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Disclosing value creation in integrated reports according to the six capitals: a holistic approach for a holistic instrument

Giacomo Pigatto, Lino Cinquini and Andrea Tenucci
Institute of Management, Sant'Anna School of Advanced Studies, Pisa, Italy, and
John Dumay
Department of Accounting and Corporate Governance, Macquarie University, Sydney, Australia; Nyenrode Business Universiteit, Breukelen, The Netherlands and Aalborg University Business School, Aalborg, Denmark

Abstract

Purpose – This study is an analysis that aims to understand the rationale behind the concept of value creation contained in the integrated reporting (IR) framework. As such, the authors examined the quality of the disclosures made in integrated reports by measuring the level to which the six capitals (6Cs) have been integrated into disclosures on value creation.

Design/methodology/approach – The IR framework's value creation model focuses on six content elements and three guiding principles. Hence, the present analysis combines content analysis with quantitative measures in the form of a bespoke Integrated Disclosure Index. The index measures the level of integration found in the disclosures instead of the mere presence or absence of mentioned capitals, content elements and guiding principles in isolation. The present sample comprised the 2016 integrated/sustainability reports for 184 listed companies sourced from the Integrated Reporting Examples Database.

Findings – The 6Cs are well disclosed in form but only partially disclosed in substance. Further, overall levels of integration between the capitals, the content elements and the guiding principles are higher than average. Disclosures on materiality, business models and stakeholder relationships are somewhat lacking, as are the related medium- and long-term disclosures on outlook.

Practical implications – The paper contributes to the academic debate on IR by building a case for holistically assessing the substance of integrated reports. Considering that the IR value creation model can underpin and align with the 17 UN sustainable development goals, the authors show how the fundamental concept of the 6Cs sustaining value creation is understood and implemented differently across the various elements and principles of the IR framework.

Social implications – This research also provides guidance for overcoming some of the practical hurdles associated with assessing the quality of reports because the authors provide tools for spotlighting the substance of disclosures over their form.

Originality/value – This paper delves into the substance of integrated reports by assessing how well the 6Cs have been integrated into disclosures on the content elements and guiding principles of the IR framework.

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In contrast to previous IR research that has mainly analysed capital, elements and principles in isolation, the authors develop an index assessing the integration of these three fundamental concepts of IR.

Keywords Integrated reporting, Integrated thinking, Value creation, Six capitals, Materiality, Stakeholder engagement, Value reporting

Paper type Research paper

1. Introduction

In the past two decades, an increasing number of organisations have begun disclosing non-financial information to overcome the limits of traditional financial reporting (Gleeson-White, 2014; Hopwood, 2009). The phenomenon originated after a string of accounting and corporate scandals, such as the collapse of Enron, WorldCom and Global Crossing (Chatzkel, 2003) and environmental disasters and social outrages, such as Deepwater Horizon and Foxconn (Eccles and Serafeim, 2013). In this context, the International Integrated Reporting Council (IIRC) was established in 2010, and the integrated reporting (IR) framework was issued in 2013.

The need to understand how the substance [1] of integrated reports has been operationalised in practice is nothing new. Over the past decade, researchers have thoroughly analysed the substance of integrated reports (Beske *et al.*, 2020; Liu *et al.*, 2019; Pistoni *et al.*, 2018). Such content analysis has focused either on the disclosure of different types of capital or the content elements and guiding principles that comprise the IR framework. However, what has been overlooked is the extent to which the two have been integrated – that is, how these multiple capitals are embedded into the content elements and guiding principles that are supposed to underpin these reports (IIRC, 2021). We aim to fill this gap by understanding the level to which the six capitals (6Cs) have been integrated into the disclosures of reporting organisations.

To this end, we developed an index called the integrated disclosure index (IDI) by which we could measure the level of integration within the information disclosed in integrated reports. We then used this index to analyse the content of 184 integrated reports. We find that many companies are aware of the 6Cs model and, accordingly, use it in their integrated reports. We also find companies report by following these content elements more than they do the guiding principles. More specifically, the guiding principles of materiality, stakeholder relationships and the outlook content element are reported relatively less than the other guiding principles and content elements. Our findings also highlight the difficulties companies face when using the IR framework to report on the different types of capital as inputs, outputs and outcomes of their business models in the long term. The findings lead us to conclude that, even if the form of many integrated reports follows the IR framework, the substance of the reports is questionable for stakeholders and the company.

