy section accounted for 5,19 capitals on average, the risk section accounted for 5,25 capitals on average and the performance section accounted for 4,63 capitals on average. Financial capital disclosure dominated in all the sections, being observed more often than the non-financial capitals, except in the risk section where intellectual capital was observed more (98% for intellectual capital versus 97% for financial capital), in line with expectations from prior

literature (Eccles and Krzus, 2010; Skouloudis et al., 2010; IRCSA, 2015). Social and relationship capital is the non-financial capital and had the highest presence in the performance section, and the second highest non-financial capital disclosure (1% lower than the highest non-financial capital) in the risk section. This observation is supported by findings of Setia et al. (2015) and Solomon & Maroun (2012). Natural capital had the lowest presence in all the sections. The lower presence of natural capital may imply that companies do not place as much emphasis on this capital in their strategy, risk and performance sections unless their businesses largely impact the environment (IIRC, 2013d), and/or natural capital may be specifically discussed in other sections of the integrated report or in an environmental report.

RQ 2: How does the level of detail of the strategy, risk and performance sections differ among top JSE-listed entities?

The sub-questions particularly focus on whether there are associations between the level of detail in strategy, risk and performance sections, and grouping variables: year (2013 to 2020) (RQ 2.1), industry (RQ 2.2) and market capitalisation (RQ 2.3).

The level of detail in the strategy, risk and performance sections shows a positive trend with successive years of reporting. Significant relationships have been identified between year and level of detail in the strategy and risk sections. All the sections and year show very weak positive significant correlations. This may imply that to some extent, South African companies have produced more comprehensive integrated reports of improved quality as the years progressed.

Significant relationships have been identified between industry and level of detail in all the sections. Level of detail in the strategy and performance sections, and industry show very weak correlations, with only the association between industry and level of detail in the risk section being significant. This may be because of the level of detail of information reported varying widely among companies in the same industry (Adams, 2002; Stacchezzini et al., 2016; Diouf and Boiral, 2017) and resulting in weak associations. The telecommunications and technology industry had the highest level of detail in their strategy and risk sections. The financials industry had the highest performance section level of detail. This is not expected as these are not seen as controversial industries (Kilian & Hennigs, 2014) where more information would be expected to be reported to stakeholders (de Villiers et al., 2017). With regards to the telecommunications and technonlogy industry, there may be an apparent need to manage South African consumer sentiments towards their businesses (Haji and Anifowose, 2017) and resulting in it having the highest level of detail when the strategy, risk and

performance section scores are aggregated. The conglomerate had the lowest level of detail for all the sections. When aggregating the level of detail of the strategy, risk and performance sections, the basic materials, industrials, and oil and gas industry which is a highly controversial industry (Kilian & Hennigs, 2014), and the health care industry showed the second highest and third highest scores. This implies that when various integrated report sections are evaluated together, the more controversial industries (Kilian & Hennigs, 2014) and industries which are potentially legitimising their operations (Haji and Anifowose, 2017) may be increasing efforts to improve the level of detail on the entire integrated reports and not specific sections.

Significant relationships have been identified between market capitalisation and level of detail in the risk and performance sections. The level of detail in these sections and market capitalisation, unexpectedly have a negative correlation, albeit very weak. This is because smaller firms rather than larger firms have a higher level of detail (contrary to what is expected from prior research (Lang and Lundholm, 1993; Ahmed and Courtis, 1999; Depoers, 2000; Ho and Taylor, 2007; de Laan et al., 2017)). The strategy section level of detail has a very weak positive correlation to market capitalisation but this is mainly because of a sharp increase from quartile 1 to quartile 2, and decreasing more gradually from quartile 2 to quartile 4. Only the performance section level of detail has a significant decrease when the market capitalisation increases.

RQ3: How does reporting on the six capitals in the strategy, risk and performance sections differ among top JSE-listed entities?

The sub-questions particularly focus on whether there are associations between the inclusion of each of the capitals in strategy, risk and performance sections, and grouping variables year (2013 to 2020) (RQ 3.1), industry (RQ 3.2) and market capitalisation (RQ 3.3).

