

Insights from narrative disclosures regarding Integrated Thinking in Integrated Reports in South Africa and Japan

Rayhan Arul (The University of Auckland)

Charl De Villiers (The University of Auckland, and University of Pretoria)

Ruth Dimes (The University of Auckland)

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ABSTRACT

Purpose: This study aims to provide insights into the poorly understood concept of Integrated Thinking by comparing and contrasting disclosures related to Integrated Thinking provided in Integrated Reports in two different institutional settings.

Design/method: The study uses content analysis of the narrative sections of Integrated Reports to explore similarities and differences in the way the concept of Integrated Thinking is portrayed. It uses a matched sample of financial services companies in two different institutional settings, South Africa (where Integrated Reporting is mandatory, and IR practices are world-leading) and Japan (where Integrated Reporting is voluntary, and interest in IR is still developing). IR adoption is viewed through the lens of institutional theory, focusing on isomorphic forces which affect companies' structure, policies and practices.

Findings: Even though the conceptualisation of Integrated Thinking differs between South Africa and Japan, in both settings there is a strong association between Integrated Thinking disclosures and corporate governance practices, materiality assessments and the pursuit of an industry leadership position, suggesting a link between these concepts and the underlying level of Integrated Thinking. Japanese disclosures appear to mimic South African disclosures, highlighting South Africa's leading role in IR, although Japan shows more varied interpretations of Integrated Thinking.

Originality/value: This study contributes to the growing body of literature on the poorly understood concept of Integrated Thinking, responding to calls from both academics and practitioners for more research in this area. It shows the potential for Integrated Thinking to develop through a process of mimicry and highlights South Africa's leading role in the dissemination of best practice in the field. Its findings relating to the fluid conceptualisation of Integrated Thinking in different institutional settings will be of interest to regulators and practitioners. To our knowledge this is one of the first studies to consider disclosures relating to Integrated Thinking in the financial services sector. Focusing on the financial services sector, with its unique features and regulatory frameworks, allows for deeper analysis, free from the potential distortions inherent in studying a broader cross-section of industries. The study also highlights the importance of corporate governance to Integrated Thinking, suggesting future research avenues.

Keywords: Integrated Thinking; Integrated Reporting; narrative disclosures; corporate governance

1. INTRODUCTION

Integrated Thinking, the underlying management philosophy supporting Integrated Reporting (IR), is a way of holistically considering the challenges presented by the complicated interactions between different organisational resources and the risks and opportunities they represent (De Villiers et al., 2020a). Given stakeholders' conflicting demands and the complexity of large companies' operations, Integrated Thinking can be seen as a form of both management and governance (Rinaldi, 2020; Velte & Gerwanski, 2020). However, the concept of Integrated Thinking is not well understood by academics or practitioners (Busco et al., 2020), and there is evidence of a potential disconnect between Integrated Thinking and IR. This paper therefore aims to shed light on the concept of Integrated Thinking by examining Integrated Report disclosures that relate to Integrated Thinking in two different institutional settings.

IR provides a framework for the combined disclosure of financial and non-financial information, helping to align investor needs with management goals and to provide appropriate information to facilitate better decision-making (De Villiers & Hsiao, 2017). IR demonstrates how an organisation's use of six 'capitals' (financial, manufactured, intellectual, human, social and relationship, and natural) creates long-term value. IR is based on Integrated Thinking, encouraging internal collaboration and the breakdown of silos (IIRC, 2013a). The dual aim of IR is therefore to align the external reporting and internal decision-making capabilities of a company, helping managers to form a better understanding of their company's purpose, strategic goals, relationships, and future value creation opportunities (De Villiers et al., 2020b).

The International Integrated Reporting Council (IIRC), the main promoter of IR, defines Integrated Thinking as "the active consideration by an organisation of the relationship between its various operating and functional units and the capitals that the organisation uses or affects" (IIRC 2013a, p 2). However, despite the importance placed on Integrated Thinking and its effect on best-practice IR, the IIRC's explanation of Integrated Thinking is vague (IIRC, 2013b), and the

relationship between Integrated Thinking and IR unclear. Although the IIRC assumes that “to have done an Integrated Report, the board would have had to adopt Integrated Thinking” (King, 2015, p.447), evidence shows that IR can be adopted without any underlying changes to business decision-making (Raemaekers, Maroun, & Padia, 2016; Stubbs & Higgins, 2014). There is also evidence of the principles of Integrated Thinking existing without IR (Adams, 2017; Al-Htaybat & Von Alberti-Alhtaybat, 2018). This confusion has led to practitioners and investors developing their own interpretations of Integrated Thinking, possibly influenced by the different institutions and belief systems in different countries (Feng, Cummings, & Tweedie, 2017). This study explores how the concept of Integrated Thinking is addressed in the disclosures of 46 financial services companies in two different institutional settings, South Africa and Japan. In doing so, the paper contributes to the growing literature on Integrated Thinking by investigating how disclosure practices relating to Integrated Thinking have developed in both a mandatory (South African) and a non-mandatory (Japanese) regime. South African listed companies are at the forefront of IR practices, as IR has been mandatory for listed companies in South Africa since 2010. In Japan, there is increasing interest in IR, and many companies have adopted IR voluntarily. In addition, Japanese companies have traditionally had a focus on long-term rather than short-term value creation that aligns well with the goals of IR (KPMG, 2019). To the best of our knowledge, no prior study in this field has focused exclusively on disclosures provided by companies in the financial services sector. The similarity of business models in this sector, combined with similar capital markets and regulation levels in the chosen settings of South Africa and Japan, helps this study to gain insights that a study across a broader section of industries might not. In addition, the narrow industry focus of this study allows for the notion of disclosure mimicry to be explored without distortions arising from different industry reporting norms and practices.

The study shows that there are certain similarities and differences between the ways that Integrated Thinking is reported on in the two settings. A clear finding is that all companies stress

the importance of corporate governance to the success of Integrated Thinking regardless of the institutional setting. In addition, all companies in the sample were focused on being the leader in their industry. This focus on leadership helped to clarify material matters to be reported to stakeholders and also improved the connectivity of information within their Integrated Reports. There were also notable differences between the disclosures. South African companies, having more experience with IR, provide more explicit details about how they embed Integrated Thinking within their organisations, whereas the Japanese companies present varying interpretations of Integrated Thinking in their reports.

The rest of the paper consists of sections dealing with: literature review, methods, findings and supporting statistical analysis, discussion of the results, conclusion and contribution and avenues for future research.