Our research findings are even more relevant now than when we first embarked on this research project, given the substantial changes that have since occurred in the IR environment. Three different shifts in the landscape have happened that underline the increasing relevance of this research. First, on 9 June 2021, the IIRC and the Sustainability Accounting Standards Board (SASB) merged into a new organisation – the Value Reporting Foundation (VRF). The VRF's purpose is to become "a credible, international organization that maintains the IR framework, advocates integrated thinking, and sets sustainability disclosure standards for enterprise value creation" (VRF, 2020). The announcement closely followed the *Statement of Intent to Work Together Towards Comprehensive Corporate Reporting* issued in September 2020 by the five major players in the sustainability reporting arena: the Global Reporting Initiative (GRI), the Carbon Disclosure Project (CDP), the IIRC, the SASB and the Climate Disclosure Standards Board (CDSB). The VRF thus shares the IIRC's (2021, p. 2) aim to "become the corporate reporting norm". The result is that the IR framework, the integrated thinking principles and the SASB standards are now three separate but related pillars of the VRF.

Second, on 3 November 2021, the IFRS Foundation (2021) announced the intention to consolidate the VRF and establish the International Sustainability Standards Board (ISSB). In the IFRS Foundation (2021) view, "it is intended that the technical standards and frameworks of the [Climate Disclosure Standards Board] and the VRF [. . .] will provide a basis for the technical work of the new board". Moreover, the IFRS Foundation (2021) used the same normative, investor-centric rhetoric of the IIRC and the VRF when launching the ISSB (Pigatto *et al.*, 2022). It is too early to know how the IR framework will be integrated and used by the IFRS Foundation because the IIRC and the ISSB can be considered competing frameworks that serve similar purposes and apply similar approaches (Barker and Teixeira, 2020; Pigatto *et al.*, 2022). Therefore, understanding how organisations use the IR framework may provide the IFRS Foundation with more insights into the IR framework's strengths and weaknesses.

These two events increase the relevance of our research because if IR becomes part of the new ISSB standards, it will be important for reporting organisations to grasp the fundamental concepts of IR fully. Specifically, they will need to understand how to communicate multi-capital value creation and give investors insights into how the 6Cs are used and affected by their organisation (IIRC, 2021). Because the purpose of the IR framework is to "establish Guiding Principles and Content Elements that govern the overall content of an integrated report" (IIRC, 2021, p. 6), it is important to analyse how such concepts and principles are practically used to disclose value creation through the 6Cs into the reports. If the ISSB standards are here to build on the IIRC's work, assessing whether companies substantially or formally disclose IR's fundamental concepts of value creation and the 6Cs model might be relevant for the standard setter. Our research shows that companies tend to have a good formal grasp of said concepts but only partially disclose them in substance. This result should ring a bell at the IIRC's – and ISSB's – headquarters and warns for careful consideration of the relevance of the reports' content. Therefore, our analysis of past reports could inform current and future developments of the ISSB standards and the IR framework itself.

Last, the IR framework value creation model centred on the 6Cs aligns well with the 17 UN sustainable development goals (SDGs) (Adams *et al.*, 2020). The SDGs entail a significant level of complexity because organisations need to consider interrelationships and trade-offs among SDGs to contribute to sustainable development (Bebbington and Unerman, 2018, 2020). Whenever organisations create, transform or deplete value in the 6Cs, they also impact the SDGs (Adams *et al.*, 2020). Because the 6Cs link to the SDGs in many ways, the IR framework can assist organisations in recognising and reporting on their multi-capital value creation model and, therefore, disclosing the impacts of their activities on the SDGs (Adams, 2017; Coulson *et al.*, 2015).