This study identified many significant relationships and correlations among the various capitals and the grouping variables (table 11 and 12). Total capital in the strategy and risk sections have significant associations across all grouping variables (year, industry and market capitalisation). There is a significant positive correlation between year and total capital in all the stated sections, and significant negative correlations between industry and total capital in the stated section. Market capitalisation has a significant negative correlation with total capital in the strategy and risk section, and a very weak positive association with total capital in the performance section.

Below are notable results and significant differences per grouping variable.

Year-on-year trends from 2013 to 2020 reveal that there is a general increase in the presence of all the capitals in the strategy, risk and performance sections of the integrated reports examined. This suggests that the companies may have a greater awareness of the capitals the firm interacts with and incorporated this in their integrated reports. In all the sections, natural capital showed up and down fluctuations. There was only a significant increase (at the 5% level) in natural capital in the risk section on a year-on-year basis.

When grouped by industry, all the capital disclosures in the strategy section and all the non-financial capitals in the performance section have significant differences. Very weak correlations between the capitals in the strategy, risk and performance section and industry were evident, with most being negative. Where positive associations existed, these were also very weak. The basic material, industrials, and oil and gas industry, which is most socially and/or environmentally sensitive, had lowest total capital presence in the performance section but highest total capital presence in the risk section. Although their total capital disclosure was low in the performance section, they had a high presence of natural and human capital in this section. In the strategy section, less controversial industries, namely, telecommunications and technology as well as health care disclosed more capitals than the basic material, industrials, and oil and gas industry. The findings suggest fewer controversial industries may have more capital disclosure, which is not in line with expectations (Kilian and Hennigs, 2014).

All capitals in the risk section (except for natural capital) have significant differences when grouped by market capitalisation, and the direction of association is negative and significant (for all capitals). The strategy and performance sections mostly showed negative correlations. The strategy section showed a significant decrease in manufactured capital presence (1% level), intellectual capital presence (5% level), natural capital presence (1% level) and total capital presence (1 % level) as the firm size increased. The performance section only showed a significant correlation between intellectual capital and industry. This was a very weak positive correlation. As the market capitalisation increased, firms in higher quartiles did not have a higher capital presence than firms in lower quartiles. In the strategy and risk section, quartile 1 had the highest capital disclosure. Quartile 3 had the highest capital disclosure in the performance section. This revealed unexpected results as larger firms were expected to have more capital disclosures because of their resources and higher stakeholder pressures (Ho and Taylor, 2007; de Villiers et al., 2017; Drempetic et al., 2020).

6.2 Contribution

This study focused on specific integrated report sections, including the strategy, risk and performance sections which should provide information on the firm's value creation process (KPMG, 2012b; IIRC, 2013d). A limited number of studies focus on specific integrated reporting sections. This study may be useful to stakeholders who do not read the entire integrated report. They may find it useful to understand the value creation process of firms and their integrated thinking application through examining specific sections for their decision-making purposes (IIRC, 2013d; Deloitte, 2015; IoDSA, 2016; Slack and Campbell, 2016; Eccles and Serafeim, 2017).

This thesis is part of the limited body of research on integrated reporting and thinking (Tweedie and Martinov-Bennie, 2015; de Villiers et al., 2020; Rossi and Luque-Vílchez, 2020). The study adds to integrated reporting quality research through an analysis of section level of detail in different integrated report sections (Marrone and Oliva, 2019). 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).

The period studied extends beyond prior literature. Prior studies on South African companies focused on King III adoption and the adoption of the IIRC's 2013 IIRC's <IR> Framework in the initial years after publication between 2009 to 2015 with many covering the initial adoption (Solomon and Maroun, 2012; Carels et al., 2013; IRCSA, 2015; Setia et al., 2015; Haji and Anifowose, 2017; Herbert and Graham, 2019). International research focuses largely on adoption of the IIRC's <IR> Framework in 2013 (Wild and van Staden, 2013; Melloni, 2015; Serafeim, 2015; Setia et al., 2015; CIMA, 2016; Maniora, 2017). This study assessed the integrated reports over a longer period (2013 to 2020), coinciding with the publication of the IIRC's 2013 IIRC's <IR> Framework and the publication of King IV in 2016. This may provide robust results on the level of detail and capital disclosure practices by JSE-listed entities using more recent integrated reports.