2. LITERATURE REVIEW

2.1 Background on Integrated Reporting

IR provides a concise and holistic report that conveys a company's strategic direction through the combination of financial and non-financial resources, or 'capitals' (De Villiers & Maroun, 2017). The main promoter of IR, the IIRC, was created in 2010 in the wake of the Global Financial Crisis to promote a framework of reporting that required the integration of forward-looking financial and non-financial information (Barth, Cahan, Chen, & Venter, 2017). Currently, IR is only mandatory in South Africa for listed companies on an 'apply or explain' basis, and therefore most Integrated Reports, including those produced in Japan, are produced voluntarily. The benefits of IR adoption (mandatory or voluntary) have been noted in many studies (De Villiers & Hsiao, 2017; De Villiers & van Staden, 2006; Barth et al., 2017). Companies with high levels of IR quality (a potential proxy for Integrated Thinking) outperform companies with low levels of IR quality in both accounting and stock market performance (Lee & Yeo, 2016; Barth et al., 2017; Zhou, Simnett, &

Green, 2017; Plumlee, Brown, Hayes, & Marshall, 2015). However, many of these studies (with the exception of Barth et al., 2017) focus on the benefits of external reporting, rather than the benefits of the internal processes associated with IR, namely Integrated Thinking. The IIRC's goal for IR is not only to change companies' reporting practices, but also to provide a mechanism for the improvement of internal decision making (Feng, Cummings & Tweedie, 2017).

2.2 Integrated Thinking

To successfully adopt IR (as defined by the IIRC), a company should embrace the ideology of Integrated Thinking as IR's underlying logic. Integrated Thinking is associated with breaking down functional silos, increasing communication, and creating strategies linked to the material operations of a company (Giovannoni & Fabietti, 2013), which in turn leads to improved decision making (Köhler & Hoffmann, 2016). Some evidence supports the notion that Integrated Thinking can improve strategic initiatives and enhance cross-functional communication (Barth et al., 2017; Dumay & Dai, 2017), but other studies find no internal benefits associated with IR adoption (Stubbs & Higgins, 2014; Flower, 2015; Raemaekers, Maroun & Padia, 2016).

Integrated Thinking is poorly defined and understood by both academics and practitioners (Feng, Cummings, and Tweedie, 2017). The far-reaching goals of IR have led managers to be confused about how to implement its ideals successfully, let alone begin to develop an understanding of what Integrated Thinking is (Jensen and Berg, 2012). The IIRC (2013a) suggests four aspects of Integrated Thinking that companies need to consider. Firstly, Integrated Thinking should reflect not only the company's use of the six capitals but also the relationships between the capitals. Secondly, this consideration of the capitals and their interaction should be considered in relation to the past, present and planned future activities of the organisation. Thirdly, companies need to consider the material needs of their major stakeholders, and whether they have sufficient capabilities to meet those needs. Finally, a company's business model is central to Integrated

Thinking. Organisations need to structure their business model to address external shifts in their environment and to be able to respond to threats and opportunities.

Despite this rather general guidance, many consider Integrated Thinking to be the ultimate outcome of the IR process. A holistic approach towards company-wide IR, with internal as well as external use of the six capitals for decision-making, should require the connectivity of previously segregated departments and a better flow of information (Haller and Van Staden, 2014; Lodhia, 2015). In a case study of early Australian IR adopters, Feng et al. (2017) identified that despite the lack of clarity provided by the IIRC, Integrated Thinking developed organically among IR participant companies due to the business environment they operated in and their distinctive characteristics. However, Al-Htaybat & Alberti-Alhtaybat (2018) found that the collaborative and deep-thinking culture pre-existent in their case study company enabled the company to adopt IR without needing develop Integrated Thinking concepts further. These studies suggest that IR and Integrated Thinking may not co-exist in the way envisaged by the IIRC, suggesting that both concepts are worthy of independent consideration. As Integrated Thinking is the less well understood of the two concepts, Integrated Thinking is the focus for this study.

2.3 Business Environments in South Africa vs Japan (Similarities and Differences)

In this study, we compare the Integrated Thinking disclosures of financial services companies in South Africa (the only country with mandatory IR) with those of Japan (a voluntary adopter). South Africa is at the forefront of IR quality, acceptance and guidance (Haji & Anifowose, 2016), whereas Japan is relatively new to IR. This paper assumes that the enhanced IR environment in South Africa would lead to a higher development of Integrated Thinking for South African companies relative to their counterparts in other countries, which is borne out in the findings. It also assumes that disclosures specifically relating to Integrated Thinking in Integrated Reports signify the underlying level of Integrated Thinking within the organisations. Of course, disclosures

may not reflect underlying realities, and companies may choose not to disclose information due to a lack of external pressure, internal benefit or a specific need to do so (Stubbs & Higgins, 2014). Nonetheless, the existence of such disclosures suggests an underlying awareness of the importance of Integrated Thinking to the IR process, which is the main focus for this analysis.

In both countries, the financial services industry (banking, investments and insurance) provides significant GDP growth and employment opportunities, representing 20% of South African GDP (Brand South Africa, 2018) and 5% of Japanese GDP (Statistics Japan, 2018). Similarities also exist between the capital markets of both countries. Corporate governance codes and guidelines exist in both countries (King IV in South Africa and the Corporate Governance Code in Japan), creating similar requirements for boards and management. Both countries are democracies with freedom of speech for stakeholders. The finance industry is well regulated, facing similar levels of disruption from technological advances. Both countries place importance on environmental concerns pertaining to the UN Sustainable Development Goals (SDGs) and environmental risks listed in the WEF Global Risks Report (De Villiers, 1999; De Villiers & Vorster, 1995).

However, there are country-specific differences. The unemployment rate in South Africa was 29% in 2019 (Stats SA, 2019), and post-apartheid the South African government has been actively promoting effective corporate governance to reduce the significant social and economic inequalities in the economy (De Villiers, 1998). The overarching King IV codes create coercive pressures for companies in South Africa to adhere to IR concepts (Ince, 2019).

In Japan, over 300 businesses use IR (IIRC, 2019). A survey of Japanese IR practices by KPMG (2019) suggested seven elements necessary for Integrated Thinking: social and environmental outcomes, medium and long-term business environment, important non-financial capital, perception of the organisation's resilience and need for business model reforms, impact that social and environmental outcomes have on economic values, and consideration of value provided to stakeholders in a company's long-term vision. . However, the survey found that only 50% of

Japanese IR practitioners related their strategies to social and environmental impacts, for example, and commitment shown by top management was minimal. Japanese companies face pressures from an aging population, a labour shortage that counters the low unemployment rate of 2.5 % and weak wage growth (The Japan Times, 2019). They may also be affected by different stakeholder pressures due to their economy's heavy reliance on international trade.