With this research, we have adopted a novel approach to analysing the content of integrated reports because, rather than exploring guiding principles, content elements or capitals in isolation, we have holistically studied how companies have integrated multi-capital value creation with the content elements and guiding principles of the IR framework in their reports. In this way, we have built a case for holistically assessing the substance of integrated reports and provided researchers with a comprehensive index for undertaking such an assessment. Additionally, our analysis reveals how value creation, modification and depletion in terms of the 6Cs are understood and implemented differently across the elements and principles. Third, we assess report quality by investigating whether integrated reports tend to prefer substance over form or form over substance.

The remainder of the paper is structured as follows. Section 2 introduces the main concepts that underpin the IR framework. Section 3 builds on such main concepts and outlines the issues emerging when content elements, guiding principles and the 6Cs are considered in isolation. These issues inform the research question expressed at the end of Section 3. Section 4 describes the methodology used to construct the IDI and collect the data. Section 5 presents the main results emerging from the content analysis, while Section 6 discusses such results. Lastly, Section 7 concludes the paper by highlighting the contributions, limitations and future research avenues.

2. Context: integrated reporting, the 6Cs and integrated thinking

On 9 June 2021, the IIRC and the SASB merged, giving birth to the VRF. The goal was to respond to "calls for convergence across the global field of corporate reporting" (VRF, 2021). According to the VRF, the merger should unite the IIRC's focus on management and business decision-making with the SASB's focus on investor decision-making to help businesses and investors understand how an organisation creates value (VRF, 2021). To achieve such an aim, the VRF relies on three tools: the updated IR framework (IIRC, 2021), the integrated thinking principles (IIRC, 2019) and the 77 SASB industry standards (VRF, 2021). According to the VRF (2021, p. 3), when used together, these three tools should "create a perpetual feedback loop, enabling businesses and investors to more effectively communicate on enterprise value and how it is created, preserved or eroded over time".

2.1 Integrated reporting

Responding to the need for instruments to describe a firm's accountability towards a broader base of capitals, in 2013, the IIRC issued the international IR framework, which follows a principles-based approach. The framework's ambitious goal is to serve as a guide for organisations that want to improve their disclosures on matters relevant to value creation; enhance accountability and stewardship on issues beyond financial ones; and support decision-making and actions oriented to the creation of value in the short, medium and long term (IIRC, 2021) [2]. To achieve these objectives, the framework identifies nine content elements – organisational overview and external environment; governance; business model; risks and opportunities; strategy and resource allocation; performance; outlook; the basis of preparation and presentation; and general reporting guidance – that provide a structure for the disclosures that should be in the report. The IR process must also follow seven guiding principles (i.e. strategic focus and future orientation, connectivity of information, stakeholder relationships, materiality, conciseness, reliability and completeness and consistency and comparability) to improve the quality, transparency and comparability of the reports (Liu *et al.*, 2019). Using a principles-based approach to guide the substance of disclosures in integrated reports would likely help organisations maintain flexibility, reduce complexity and avoid a mere "tick-the-box" exercise (La Torre *et al.*, 2019; Safari and Areeb, 2020; Stubbs and Higgins, 2018; Tiron-Tudor *et al.*, 2019).

In spite of the IIRC's "noble" goal, criticism has emerged regarding the regulatory capture that the IIRC may have suffered from interest groups such as the accountancy profession and report preparers (Flower, 2015). Specifically, Flower (2015, p. 16) has argued that the interest groups:

> [. . .] were worried about the development of alternative forms of corporate reporting, principally sustainability reporting as championed by the GRI [. . . and] that these new forms of reporting would undermine the capitalistic theory of the firm and replace it with a more socially-oriented theory, such as the stakeholder theory of the firm.

On 24 March 2022, the GRI and the IFRS Foundation announced that they would work to ensure the "compatibility and interconnectedness of investor-focused baseline sustainability information that meets the needs of the capital markets, with information intended to serve the needs of a broader range of stakeholders" (IFRS Foundation, 2022). Yet, they also marked again that their standards rested on a different theory of capitalism. First there is the shareholder capitalist view of "investor-focused capital market standards of IFRS Sustainability Disclosure Standards developed by the ISSB". Second there is the stakeholder capitalist view aligned with the "GRI sustainability reporting requirements set by the GSSB, compatible with the [ISSB standards], designed to meet multi-stakeholder needs" (IFRS Foundation, 2022).