This study's findings are in line with most prior studies' findings, indicating that over the years capital presence increase, the presence of financial and social and relationship capital may be strong, and there may be a better reporting quality in different sections (Solomon and Maroun, 2012; Setia et al., 2015; Malola and Maroun, 2019). It also provides interesting trends which are not as expected. These results include more controversial industries may have less capital disclosure in their strategy, risk and performance sections. Companies with higher market capitalisation may not necessarily consider all the capitals in their strategy, risk and performance sections.

This paper can assist preparers of integrated reports become more aware of the content which may indicate that an integrated report section has a strong level of detail (at a basic level), and what information may indicate that the six capitals are present in integrated reports. This is demonstrated through the descriptions of the level of detail, capital themes and subthemes, and illustrations of how firms operationalise integrated reporting through the level of detail in different sections and their application of a multi-capital approach. Stakeholders may benefit from this study by gaining a better understanding of integrated thinking informed by the six capitals and level of detail of reports.

6.3 Limitations and areas for future research

This study, like any other study, has limitations.

The period studied was long and the coding process was time-consuming. This resulted in the study only including 30 companies of the top 100 JSE- listed firms. This constrained the sample size and affected the infer-ability of the results. This weakness was mitigated by sampling a range of companies across the market capitalisation and various industries. Future studies can include more listed companies, including smaller and unlisted companies to determine whether the level of detail and capital disclosures reported are similar. The study can also be expanded to different jurisdictions outside of South Africa.

The process was further limited by the time taken in determining which specific integrated report sections to use. This paper only focused on the strategy, risk and performance sections of integrated reports so did not provide the full adoption of integrated thinking and reporting practices by firms. This study can be expanded to other integrated report sections, such as the business model section.

The construct validity of this report was negatively affected by the use of judgement in determining the section to be evaluated, the section level of detail, and determining whether the sections considered different capitals. The limitation was mitigated by a single primary coder who strove for a consistent approach when analysing every report. This coding process weakness was also mitigated by reducing the amount of judgement applied by the coder. This was achieved by only including a basic analysis of the level of detail of the section as a whole and not incorporating more complex analysis which may result in more interpretation of the section, such as determining the <IR> alignment in terms of content elements in determining the quality of disclosures in the sections. Further, this study determined only whether the capitals were present or absent in a section. It did not go further in assessing the extent of the capital disclosure, by determining, for example, repetition, length or frequency of disclosure.

Only coding basic level of detail and presence of the capitals, provides a limited view of the integrated reporting quality practices and integrated thinking practices of firms. Future studies can explore aspects of integrated reporting quality in the sections such as alignment with the <IR> reporting guidelines and content elements. Future studies may determine the frequency and quality of capital disclosures. Quality assessment of the capital disclosures may include whether each capital is explained, whether generic repetitive information is included on the capital year-on-year, and whether linkages are made between the different capitals. This will provide a more comprehensive assessment of the extent of integrated thinking through a multi-capital approach in different sections. By assessing the section level of detail and capital disclosures in more detail, users can gain a better understanding of firms integrated reporting and thinking practices. These studies may include additional tests, including tools such as regression analysis which illustrate significant trends.

When interpreting results, users are cautioned not to attribute causal relationships between variables. This study does not prove causal relationships or the direction of causation. For example, where reference is made to the IIRC's 2013 IIRC's <IR> Framework and King IV (2016), and whether increases or decreases occurred at publication or post the publication of these <IR> guidelines. It is aimed to make the reader aware of capital increases and decreases around these periods. Although the paper expects, in line with prior literature, to see increases in the presence of non-financial capitals at or immediately after the publication of these guiding documentation (Solomon and Maroun, 2012; Carels et al., 2013; Serafeim, 2015; Setia et al., 2015; Haji and Anifowose, 2017; Herbert and Graham, 2019) it does not imply that the <IR> guidelines do with absolute certainty, influence the presence of the capitals in the sections analysed.