2.4 Theories Underpinning the use of IR and Integrated Thinking

The main theories underpinning the voluntary adoption of IR and other types of non-financial reporting include legitimacy theory, agency theory, and institutional theory. If companies adopt IR as a legitimisation tool to validate their activities, this suggests that the internal adoption of Integrated Thinking is less likely (Higgins et al., 2014; Lodhia, 2015). Agency theory is often the lens for IR studies, as it aligns with the intentions of the IIRC by assuming that managers intend to both improve information for stakeholders and change the organisation internally (Jensen & Meckling, 1976). Institutional theory, suggesting that organisational practices are formed by the need to conform to an accepted way of doing things, either through coercion (for example obligatory reporting standards) or through societal pressures, is the focus for this study, however. Institutional theory is suitable here as this study explores the disclosure practices of companies in the same industry but in different institutional settings. Institutional theory allows this study to explore the relationship between South African companies as early mandatory adopters of IR and Japan as subsequent voluntary adopters. This study focuses on the isomorphic forces (coercive, mimetic and normative) created through pressures and changing market trends which affect the structure, policies and practices of companies (De Villiers & Alexander, 2014; DiMaggio & Powell, 1983).

Coercive isomorphism suggests that companies are forced into a course of action (DiMaggio & Powell, 1983). In South Africa, the mandatory IR regime, the volatile political climate, weak

economic growth and high unemployment rates may have resulted in more rapid development of Integrated Thinking disclosure practices (Business Tech, 2018). Japan faces different coercive forces in the form of low wage growth, underperforming banking industries and growing concerns regarding work-life balance and the ability for employment growth with an aging community (Takeo & Dormido, 2019). Growing pressure from NGOs such as Greenpeace could also affect Integrated Thinking disclosures in both countries. Mimetic forces relate to companies benchmarking or copying the practices of industry leaders. Larger multinational companies in Japan and South Africa could benchmark their Integrated Thinking disclosures to those of their peers, while smaller companies could follow the reporting practices of larger companies (De Villiers & Alexander, 2014). Finally, normative isomorphism occurs when companies internalise practices and policies that are derived from the professionalisation of a field. For example, practitioners of IR in South Africa and Japan could seek strategic impact through disclosing how SDGs could affect long term strategic initiatives (KPMG, 2018), and awards for best practice IR in South Africa could lead to a more refined understanding of Integrated Thinking in that setting. As there are different potential forces and motivations to adopt Integrated Thinking between the two countries, the paper explores the following

Research question: *What are the similarities and differences in the Integrated Thinking disclosures of companies in Japan and South Africa, and why might these exist?*

3. METHOD

Content analysis of a matched sample of Integrated Reports produced in South Africa and Japan was conducted to compare the similarities and differences between Integrated Thinking disclosures. Content analysis of the narrative disclosures in Integrated Reports is more likely to indicate the ‘soft’ qualitative factors associated with Integrated Thinking (Oliver et al., 2016), and critical analysis of the language used in Integrated Reports could therefore help to develop a deeper

understanding of Integrated Thinking (Higgins, Stubbs & Love, 2014). To isolate the country-specific pressures in each environment, and in order to consider the potential for mimicry, other factors were kept comparable in our sample selection where possible (De Villiers & Alexander, 2014) as discussed later. A list of South African companies was collected from the Johannesburg Stock Exchange (JSE) listings, with any company not publishing an Integrated Report removed from the final sample, leaving an initial sample of 347 South African companies. A 2018 KPMG survey listed 400 Japanese companies as undertaking IR. Unlisted companies, dual listed and merged companies were removed, to ensure comparability with the South African data, which left an initial sample of 388 Japanese companies.

The two samples were matched by size (market capitalisation converted to US\$) and industry to account for the impacts of the two factors on the quality of IR and the likelihood to disclose voluntary information (Alrazi, De Villiers & van Staden, 2015). The financial services sector yielded the most closely matched companies (23 from each country). The unique compensation structures, business environments and operational impacts in the financial services sector provides a unique base to compare the Integrated Thinking disclosures between the two countries, and to our knowledge no prior study has focused on the IR disclosures made by companies in this sector. Focuses on the unique sector of financial services also reduces the possibility of industry differences driving the types of disclosure used in the Integrated Reports.

Integrated Reports for the 2018 financial year were analysed by hand for evidence of the nine essential elements of Integrated Thinking identified by prior literature (Feng et al., 2017; Al-Htaybat & Alberti-Alhtaybat, 2018) and from key guidelines provided by the IIRC (IIRC, 2013a)¹, namely: Board involvement (BI), Middle management involvement (MI), Departmental involvement (DI), Committees (CC), Business model linkage (BM), Past, present and future commitment (PPF), Key stakeholders (KS), Materiality assessment (MA) and Integrated Thinking

¹ See Appendix for more detail.

(Integrated Thinking). In addition to these nine, the market capitalisation for each company, the total number of capitals mentioned (CA), and the page count (PC) for each report was captured. Page counts were conducted as lengthy reports can be used to either obfuscate or inform (Cho, Roberts & Patten, 2010).

The implication of company-wide commitment to the successful integration of IR reporting norms and policies within the company is captured through the variables ‘board involvement’ (**BI**), ‘middle management involvement’ (**MMI**) and ‘departmental involvement’ (**DI**). The level of board commitment to the Integrated Thinking process is vital (Feng et al., 2017; De Villiers et al., 2017), as is management commitment towards achieving long term strategies, mitigating key risks, meeting stakeholder needs and achieving organisational-wide connection (Busco et al., 2019). The ability of a company to achieve key objectives using the capitals fundamental to their operations, and to consider short-term and long-term impacts are measured through the variables ‘committee count’ (**CC**), ‘business model linkage’ (**BM**) and ‘past, present and future commitment’ (**PPF**). Thirdly, the importance of materiality was measured through the variables ‘key stakeholders’ (**KS**) and ‘materiality assessment’ (**MA**). Lastly, *Integrated Thinking* captures explicit disclosures of the term ‘*integrated thinking*’.

The sample of reports was reviewed manually for the existence of these nine elements, with the data captured and analysed using Excel software. Company website data was also reviewed for evidence of the nine elements. Some of the nine variables are continuous variables which capture the number of mentions of particular words or phrases as a proportion of word count, whereas others are indicator measures for the existence of the element. Table 1 shows the results of this initial analysis. A more detailed explanation of the nine variables and how they are coded is provided in Appendix 1.