Irrespectively of the label that companies put on their reports, sustainability reporting and IR are two fundamentally different things (Buhr *et al.*, 2014; Flower, 2015; Thomson, 2015). Because IR has a purely business and investor focus, it remains questionable whether it "can drive social and environmental stability and sustainability" (Dumay *et al.*, 2016, p. 179). In fact, according to Thomson (2015, p. 4), integrated reports "privilege a neo-liberal programmatic and incorporate the elements of sustainability that are aligned with [the] underlying principles of capitalism" because they "exclude too much of the sustainability programmatic and do not allow for any substantive redistribution of power". It follows that, when analysing IR in practice, researchers should assess the substance of the reports beyond the "integrated", "annual" or "sustainability" labels that companies put on their reports, as that alone may prove misleading.

2.2 The 6Cs model and integrated thinking

If the IR content elements inform the substance of IR disclosures and the guiding principles underpin IR practices, the third pillar on which the IR framework rests is the multi-capital model, as represented by the 6Cs (Liu *et al.*, 2019). The framework identifies six types of capital as benchmarks to ensure that all relevant impacts of an organisation's activities are considered and accounted for (Busco *et al.*, 2017; IIRC, 2013, 2021). The six capitals are financial, manufactured, human, social/relational, intellectual and natural (IIRC, 2013, 2021). While financial and manufactured capital are tangible assets usually recorded in financial statements, that is not the case for the remaining four (Melloni, 2015).

Slack and Tsalavoutas (2018) report some scepticism from analysts and fund managers on the 6Cs model. They recognise that, as time passes, the model might become more widely accepted. Data from corporateregister.com (2021), a private company and website specialising in tracking voluntary organisational reporting, seem to confirm Slack and Tsalavoutas' (2018) conjecture. The number of reports tracked by corporateregister.com disclosing information about at least two of the six capitals defined by the IIRC (2021) went up from around 300 in 2016 to fewer than 900 in 2020. However, research has shown that the substance of the disclosure across the 6Cs is still problematic and far from achieving a full integrated report (Albertini and Cho, 2020; Liu *et al.*, 2019).

The emphasis placed by the IIRC on the 6Cs reflects the need to differentiate its approach to value creation from traditional financial reporting (Adams, 2017; IIRC, 2019). While the traditional approach to value creation is mainly concerned with maximising financial returns (Bower and Paine, 2017; Gray, 2006), the IIRC (2019) argues that value creation involves multiple capitals and dimensions. This version of value creation, which embeds the 6Cs model, indicates that value creation includes but goes beyond the pursuit of profit (Adams, 2017). Drawing from these insights, we argue that it is impossible to assess value creation in the IIRC's terms without embracing the multi-capital perspective on which the concept rests. Therefore, in our research, we refer to value creation from a multi-capital and multi-dimensional perspective rather than the traditional financial-centric one.

From the IIRC's viewpoint, the 6Cs model is the basis of the value creation process. It is associated with integrated thinking and decision-making (Tirado-Valencia *et al.*, 2021). Integrated thinking is "the active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects" (IIRC, 2021, p. 2). The Integrated Thinking and Strategy Group of the IIRC has tried to clarify that integrated thinking strives for a "multi-capital management approach that enables organizations to deliver their purpose to the benefit of their key stakeholders over time" (IIRC, 2019, p. 5). Thus, integrated thinking should engender the integration of the different capitals that lead to creating, modifying or depleting value.

Adams *et al.* (2020) align the IR framework value creation model and the 6Cs to the SDGs. The SDGs adopted by the UN on 25 September 2015 consist of 17 goals and 169 targets, which are integrated, indivisible and based on the economic, social and environmental dimensions of sustainable development (UN, 2015). The UN (2015) acknowledges the role of the private sector in achieving the SDGs by 2030. However, companies willing to tackle the SDGs will probably face a:

> [. . .] clash between the dominant business model, which is based upon short-term planning with a narrow focus on finances, and a sideline agenda of longer-term planning with social, economic and environmental goals (Scheyvens *et al.*, 2016, p. 380).