This paper highlights findings on the level of detail and capital presence when grouped by year (2013 to 2020), industry and market capitalisation which can be analysed in further detail in future literature. For example, unexpected findings such as the basic materials, industrials and oil and gas industry (which is a socially and environmentally sensitive) reporting on fewer capitals in the strategy and performance sections can be evaluated further through qualitative research to determine why this may be the case, and additional quantitative research may be done to determine whether this is the case among other firms in the industry. Another interesting trend is that among the 30 top 100 companies analysed, smaller companies (by market capitalisation) reported on more capitals than did larger companies. Future studies can assess this finding in further detail.

Significant relationships, correlations and noticeable findings on the level of detail and specific capital presence can also be further investigated. For example, natural capital presence has the lowest average presence in all the sections examined and has shown significant negative trends with market capitalisation. A future study can assess whether the findings are the same if other firm size measures are used, such as book value or the number of employees.

Similar future studies which may repeat or extend this research, may include using an external party to validate their results and assess whether the results can be transferred in a different context, such as examining the level of detail and capital themes in other company reports or company websites.

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Chapter 8: Appendices

Appendix 1: Companies included in the study

Table 13 includes the companies that were sampled in the study. Companies were classified by industry and market capitalisation quartile.

Table 13: Companies included in the study

Company	Market Capitalisation using quartiles (on 09 June 2021)	Industry
Bidvest Ltd	3	Conglomerate
Discovery Ltd	3	Financials
FirstRand Ltd	4	Financials
Growthpoint Properties Ltd	3	Financials
Investec Ltd	1	Financials
JSE Ltd	1	Financials
Kumba Iron Ore Ltd	4	Basic Materials, Industrials and Oil and Gas
Life Healthcare Group Holdings Ltd	2	Health Care
Mediclinic International plc	3	Health Care
MMI Holdings Ltd	2	Financials
Mr Price Group Ltd	3	Consumer Goods and Consumer Services
MTN Group Ltd	4	Telecommunications and Technology
Naspers Ltd	4	Consumer Goods and Consumer Services
Nedbank Group Ltd	3	Financials
Netcare Limited	2	Health Care
Oceana Group Ltd	1	Consumer Goods and Consumer Services
Pick n Pay Stores Ltd	3	Consumer Goods and Consumer Services
RCL Foods Limited	1	Consumer Goods

Table 13: Companies included in the study		
Company	**Market Capitalisation using quartiles (on 09 June 2021)**	**Industry**
		and Consumer Services
Redefine Properties Ltd	1	Financials
Remgro Ltd	3	Financials
Sanlam Ltd	4	Financials
Santam Ltd	2	Financials
Sappi Ltd	2	Basic Materials, Industrials and Oil and Gas
Sasol Limited	2	Basic Materials, Industrials and Oil and Gas
Shoprite Holdings Ltd	4	Consumer Goods and Consumer Services
The Foschini Group Ltd	2	Consumer Goods and Consumer Services
The Spar Group Ltd	3	Consumer Goods and Consumer Services
Tiger Brands Ltd	3	Consumer Goods and Consumer Services
Vodacom Group Ltd	4	Telecommunications and Technology
Woolworths Holdings Ltd	3	Consumer Goods and Consumer Services

Appendix 2: Illustration of how level of detail was analysed

Table 14 illustrates examples of disclosures with scores of 0 to 3.

<table>
<tr><th colspan="2">Table 14: Illustration of how level of detail was analysed using level of detail scores</th></tr>
<tr><th>Score</th><th>Illustration from integrated report</th></tr>
<tr><td>0</td><td>A separate risk report is referred to in the integrated report. No summary or extract of the risk report is included in the integrated report:

MATERIAL RISK FACTORS

In terms of the JSE Listings Requirements, FirstRand is required to disclose risk factors in terms of paragraph 7.F.7 (description of material risks which are specific to the issuer, its industry and/or its securities).

https://www.firstrand.co.za/investors/annual-reporting/

(FirstRand Limited’s Annual Integrated Report, 2020, p. 4)</td></tr>
<tr><td>1</td><td>The strategic objectives are only mentioned but no results and/or description:

2013 strategic objectives:

Own the cash flows

Manage businesses actively and successfully

Master of the distribution channel

Maintain decentralised channels and reach common goals

(The Bidvest Group Limited’s Integrated report, 2013, p. 6)</td></tr>
<tr><td>2</td><td>The key performance section includes what the key performance indicators are and provide results of the key performance indicators. The key performance indicators are not described in further detail:

2014 Performance against key performance indicators

<table><tr><td>Africa expansion</td><td>Medium-term target#</td><td>March 2014</td><td>March 2013</td></tr><tr><td>Number of stores – Africa</td><td>280 – 300</td><td>120</td><td>104</td></tr></table>
#Medium-term target reflects objectives by 2018

(Extract from the table included in the performance against key performance indicators section in The Foschini Group Limited’s integrated report, 2014, p. 26).</td></tr>
<tr><td>3</td><td>The risk section includes what the risks are, change in risk ranking from the prior year to the current year (results), and descriptions of the risks (risk context, impact on value, and mitigating actions for each identified risk).</td></tr>
</table>

Table 14: Illustration of how level of detail was analysed using level of detail scores

Score	Illustration from integrated report

Below is an extract of a table which includes the material risk with its risk ranking (with one being the most material risk) in the current year and prior year:

Managing our Material Risks

2020	Material risk	2019
1	Market volatility	4

Below are the risk context, impact on value, and mitigating actions for the risk identified above:

RISK CONTEXT	IMPACT ON VALUE RISK	MITIGATION ACTIONS
1 MARKET VOLATILITY (4)		
• Over-leveraged balance sheet • Increase in US dollar/ Euro price for fuel • Weakening ZAR impacts US dollar imports of frozen and raw fish • Sensitivity to fishmeal and oil price to global supply and demand dynamics	• Inability to maintain margins • Cost increases • Decline in earnings • Impede capital raising ability • Compliance with debt covenants	• Execute hedging policy • Natural business hedge, with both imports and exports • Fixed interest rate • Strict repayment of debt and covenant compliance • Negotiate lower US dollar prices, currency, fuel and • interest rates

<table>
<tr><th colspan="3">Table 14: Illustration of how level of detail was analysed using level of detail scores</th></tr>
<tr><th>Score</th><th colspan="2">Illustration from integrated report</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td></td><td>• Diverse customer base in different geographic locations</td></tr>
<tr><td colspan="3">Risk area: Financial</td></tr>
</table>
(Extract of Oceana Group Limited’s integrated report, 2020, p. 44-46)
</td></tr>
</table>

Appendix 3: Illustration of how the presence of the capitals was analysed

Table 15 illustrates how the presence of the six capitals was analysed by flagging specific examples.

Table 15: Illustration of how the presence of the capitals was analysed

Section (or equivalent) of the report	**Information in the section**	**Analysis of what was included using thematic content analysis**	**The score given for the presence of each capital**
Key performance	**Salient features** Total headline earning per share down by 61.3% (Among others) (Salient features section of Remgro Limited's integrated report, 2020, p. 8-9)	Total headline earning per share forms part of the financial ratios theme.	Financial Capital: 1
Material risk	**Monitoring of key risks** Capital: Manufactured capital including: • Office, service centre and warehouse buildings and equipment. • Information and technology infrastructure and equipment. Key risks include: Most of our businesses own either buildings (e.g., offices,	The disclosure mentions the company's technological and physical infrastructure and the related risk. The relevant themes include: • Physical infrastructure • Technological infrastructure	Manufactured capital: 1

Table 15: Illustration of how the presence of the capitals was analysed			
Section (or equivalent) of the report	**Information in the section**	**Analysis of what was included using thematic content analysis**	**The score given for the presence of each capital**
	outlets, warehouses) and/or leasehold improvements and various types of (IT) equipment, office furniture, vehicles and others. Failure to operate these assets efficiently and/or to maintain these adequately could result in service interruption or write-offs and affect profitability. Furthermore, such assets are subject to potential theft and damage, which could result in losses should they not be appropriately insured. Failure of software, systems or infrastructure (e.g., due to technical failures or cyber-attacks) could disrupt continuous services to our customers, affecting satisfaction. (Naspers' integrated report, 2020, p. 56)		