In addition, we looked for evidence of normative, coercive or mimetic forces when comparing disclosures from the two countries. We also made general observations when analysing the data

that did not relate directly to the nine variables, such as the repeat mentions of the pursuit of an industry leadership position. Section 4 presents an in-depth discussion of our findings.

4. RESULTS

In this section, general similarities and differences between the two country subsamples are introduced. Table 1 shows the content analysis elements for each company, Table 2 presents summary statistics for each of the two subsamples, and Table 3 provides the statistical tests comparing the two subsamples.

4.1 Similarities and differences between countries

4.1.1 Similarities

Several similarities can be observed between the Integrated Reports produced in South Africa and Japan, as shown in Tables 1 and 2, particularly for the large companies in the sample. The largest companies in both countries have similar report lengths, formats and linkages between capitals, strategies and stakeholder satisfaction. Table 2 shows that the companies in the upper quartile of the sample (in both countries) score a value of 1 for measures of business model representation, board and management commitment and materiality assessments, representing a strong understanding of the aspects of integration and the instillation of these beliefs to the entire organisation².

Three out of the top 10 best Integrated Reports in South Africa, as graded by Ernest & Young (EY), are for financial companies (refer to Table 1). Their disclosure practices include the use of infographics, which signal connections between the capitals and their usage in the value creation

² See Appendix for further details of how variable scores are calculated.

process. Infographics are also seen among the larger Japanese companies (e.g. Tokyo Century Corporation, Seven Bank Ltd). Most companies from both countries emphasise the importance and materiality of financial, human, intellectual and social and relationship capital to the achievement of company initiatives (Table 1). Financial companies create value for their stakeholders through innovative uses of their financial capital to increase clients' investments, savings and to manage risks. The importance of human and intellectual capital to these companies is demonstrated through the emphasis placed on training employees to improve their skills and capabilities, ensuring employee alignment with the company's long-term goals. For example, Alexander Forbes, a South African investment and insurance company, discloses how they are committed to developing employee skills and motivation towards achieving the goal of helping clients "achieve a lifetime of financial wellbeing and security" (Alexander Forbes, 2018, p. 24). The company discloses their initiatives in guiding employees through the IR process, such as the use of strategy workshops, refresher courses and managerial market updates. Other similarities include the level of board commitment towards developing Integrated Thinking (relatively high, with the South African score being, on average, 10% higher) and the provision of linkages between business models and long-term strategies. The Integrated Reports also have a high mean score of 0.95 and 0.85 (for the South African and Japanese reports, respectively) regarding the inclusion of material matters to address material risks and changing market environments.

4.1.2 Key Differences:

Table 3 indicates that the results for the variables relating to Capital Count, Key Stakeholders, Middle Management, Integrated Thinking Sentence Count and Page Count are all statistically different.

Japanese companies are more likely to disclose the importance of the six capitals compared to South African companies. The p-value for the difference in the mean of **CA** is statistically

significant³. The cumulative use of implicit links and connectivity between capitals, business models and strategies among Japanese companies shows that IR practices may still be developing in Japan, and the voluntary regime may result in Integrated Reports with varying levels of informativeness to stakeholders.

Key Stakeholders (*KS*) are mentioned significantly more in South African reports than in Japanese ones. As this variable is based on total word counts, this may reflect a better understanding by South African companies of their key stakeholders based on experience. It may also indicate that South African company peers influence each other with their disclosures.

The p-value for the difference in the mean of mentions of Middle Management (*MM*) is also significant, indicating that Japanese companies mention the involvement of middle management more. It is unclear whether this difference relates to the different institutional setting, and possibly different cultural norms, or whether it reflects a difference in internal organisational responsibility for Integrated Thinking. Alternatively it may also reflect a deeper embedding of Integrated Thinking through all levels of management in South Africa.

The results for the *ITS* variable show that Japanese companies have less explicit disclosures of Integrated Thinking and its links to strategy and value creation (only 22%, compared to 65% of the South African companies). This suggests that the South African companies may be more experienced with IR and therefore more able to articulate their knowledge of Integrated Thinking through the use of specific disclosures.

Another key difference observed between the Integrated Reports of both countries is their length (reflected by the *PC* variable) The South African Integrated Reports are, on average, longer and more comprehensive (55 pages longer) than those provided by Japanese companies. The use of

³ Refer to Table 3

lengthy reports and/or sophisticated language features can indicate either obfuscation or informativeness (Cho et al., 2010). The management of the larger South African companies provides in-depth explanations regarding the affairs of their corporate governance, risk management plans and their approach towards addressing significant social issues influencing the South African environment, supporting an informativeness hypothesis. However, even though the smaller South African companies still provide lengthy reports (an average of 35 pages longer than their Japanese equivalents), the additional pages frequently involve large amounts of financial data or address issues that are not as material to their operations.

Japanese companies' Integrated Reports are shorter in length, but in general are more informative regardless of company size, consistent with the conciseness concept which is an important feature of IR. Even the smaller Japanese financial companies in the sample provide material information about their operations and how they deal with change. For example, Shiga Bank provides disclosures about how they deal with risks and opportunities through a business plan centred around shared value, despite having a market capitalisation below the lower quartile of the sample (Shiga Bank, 2018). Although the Japanese reports are concise, they often lack an in-depth commentary on corporate governance goals and the link of remuneration structures to long term strategies. South African companies are twice as likely as Japanese companies to explicitly mention their approach to dealing with Integrated Thinking, whereas Japanese companies are more implicit in their approach to disclosing Integrated Thinking, and often use different terminology for Integrated Thinking (this is discussed further in section 5d).