Integrated thinking and IR can eventually help companies address such a clash because integrated thinking and IR offer a way to integrate sustainable development risks and opportunities into an organisation's business model and strategy to create value (Adams, 2020). Therefore, even if the IIRC framework was not designed to help organisations address the SDGs, it can still assist them (Adams, 2017, 2020).

2.3 The 6Cs and value creation: linkages with content elements and guiding principles

Most of the IR content elements refer to value creation and the 6Cs. As summarised in Table 1, providing information on the value creation process must involve disclosures on how organisations manage and modify the different types of capital. The framework prescribes that this inherently involves providing information about the organisation's business model, performance, key risks and opportunities, outlook, governance structure and strategy.

However, focusing only on content elements may result in a tick-the-box approach, which is not the intent of the IIRC. In IR, box-ticking occurs whenever organisations apply a compliance-driven approach to reporting instead of focusing on internal practices and governance mechanisms to enhance the value creation discourse (La Torre *et al.*, 2019). The voluntary principles-based approach adopted in the IR framework could ease the downsides of the "one-size-fits-all" approach – such as reporting burdens and complexity – and must allow for more flexibility in disclosing firm-substantial issues for value creation (Safari and Areeb, 2020; Stubbs and Higgins, 2018; Tiron-Tudor *et al.*, 2019).

The guiding principles must inform the disclosure of value creation in integrated reports to avoid box-ticking by reporters. The concept of *materiality* contained in the IR framework is a direct descendant of what Edgley *et al.* (2015, p. 5) describe as a "new framework for materiality", which originates from social and environmental reporting and assurance. This new framework differentiates materiality from what is traditionally done in financial audits and considers materiality a critical ethical lens to check the ability of disclosure to put

Table 1. Linkages among content elements, value creation and the 6Cs in the IR framework

Content element	Linkages with the 6Cs in the IIRC's (2021) IR framework
Business model	At the core of the organisation is its business model, which draws on various capitals as inputs and, through its business activities, converts them to outputs (products, services, by-products and waste). The organisation's business activities and outputs lead to outcomes in terms of effects on the capitals (p. 21)
Performance	An integrated report contains qualitative and quantitative information about performance that may include matters, such as . . . the organisation's effects (both positive and negative) on the capitals, including material effects on capitals up and down the value chain (p. 45)
Risks and opportunities	An integrated report identifies the key risks and opportunities that are specific to the organisation, including those that relate to the organisation's effects on, and the continued availability, quality and affordability of, relevant capitals in the short, medium and long term (p. 44)
Outlook	The availability, quality and affordability of the capitals the organisation uses or affects (e.g., the continued availability of skilled labour or natural resources), including how key relationships are managed and why they are important to the organisation's ability to create value over time (p. 47)
Governance	Those charged with governance are responsible for creating an appropriate oversight structure to support the ability of the organisation to create value (p. 21)
Strategy	An integrated report should provide insight into the organisation's strategy and how it relates to the organisation's ability to create value in the short, medium and long term and to its use of and effects on the capitals (p. 25)

Source: Adapted from IIRC (2021)

substance over form and provide a complete story about the responsible behaviour of corporations. The shift in the focus of materiality towards stakeholders rather than shareholders should emphasise the social and environmental impacts of non-financial performance, which serves corporate legitimacy strategies (Beske *et al.*, 2020). Nevertheless, the non-traditional stakeholder-centric approach to materiality couples well with the IIRC's (2021, pp. 29–30) view of materiality because:

> An integrated report should disclose information about matters that substantively affect the organization's ability to create value over the short, medium and long term. (. . .) Such [material] matters may have direct implications for the organization itself or may affect the capitals owned by or available to others.

Engaging stakeholders is necessary to ensure the disclosure's substance (Manetti, 2011; Edgley *et al.*, 2015). For the IIRC (2021, p. 29), stakeholder relationships are closely related to stewardship and accountability:

> When the capitals are owned by others or not owned at all, stewardship responsibilities may be imposed by law or regulation (e.g. through a contract with the owners, or through labour laws or environmental protection regulations). When there is no legal stewardship responsibility, the organization may have an ethical responsibility to accept, or choose to accept stewardship responsibilities and be guided in doing so by stakeholder expectations.