Table 15: Illustration of how the presence of the capitals was analysed			
Section (or equivalent) of the report	**Information in the section**	**Analysis of what was included using thematic content analysis**	**The score given for the presence of each capital**
Key performance	**Measuring performance for the year ended 31 December (KPI)** ***Safety and health*** Fatal injury frequency rate (FIFR) 2020: 0 ; 2019: 0 ; 2018: 0 Total recordable case frequency rate (TRCFR) 2020: 1.74 ; 2019: 2.06 ; 2018: 1.80 New cases of occupational disease 2020: 0 ; 2019: 8 ; 2018: 5 ***People*** Voluntary labour turnover 2020: 3.2 ; 2019: 3.4 ; 2018: 4.1 (Kumba Iron Ore's integrated report, 2020, p. 14-15)	Injury, case and occupational disease illustrate that the staff safety and health theme is evident in the key performance section. Voluntary labour turnover illustrates that the number of employees/ staff turnover theme is included in the key performance section.	Human Capital: 1
Material risk	**Monitoring our key risks** Capital: Intellectual capital	The intellectual property and other intangibles theme are illustrated by mentioning	Intellectual capital: 1

Table 15: Illustration of how the presence of the capitals was analysed			
Section (or equivalent) of the report	**Information in the section**	**Analysis of what was included using thematic content analysis**	**The score given for the presence of each capital**
	• Intellectual capital (knowledge-based intangibles) includes intellectual property (IP) such as patents, copyrights, trademarks, domain names, confidential information, as well as institutional knowledge, systems, procedures and culture. Key risks include: • (1) Ineffective response, including insufficient innovation, to meet our customers' changing demands and consumption patterns. • (2) Improper use and/or inadequate protection of IP, customer and privacy-sensitive data and other	IP (intellectual property) of the company in key risk (2). The business processes theme is illustrated by mentioning "institutional knowledge, systems, procedures and culture". There is a description linked to a key risk faced by the company (1) response to customer demands, and (2) and (4) referring to company systems and data. The brand and reputation theme is illustrated by referring to damage to company reputation in key risks (2) and (3).	

Table 15: Illustration of how the presence of the capitals was analysed			
Section (or equivalent) of the report	**Information in the section**	**Analysis of what was included using thematic content analysis**	**The score given for the presence of each capital**
	confidential information may cause us to lose market share, revenue and opportunities, whereas loss of privacy-sensitive data could give rise to regulatory action, including levying of fines. • (3) Reputational damage or liability due to infringement, theft or misuse of IP and rights of third parties by any of our businesses. • (4) Our systems and the data that they store are subject to various IT security threats, which target sensitive information, integrity and		

Table 15: Illustration of how the presence of the capitals was analysed			
Section (or equivalent) of the report	**Information in the section**	**Analysis of what was included using thematic content analysis**	**The score given for the presence of each capital**
	continuity of our services and/or reputation of our businesses (Naspers integrated report, 2020, p. 57)		
Key performance	**Measuring performance for the year ended 31 December (KPI)** ***People*** Women in management (%) 2020: 27 ; 2019: 25 ; 2018: 24 Women in workforce (%) 2020: 24 ; 2019: 23 ; 2018: 23 Historically disadvantaged South Africans (HDSAs) in management (%) 2020: 72 ; 2019: 71 ; 2018: 68	The BBBEE, employee empowerment and related initiatives theme is illustrated by the key performance indicator: employment of women and HDSAs.	Social and relationship capital: 1

Table 15: Illustration of how the presence of the capitals was analysed			
Section (or equivalent) of the report	**Information in the section**	**Analysis of what was included using thematic content analysis**	**The score given for the presence of each capital**
	(Kumba Iron Ore's integrated report, 2020, p. 14-15)		
Key performance	**Measuring performance for the year ended 31 December (KPI)** ***Environment*** Energy consumption (million GJ) 2020: 8.10 ; 2019: 8.78 ; 2018: 8.85 GHG emissions (Mt CO2-equivalent) 2020: 0.91 ; 2019: 1.00 ; 2018: 0.96 Total water withdrawals (million m3) 2020: 29.4; 2019: 30.5 2018: 30.8 (Kumba Iron Ore's integrated report, 2020, p. 14-15)	The sustainable supply chain/ business processes theme is illustrated by the company's performance measures in relation to its energy, emission and water usage.	Natural Capital: 1

Appendix 4: Subthemes of capital disclosure

Table 16 shows the specific items that were considered in determining whether specific capital themes from the thematic content analysis were included in the sampled integrated reports.