Table 1: Results from Content Analysis
Panel A: South African Companies

	Market Cap	CA	Capitals	KS	BM	PPF	BI	CC	MM	DTC	M	ITS	PC
Quilter PLC	\$ 2,986,892,881	2	F, I.	20	1	1	0.5	5	0	0	1	0	212
Investec limited*	\$ 4,882,235,529	6	All 6 capitals.	32	1	1	1	9	1	1	1	0	276
Nedbank group Ltd*	\$ 7,348,636,061	6	All 6 capitals.	90	1	1	1	8	1	1	1	0	100
Transaction capital	\$ 907,784,431	6	All 6 capitals.	47	1	1	1	5	1	1	1	1	154
Santam Ltd	\$ 2,149,900,200	6	All 6 capitals.	59	1	1	1	6	1	1	1	4	160
Coronation fund managers	\$ 900,931,470	4	I, H, F, S&R.	44	1	1	1	3	0.5	0.5	1	4	100
JSE limited	\$ 736,859,614	6	All 6 capitals.	40	1	1	0.5	5	0.5	1	1	4	65
ABSA bank Ltd*	\$ 8,529,407,851	6	All 6 capitals.	71	1	1	1	18	1	1	1	2	90
Firststrand Integrated Report	\$ 23,430,738,523	4	I, H, F, S&R.	40	0.5	1	1	7	0.5	1	0.5	5	250
TGH*	\$ 775,848,303	6	All 6 capitals.	72	1	1	1	3	1	1	1	2	206
Discovery Limited*	\$ 5,116,101,131	6	All 6 capitals.	13	1	1	1	5	1	1	1	1	184
Brait	\$ 587,691,284	3	H, F, S&R.	21	0.5	1	0.5	4	0.5	0.5	1	0	144
Alexander Forbes*	\$ 505,522,289	4	F, H, I, S.	22	1	1	1	7	1	1	1	0	116
Standard Bank Group*	\$ 18,430,605,456	6	All 6 capitals.	57	1	1	1	7	1	1	1	19	108
Capitec bank	\$ 10,278,176,979	4	H, I, S&R, F.	51	1	1	1	7	1	0.5	1	1	127
Remgro ltd	\$ 6,060,944,777	5	I, R&S, M, E, F.	60	0.5	1	1	10	1	1	1	1	148
RMI	\$ 2,965,801,730	6	All 6 capitals.	37	1	1	1	5	1	1	1	2	123
Reinet Investments	\$ 3,480,771,790	3	F, H, I.	7	0	1	0	3	0.5	0	0	0	84
Sanlam Ltd *	\$ 11,663,672,655	3	F, H, I.	107	1	1	1	12	1	1	1	7	252
RMB Holdings	\$ 7,200,332,668	5	F, H, I, S&R, N.	29	1	1	0.5	5	1	0.5	1	2	142
Liberty Holdings Limited	\$ 2,179,773,785.76	6	All 6 capitals.	75	1	0.5	1	9	1	1	1	1	92
Trematon Capital Investm. Ltd	\$ 709,580,838.32	3	F, H, S&R.	17	0.5	0.5	0.5	4	1	1	1	0	118
Old Mutual Limited	\$ 6,199,733,866	6	All 6 capitals.	62	1	1	1	7	0.5	1	1	0	105

Table 1, Panel A: This table provides the results of the manual content analysis of the nine metrics used to evaluate the level of Integrated Thinking disclosures for the 23 South African companies. See Appendix for variable definitions. Highlighted sections relate to companies that implicitly mention capital linkages. * indicates the Integrated Reports of highest quality according to the EY Excellence in reporting rankings.

Table 1: Results from Content Analysis**Panel B: Japanese Companies**

	Market Cap	CA	Capitals	KS	BM	PPF	BI	CC	MM	DTC	M	ITS	PC
Aeon Ltd	\$ 3,156,544,503	4	F, H, N, I.	11	1	1	1	3	0.25	1	1	0	104
Concordia	\$ 4,704,833,583	3	N, H, I.	4	0	1	1	3	1	1	1	0	69
Daiwa Securities group Inc *	\$ 7,739,033,283	3	F, H, S&R.	37	1	1	1	8	1	1	1	0	224
Funai Soken holdings Ltd	\$ 1,230,357,143	3	F, H, I.	3	1	1	0	3	1	0	0	0	25
Fuyo lease group	\$ 1,857,591,623	3	F, H, I.	17	1	1	0.5	3	1	0.5	1	0	49
IBJ Leasing co Ltd	\$ 1,334,246,447	2	F, H.	16	1	1	0.5	7	1	1	0.5	0	44
Shiga the bank*	\$ 1,223,513,463	6	All 6 capitals.	15	1	1	0.5	3	0.5	1	0.5	0	95
JPX Ltd	\$ 8,579,814,884	4	H, S&R, P, F.	17	1	1	1	5	0.5	1	1	3	86
Japan Post Bank Ltd	\$ 43,249,813,014	6	All 6 capitals.	8	1	1	1	8	1	1	1	5	176
Okasan securities Ltd	\$ 728,047,868	4	I, H, F, S&R.	2	0.5	1	0.5	3	1	0.5	0.5	0	64
Mitsubishi UFG*	\$ 5,318,390,052	4	I, H, F, S&R.	13	1	1	0.5	5	1	1	1	2	51
Monex group	\$ 639,912,117	4	I, H, F, S&R.	10	1	1	0.5	4	1	1	0.5	0	70
NEC Capital Solutions Ltd	\$ 436,265,894	3	F, H, S&R.	16	1	1	1	5	1	0.5	1	0	64
Nomura Report *	\$ 15,089,753,179	5	H, I, F, S&R, M.	24	1	1	1	3	1	1	1	0	98
Resona Bank	\$ 9,648,466,717	4	S&R, H, I, F.	6	1	1	0.5	4	0.5	1	1	0	63
SBI Holdings Inc/Japan	\$ 4,892,137,248	3	H, S&R, F.	5	0.5	1	0.5	3	0.5	1	1	0	106
Seven bank Ltd*	\$ 3,274,111,818	5	H, S&R, E, F, I.	5	1	1	1	7	1	0.5	1	2	120
Shinsei bank *	\$ 3,682,526,178	4	I, H, F, S&R.	14	1	1	1	10	1	1	1	3	90
Sompo Holdings Ltd *	\$ 14,659,685,864	3	F, I, H	19	1	1	1	5	1	1	1	0	184
T&D Holdings	\$ 6,996,428,571	4	F, H, I, S&R.	6	1	1	1	9	0.5	1	1	0	156
Hachijuni Bank Ltd/The	\$ 2,112,079,282	2	F, H.	4	0	0.5	0.5	2	0	0	0.5	0	34
Tokai Tokyo Fin. Holdings Inc	\$ 706,516,455	4	H, I, S&R, F.	11	1	1	1	4	1	1	1	0	56
Tokyo Century Corp	\$ 4,889,622,289	5	H, S&R, E, F, I.	10	1	1	1	4	1	1	1	0	119

Table 1, Panel B: Results for the content analysis of the 23 Integrated Reports provided by the Japanese Financial Companies. Refer to Appendix for variable definitions and long form of capitals. Highlighted sections relate to companies that implicitly mention the capital linkage. * indicates the Integrated Reports of highest quality.