A good relationship with stakeholders may imply different sub-processes, such as stakeholder mapping, management and engagement through materiality assessments (Safari and Areeb, 2020). Herremans *et al.* (2016) argue that engaging stakeholders in a systematic and deliberate feedback loop may encourage organisational learning. Identifying and engaging relevant stakeholders is crucial when anticipating the potential risks that may undermine value creation. It is also important in pursuing organisational learning and securing a license to operate (Herremans *et al.*, 2016; Tirado-Valencia *et al.*, 2021).

Connectivity of information is another relevant guiding principle for integrating the 6Cs into the reports. Connectivity considers "interdependencies and trade-offs between the capitals, and how changes in their availability, quality and affordability affect the ability of the organization to create value" (IIRC, 2021, p. 27). Connectivity, however, is not just about the 6Cs. Rather, a report returning a holistic picture of the organisation's activities should provide connectivity across the content elements; past, present and future information; financial and other information; qualitative and quantitative information; and the 6Cs.

3. Literature review and research questions: the substance of integrated reports

In this section, we review how the extant literature views the substance of integrated reports. Three strands of literature are relevant to this objective. The first is studies on specific content elements or guiding principles. The second is studies on the disclosure of the 6Cs in integrated reports. Last are the studies that simultaneously analyse content elements, guiding principles and the 6Cs. In the following subsections, we critique these strands, highlighting the gaps filled by this research.

3.1 Content elements and guiding principles

Papers in the first strand of research offer an in-depth but circumscribed understanding of the fundamental concepts that compose the IR framework. For example, research has focused on the guiding principle of materiality (Beske *et al.*, 2020; Fasan and Mio, 2017; Mio *et al.*, 2020; Steenkamp, 2018). Beske *et al.* (2020) find an increasing number of disclosures about materiality in their analysis of sustainability and integrated reports. However, they do not find information about the process that leads to a material matter being identified. Moreover, their disclosure index is binary categories – a disclosure is either material or not – but this is coupled with a call for more granular data on the degree of materiality in the disclosures.

Other examples of research focusing on only one item of IR include Melloni *et al.*'s (2016) research on business model disclosure and du Toit's (2017) and Melloni *et al.*'s (2017) study on the readability of integrated reports. Although recognising the importance of considering different types of capital as inputs, outputs and outcomes of a business model, Melloni *et al.* (2016) focus on the tone in which the business model is disclosed rather than on what the business model discloses. Further, du Toit (2017) and Melloni *et al.* (2017) focus on the readability of integrated reports by investigating their conciseness and clarity along with the balance found in the disclosures. However, like Melloni *et al.* (2016), these two studies focus on how information is disclosed rather than on the substance of the content.

Notably, Grassmann *et al.* (2019) assess the guiding principle of connectivity between the types of capitals by measuring the distance in paragraphs between the disclosure of two types of capital. This method offers a unique and interesting take on the extent to which the capitals are connected, but how well the 6Cs, the content elements and the guiding principles are integrated as the basis of the value creation process remains beyond the scope of their study. In our opinion, studies belonging to the first strand of research are useful for understanding how to analyse and measure specific content elements and guiding principles in more detail. However, they provide only minor insights into how the 6Cs and the value creation process are embedded in the content elements and guided by the principles.

3.2 Types of capital

A few researchers have analysed the quantity or quality of disclosures regarding specific capitals. Unsurprisingly, most of these studies focus their analyses on the three types of capital ascribable to the traditional tripartite model of intellectual capital (Petty and Guthrie, 2000). For example, Melloni (2015) and Beretta *et al.* (2019) focus on the tone of disclosure of intellectual, human and social/relational capitals. Ahmed Haji and Anifowose (2017) focus on the same types of capital but measure the quantity and quality of the disclosure. After developing a list of 40 items composed of metrics of the three types of capital (e.g. patents, customer satisfaction, employee education), they check whether the disclosure is absent, superficially mentioned or disclosed in-depth (scored from 0 to 3). To the best of the authors' knowledge, Setia *et al.* (2015) is the only study that includes natural capital alongside the human, intellectual and social/relational ones in the analysis of integrated reports. The papers included in the second strand of research provide interesting contributions to using specific types of capital in the disclosure of organisations. However, they treat the different types of capital as standalone concepts independent of the content elements and the guiding principles.