Table 16: Elaboration on items considered in determining whether a specific capital was included in the section	
Capital Theme	**Items identified indicating the capital theme is present**
Financial Capital	
Financial ratios	• Earnings per share • Profit • Sales • Return on equity • Dividends • Return on assets • Debtors' books • Finance income or charges • Operating margin • Free cash flow • Market share • Costs • Liquidity • Credit • Interest rate ratio • Solvency • Profitability
Economic environment	• Macroeconomic environment • Microeconomic environment including competition in the industry • Risk related to different countries' economic environments • Covid-19 impact on the economy and lockdown restrictions • Inflation • Exchange rate

Table 16: Elaboration on items considered in determining whether a specific capital was included in the section	
Capital Theme	**Items identified indicating the capital theme is present**
	• Industrial action/strikes • Electricity supply/Eskom • Fraud and corruption
Manufactured capital	
Technological infrastructure	• Technological applications • Business continuity related to information technology • Cyber attacks • Changes in technology impacting the business
Physical infrastructure	• Business/operational/other facilities • Acquisitions
Intellectual capital	
Business processes	• Business culture including entrepreneurial spirit • Business strategy • Group structure • Internal operations/departments/processes/production/ practices/programmes/activities/investments • Trading model • Working capital management • Innovation • Creation of value chains • Product inputs and outputs • Efficiencies
Brand and Reputation	• Reputation • Brand (group/company/products) • Social media presence related to company brand and/or reputation
Company governance and control	• Ethical and governance standards • Ethical and governance structures

Table 16: Elaboration on items considered in determining whether a specific capital was included in the section	
Capital Theme	**Items identified indicating the capital theme is present**
Intellectual property and Other intangibles	• Patents • Trademarks • Customer databases • Critical skills (such as data scientists and actuaries as critical skills for insurance firms, and doctors and nurses for hospitals) • Other intangibles referred to in the relevant sections of the report
Research and development	• Research and development of products and services • Other research related to the company's business (including industry-specific and market-specific research)
Human capital	
Key staff retention	• Attraction of talent • Succession planning
Staff safety	• Fatalities • Injuries • The mental and physical wellbeing of staff • Staff occupational health and safety discussion, protocol, initiatives, etc.
Overall employee satisfaction	• Staff surveys • Discussion with staff of their work experience • Other forms of communication related to employee satisfaction
Social and relationship capital	
Customers	• Customer loyalty programme • Customer value including quality and/or low-priced products • Customer satisfaction

Table 16: Elaboration on items considered in determining whether a specific capital was included in the section	
Capital Theme	**Items identified indicating the capital theme is present**
	• Number of customers
Laws and regulations	• Politics • Discussion on a specific country's politics and/or regulatory environment • Specific laws and regulations e.g., health and safety, and food safety laws/ regulations • Compliance with legal and regulatory requirements • Tax • Trade unions
Broad-Based Black Economic Empowerment (BBBEE) and employee empowerment initiatives	• BBBEE/BEE • Empowerment of employees with disabilities • Women empowerment • Empowerment of other previously disadvantaged groups • Youth empowerment including appointment as permanent employees, interns, etc.
Projects by the firm to help society	• Corporate social investment (CSI) • Donations
Funders of capital	• Shareholders • Debtholders • (This theme was captured if funders are explicitly mentioned in sections analysed in the report. E.g. if the section discloses financial ratios without explicitly mentioning the benefit to funders, the information would only be classified under financial ratios)
Natural capital	
Sustainable supply chain/business processes	• Usage of natural resources

Table 16: Elaboration on items considered in determining whether a specific capital was included in the section	
Capital Theme	**Items identified indicating the capital theme is present**
	• These include water, electricity and other natural resources • Pollution emitted by the company because of its business processes
Climate change/natural disasters	• Climate change mentioned by the firm • Other natural disasters are considered such as floods and droughts