Table 2: Summary Statistics**Panel A: South African Integrated Reports**

Variables	Obs.	Mean	Std Dev	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
Market Capitalisation (\$ millions)	23	5566.43	5895.23	505.52	900.93	3480.77	7348.64	23430.74
Capital Count (CA)	23	4.8696	1.3586	2	4	6	6	6
Key stakeholders (KS)	23	46.6522	25.6968	7	22	44	62	107
Business Model (BM)	23	0.8696	0.2704	0	1	1	1	1
Past, Present and Future (PPF)	23	0.9565	0.1441	0.5	1	1	1	1
Board Involvement (BI)	23	0.8478	0.2794	0	0.5	1	1	1
Committee Count (CC)	23	0.8261	0.2864	0	0.5	1	1	1
Middle Management (MM)	23	6.6957	3.3903	3	5	6	8	18
Departments to Contribute (DTC)	23	0.8261	0.3236	0	0.5	1	1	1
Materiality (M)	22	0.9545	0.2132	0	1	1	1	1
Integrated Thinking Sentence Count (ITS)	23	2.4348	4.0880	0	0	1	4	19
Page Count (PC)	23	145.9130	58.3967	65	100	127	184	276

Panel B: Japanese Integrated Reports

Variables	Obs.	Mean	Std Dev	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
Market Capitalisation (\$ millions)	23	6354.33	9062.55	436.27	1230.36	3682.53	7739.03	43249.81
Capital Count (CA)	23	3.8261	1.0725	2	3	4	4	6
Key stakeholders (KS)	23	11.8696	8.0301	2	5	11	16	37
Business Model (BM)	23	0.8696	0.3096	0	1	1	1	1
Past, Present and Future (PPF)	23	0.9783	0.1043	0.5	1	1	1	1
Board Involvement (BI)	23	0.7609	0.2966	0	0.5	1	1	1
Committee Count (CC)	23	0.8043	0.3282	0	0.5	1	1	1
Middle Management (MM)	23	4.8261	2.2493	2	3	4	7	10
Departments To Contribute (DTC)	23	0.8261	0.3236	0	0.5	1	1	1
Materiality (M)	23	0.8478	0.2794	0	0.5	1	1	1
Integrated Thinking Sentence Count (ITS)	23	0.6522	1.3688	0	0	0	0	5
Page Count (PC)	23	93.3478	51.0531	25	56	86	119	224

Table 3: T-Test Results

Variables	T Value	P value
Market Capitalisation	-0.35	0.7286
Capital Count (CA)	2.89	0.0059*
Key stakeholders (KS)	6.2	<.0001*
Business Model (BM)	0	1
Past, Present and Future (PPF)	-0.59	0.5607
Board Involvement (BI)	1.02	0.3117
Committee Count (CC)	0.24	0.8119
Middle Management (MM)	2.2	0.0328*
Departments To Contribute (DTC)	0	1
Materiality (M)	1.44	0.1584
Integrated Thinking Sentence Count (ITS)	1.98	0.0577**
Page Count (PC)	3.25	0.0022*

Table 3: Results of the T-Test done between the variables between the South African and Japanese subsamples. * and ** represent 5% and 10% level of significance respectively. Capital Count, Key Stakeholders, Middle Management and Integrated Thinking Sentence Count and Page Count are statistically different at the conventional levels.

5. DISCUSSION

In this section, we analyse the themes that emerge from the analysis of the similarities and differences between the sub-samples and discuss the potential reasons. The themes that emerge are the links between Integrated Thinking disclosures and corporate governance, the link between the disclosures and the pursuit of an industry leadership position, and the centrality of the materiality process to Integrated Thinking. At the end of the section we discuss how isomorphic forces appear to have contributed to these similarities and differences.

5.1 Theme 1: The Importance of Corporate Governance

The small T-values for Board Involvement (BI) and Committees (CC) in Table 3 indicate the similarities between the two samples in terms of their corporate governance processes and disclosures, suggesting that Integrated Thinking is closely related to corporate governance practices. Integrated Reports produced in both Japan and South Africa stress the importance of corporate governance in their IR process, in particular management commitment to a culture

centred around Integrated Thinking. For example, the South African bank Nedbank Ltd provides disclosures of how the board and management work together by having a deep-rooted culture embedded from the top-down through continuous development and training. Aeon Ltd, a Japanese company, provides disclosures suggesting that their management philosophy is embedded in principles of Integrated Thinking and how ‘corporate governance must be made an integral part of day-to-day operations’, disseminating from the top down (Aeon Ltd, 2018). Low engagement levels of employees with IR practices is considered a major impediment to Integrated Thinking, especially in larger organisations (Feng et al. 2017; Al-Htaybat & Alberti-Alhtaybat, 2018; Oliver, Vesty & Brooks, 2016). Low engagement can be due to a lack of sufficient training in Integrated Thinking, and/or a lack of senior management commitment. However, the reports analysed in this study provide evidence showing that the board and management’s commitment to Integrated Thinking develops over time, with earlier adopters showing a deeper understanding of its importance.

Integrated Reports by South African companies are more likely to disclose managerial approaches to risk management, compensation plan development, stakeholder needs and organisational change. For example, Trustco Holdings (TGH) in South Africa open their corporate governance discussions by stating, “The culture of good governance and ethical behaviour is moulded into the ethos of the company” (Trustco Group, 2018, pg. 20). The management at TGH displays an understanding of Integrated Thinking by utilising ‘different platforms and distribution systems’ to communicate the values of IR to people both within and outside the organisation, to express their commitment to changing practices. Social and ethics committees of TGH are tasked with ethical leadership, stakeholder inclusivity, and establishing social and cultural norms. Most of the South African Integrated Reports provide descriptive detail about how management remuneration policies are tied to the achievement of short-term, medium-term and long-term goals. RMI

Holdings uses share appreciation rights to incentivise the board and top-level management to focus on the long-term outlook for a company as well as the achievement of current goals.

Japanese companies on average provide less detail around how management and board remuneration policies relate to the accomplishment of Integrated Thinking goals. However, most Japanese Integrated Reports provide a specific section reporting a discussion between external directors and the CEO and high-level management, indicative of Integrated Thinking. For example, the discussion held between the CEO and an external director of Shinsei Group provided insights on how the company aspired to be a pioneer of change in the Japanese economy by embracing the disruption of technological advances through the use of ideas surrounding co-creation.

Therefore, although South African companies provide more informative disclosures regarding the interdependencies of corporate governance and commitment from the top, Japanese company management showcases unique expressions of how they understand and convey their commitment to the Integrated Thinking process. This suggests that mimetic forces combined with factors specific to certain institutional environments influence the nature of Integrated Thinking interpretation within organisations.

5.2 Theme 2: Goal of Industry Leadership

All of the companies in the sample disclosed the underlying goal of being an industry leader, and of creating long-term value for company stakeholders with this ultimate goal in mind. For example, for Aeon Ltd to achieve their goal of being the “most customer-oriented ecosystem in Asia by 2025”, the management team and board emphasise the importance of connectivity between its mission, stakeholder needs and the existent company culture (Aeon Financial Services Ltd, 2018, p. 13). Having this overarching goal helped to improve the connectivity of information provided in the reports. The IIRC defines connectivity as “...a holistic picture of the combination,

interrelatedness and dependencies between the factors that affect the organisation's ability to create value over time." (IIRC, 2013a, pg. 2). The emphasis on connectivity is apparent in the reports of both countries, they differ only in terms of their expression. Japanese Integrated Reports are more likely to disclose implicit evidence of connectivity with strategy, such as having sections explaining the company initiatives to build on the interdependencies between different business functions. South African companies are more explicit in their use of terminology, diagrams and iconography to link different principles of IR with their purpose of becoming an industry leader. For example, both Sanlam Ltd and Nedbank Ltd use iconography in each section of their reports to show which core functions are materially related to which goal of the company at various stages of their strategy development. It could be argued that this evidence presents more connectivity among South African companies. However, because of the mainstream development of IR in the mandatory South African setting (since 2010), one would expect South African companies to have developed better presentations in their reports compared to Japanese companies. The essence of connectivity is reported by companies in both countries, but they differ in terms of their presentation. Consistent with the KPMG (2018) survey of IR practices in Japan, Japanese companies are relatively proficient at establishing their long-term goals and strategies and linking them to their value creation process (see Table 2, Panel A). They still fall behind the strategy and value creation disclosures of the South African companies. However, 89% of Japanese IR practitioners link KPIs with strategy performance, and 75% of them link it to performance in the short and long term (KPMG, 2018).

5.3 Theme 3: The Centrality of Materiality for Integrated Thinking

The mean score for materiality (MA) is 0.897 across the sample of 46 companies⁴, which displays a high level of company commitment to disclosing information that has a material impact on the company's major stakeholders. There is also considerable similarity between the two samples in terms of materiality. This was particularly evident in the disclosure of strategic business plans, which focused on material issues facing the organisations. In Japan, the material issues addressed relate to the declining birth rates and workforce population, the impacts of disruptive technology and certain environmental factors. In South Africa, the issues discussed were more related to workplace diversity, social equality and environmental factors. Both Japanese and South African Integrated Reports also linked material business concerns and initiatives with achievements relating to SDGs. This could either be indicative of improved connectivity or could suggest that Integrated Thinking development remains affected by the heavy linkage between IR and sustainability reporting (Stubbs & Higgins, 2014).

When analysing the underlying components of *MA*, South African Integrated Reports explicitly mention stakeholder needs and how they address them more frequently than Japanese Integrated Reports. For example, Investec Ltd discloses how they incorporate vital ESG factors with their material investment and ethical guidelines when discussing the functions of their salient business segments. Japanese Integrated Reports are more implicit in their suggestions of how materiality fits in with their IR process. After a thorough review of these reports, it appears that this observation is not due to a lack of understanding by the Japanese companies of Integrated Thinking principles, but rather is due to the relative novelty of IR practice in Japan.

Integrated Reports from both countries reference materiality when disclosing their approaches to risk management, with disclosures relating to sustainable business, risks associated with finance

⁴ According to Table 2, the mean materiality score is similar for both countries, 0.848 for Japanese and 0.955 for South African companies, and Table 3 shows the difference is not significant.

diversification, and declining economic growth, for example. Japanese companies which explicitly mention materiality are also larger, which indicates potential mimetic forces at play. The results obtained here support the findings of Feng et al. (2017), who found that broad-brush reporting on all matters, regardless of their materiality, was not a good indication of Integrated Thinking and IR principles and could be an attempt at obfuscation.

5.4 Theme 4: Different interpretations of Integrated Thinking in different settings

A concern raised by prior research on Integrated Thinking is that it could be expressed in different forms and practices in different environments (Oliver et al., 2016; Stubbs & Higgins, 2014). The results of this study show less explicit disclosure of Integrated Thinking and its links to strategy and value creation for the Japanese companies (only 22%, compared to 65% of the South African companies). This suggests that the South African participants, with their longstanding use and experience of IR, may be better equipped to demonstrate their implicit knowledge of Integrated Thinking through the use of explicit disclosures. However, this initial analysis may be misleading. Japanese companies use different terminologies when describing the processes in which they integrate their capitals, such as ‘diverse thinking’, ‘innovative thinking’, ‘collaborative thinking’, ‘free and creative thinking’, ‘long-term thinking’ and ‘group thinking’, and many of these terms relate to the concept of interconnectedness that is central to Integrated Thinking. For example, Seven Bank Ltd discloses how ‘diverse thinking’ is embedded in the company culture to help all organisational members understand and address the key concerns facing Japanese society through a strategic shift towards ‘co-creation’. This notion is addressed by top management at the company as well, whereby “open-minded discussions are encouraged... creating a corporate culture that can pursue challenges” (Seven Bank Ltd, 2018). Companies which don’t emphasise their shift to a new way of thinking in their Integrated Reports still highlight how the company connects the various business segments into a collaborative thinking unit. Shinsei Bank provides no direct reference to a new way of thinking, however, throughout their report, the linkage is made towards achieving

business model growth by delivering sustainable value in both the short-term, medium-term and long-term. Though Integrated Thinking is not explicitly identified, it is implied through their value creation process disclosures.

The Integrated Reports which mention Integrated Thinking explicitly also score, on average, higher on the other nine key measures of Integrated Thinking used in this study. For instance, TGH Ltd's Integrated Report explicitly links Integrated Thinking within the company to the achievement of long-term sustainable value for the company. TGH Ltd have one of the most in-depth governance commitment disclosures in the sample, and their enhanced understanding of Integrated Thinking resulted in a shorter, more informative report. This suggests that Integrated Thinking can be developed internally to be an integral part of a system and culture without explicit guidance (Feng et al., 2017).

The similarities between the largest companies of both countries suggests normative or mimetic forces, supporting similar findings by De Villiers & Alexander (2014) for large mining companies in Australia and South Africa, but related to sustainability disclosures. The findings suggest that the largest companies in Japan identify what they assume to be 'best practice' among the largest South African companies and incorporate these practices in their own Integrated Reports, with South Africa the leader in best practice. However, even though the smaller South African companies still provide lengthy reports (an average of 35 pages longer than their Japanese equivalents), the additional pages frequently involve large amounts of financial data or address issues that are not as material to their operations. This suggests mimetic forces whereby the smaller companies copy best practice disclosures of the larger companies (De Villiers & Alexander, 2014), regardless of their informativeness.

6. CONCLUSION, CONTRIBUTION, LIMITATIONS AND FUTURE RESEARCH AVENUES

6.1 Summary

Prior studies and the IIRC suggest Integrated Thinking is the desired outcome of the IR process (Busco et al., 2019; Feng et al., 2017; Barth et al., 2017), yet the IIRC fails to provide much guidance on how to achieve this ideal level of integrated decision-making in practice (Feng et al., 2017). This study reviews disclosures linked to Integrated Thinking in Integrated Reports produced by a sample of 46 financial services companies in Japan and South Africa (23 reports from each country). In doing so, the paper contributes to a more nuanced understanding of how Integrated Thinking is conceptualised in different settings.

The study has four key takeaway messages. Firstly, the significance of corporate governance for Integrated Thinking is notable in all companies, indicative of the importance of the ‘tone at the top’ for the success of Integrated Thinking. Secondly, evidence of the ‘connectedness’ of information central to Integrated Thinking was shown through a focus on industry leadership and the importance of a sound understanding of the materiality concept. Another significant finding of this study is the observation that Integrated Thinking has developed under different conceptualisations in Japan, consistent with prior research regarding the adaptability of the Integrated Thinking process (e.g. Oliver et al., 2016; Stubbs & Higgins, 2014). Japanese companies are more implicit in their implementation of the Integrated Thinking process within their reports whereas South African reports are more explicit in disclosing how Integrated Thinking is represented in their operations. The IIRC and regulators may need to consider the fluid nature and interpretation of Integrated Thinking when providing guidance around IR implementation. Finally, evidence of disclosure mimicry suggests that it is important to continue to study early adopters of IR, due to their potential influence on the field.

6.2 Contribution

This study contributes to both research and practice in several ways. The similarities in both settings contribute to an improved understanding of Integrated Thinking disclosure practice, and influences on it. Integrated Thinking, regardless of the institutional setting, is associated with a strong focus on corporate governance, an organisation-wide commitment to accepting change, an appreciation of material matters and how interdependencies affect the strategic direction and value creation of a company. South African companies have a higher level of understanding and disclosure of Integrated Thinking, whereas the lack of mandatory requirements for IR in Japan has resulted in more variation in terms of their conceptualisation of Integrated Thinking. Importantly, this study also shows evidence of mimicry in disclosures, showing how early adopters can be influential the development of a field.

This study also finds that the concept of Integrated Thinking is idiosyncratic, with conceptualisations of Integrated Thinking contrasting in the two different settings. This suggests that in the absence of clear guidance on Integrated Thinking, companies will choose to self-interpret, following the findings of Feng et al. (2017). This is not necessarily problematic, as the IIRC allows for differing interpretations of IR. It does, however, indicate that future research into Integrated Thinking needs to acknowledge the existence of these differing interpretations, particularly outside a mandatory environment.

The findings of this study will be useful for practitioners considering the adoption of IR in illustrating the centrality of corporate governance and materiality to Integrated Thinking regardless of institutional setting. The study also highlights the flexibility of the interpretation of Integrated Thinking principles and the opportunity to align these with other managerial movements such as 'diverse thinking'. In addition, the IIRC and regulators may need to consider differing interpretations of Integrated Thinking when providing guidance around IR implementation.

6.3 Limitations

The sample size for this study is relatively small, considers a single financial year (2018) and only compares two different cultural contexts. In addition, the findings only relate to the financial services sector, and although this helps the paper's contribution in some ways it limits its generalisability. The self-constructed content analysis system used to evaluate Integrated Thinking within Integrated Reports may also not represent all the elements of Integrated Thinking, however, the variables used do align with the key elements of Integrated Thinking discussed in the prior literature and by the IIRC.

6.4 Future research avenues

The findings from this study suggest that extensions into other industries and other markets in the world would be beneficial, to see if the findings hold across a variety of institutional settings. The consequences of Integrated Thinking disclosures such as impacts on corporate governance and investor reactions (cumulative abnormal returns, company value, liquidity, etc.) could also be explored using this methodology, as could extensions to the linguistic analysis, including analysis of the tone of disclosures. Exploring differing interpretations of Integrated Thinking across different industries and countries would also help to gain a deeper understanding of its key characteristics.

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Appendix: Variable Definitions

Variables provided by the IIRC	About	Measurement
Capitals (CA)	How an organization uses, affects and makes trade-offs in relation to the six categories of capitals (financial (F); manufacturing (M); human (H); social and relationship (S&R); intellectual (I) and natural capital(N)).	Indicator variable providing the explicit mentions of which capitals are used
Key Stakeholders (KS)	Clear analysis of the organizations' capacity to respond to the legitimate needs and interests of key stakeholders (including shareholders).	Continuous variable of the word count of 'Key stakeholders' or 'major stakeholders'.
Business model (BM)	How an organization structures its business model and strategy to deal with challenges from its external environment, including the risks and opportunities it faces.	Indicator variable equivalent to 1 if the IR mentions high linkage to the company's business model, 0.5 for medium linkage and 0 otherwise.
Past, present and future commitment (PPF)	The past, present and future activities, performances and outcomes in relation to the six capitals.	Indicator variable equivalent to 1 if the IR mentions high linkage to the company's strategies, 0.5 for medium linkage and 0 otherwise.
Variables provided from prior literature		
Board involvement (BI)	The involvement of the board in achieving the key short term, medium term and long-term strategies of the company and the level of commitment they have to integrated thinking	Indicator variable equivalent to 1 for heavy involvement, 0.5 for high involvement and 0 for low involvement.
Middle management involvement (MMI)	Middle management and their commitment to ensuring commitment to company ideals, and the facilitation of organization-wide communication across the silos.	Indicator variable equivalent to 1 for heavy involvement, 0.5 for high involvement and 0 for low involvement.
Departmental involvement (DI)	Participation by the various departments in the IT and IR process.	Indicator variable equivalent to 1 for heavy involvement, 0.5 for high involvement and 0 for low involvement.
Materiality (MA)	The centrality of the materiality process to integrated thinking in practice (low representation: use of materiality only in the financial sections). This score helps to capture three key aspects of materiality; the addressment of key stakeholder needs, the emphasis on why certain capitals are used over others and explicit disclosure sections addressing the materiality aspect for both qualitative and quantitative sections of the report	Indicator variable equivalent to 1 for heavy representation, 0.5 for high representation and 0 for low representation.
Integrated thinking (ITC)	The explicit mention of a company's commitment or implementation of IT practices in the company. Includes other terms such as connectivity, linkage or mentions of a new way of thinking involving cross-functional collaboration.	Continuous variable of the word count of 'integrated thinking' or similar terminology.