3.3 Content elements, guiding principles and the 6Cs

Studies belonging to the third strand of research consider the content elements, guiding principles and the 6Cs simultaneously. However, such studies open two gaps in how they assess the use of the 6Cs model in integrated reports. First, most of these studies focus primarily on the content elements and guiding principles while leaving the 6Cs model and its integration with content elements and guiding principles in the background (Ahmed Haji and Anifowose, 2016; Kılıç and Kuzey, 2018a). For example, Ahmed Haji and Anifowose (2016) cite the capitals only in 1 out of the 52 items on their checklist. Kılıç and Kuzey (2018a) include the impact of aspects of corporate governance, strategy, performance and business model on the types of capital. However, their dichotomous measure regarding these impacts only grasps the breadth of the disclosures, not their depth. For example, let us take Kılıç and Kuzey's (2018a) item "B14. Increase capitals (create value)". We can neither appreciate whether only one capital is increasing (or up to all six) nor whether any information has been cited beyond the fact that there has been an increase.

Second, those studies that consider the integration of the 6Cs only refer to a few content elements or guiding principles. For example, Stent and Dowler (2015) explicitly assess the use of capitals, but only under the "strategy" and "performance" categories of their checklist. We argue that these studies, even if they focus on disclosure quality, cannot grasp the overall contribution of the 6Cs to the value creation process explained through content elements and guiding principles.

Two notable exceptions in the third strand of literature on the substance of IR are Pistoni *et al.* (2018) and Liu *et al.* (2019). Pistoni *et al.* (2018) implement a 0–5 scale to measure the disclosure of capital ranging from the complete lack of a description to an excellent description, which aligns with IR's guiding principles. However, they do not capture the degree of integration of capital in relevant content elements, such as the business model, strategy or performance.

Liu *et al.* (2019) develop an extensive checklist comprising 941 items. Some of the items explicitly seek to identify traces of measurement and key performance indicators (KPIs) of the six capitals, such as "description of machines and tools" or "greenhouse gas emission". Other items seek to identify information on the impact of content elements on the capitals, such as a "description of how the organisation's culture, ethics and values are reflected in its use of and effects on the capitals". However, their dichotomous approach to the measurement of capitals – yielding a sum of 0/1 variables for a few items – constrains the flexibility of companies to disclose what is substantial for them. For example, a company operating in an environmentally sensitive industry may be more interested in focusing its disclosure on natural capital, while a financial institution may not have the same interest. If we were to use Liu *et al.*'s (2019) checklist, we would not be able to grasp whether the disclosure of the items belonging to the "capitals" category is substantial for the organisation or merely follows a tick-the-box exercise.

We argue that both Pistoni *et al.* (2018) and Liu *et al.* (2019) are more suited to assessing the breadth of disclosures in single reports (i.e. the quantity of the disclosures). But neither allows an understanding of the relevance of the disclosures nor the extent to which the 6Cs have been integrated with the content elements and guiding principles.

3.4 Research question

Our research falls into the third strand of literature. Were the IR framework truly to become the corporate reporting norm under the VRF's banner, researchers, regulators and practitioners must be provided with a holistic instrument for assessing the substance of integrated reports and their adherence to the fundamental concepts contained in such a framework. However, unlike previous studies, we claim that for researchers to assess the substance of an integrated report, it is not sufficient to analyse disclosures of the capital, content elements and guiding principles in isolation. Rather, it is necessary to take a step forward and shift the focus onto how much the 6Cs and the multi-capital value creation permeate the content elements and are guided by the principles. It follows that we aim to understand the level to which the 6Cs have been integrated into the disclosures of the reporting organisation.

The aim of this research can be further refined into a research question that explicitly addresses the role of content elements, guiding principles and the 6Cs in determining the substance of the disclosure in integrated reports:

RQ. To what extent do integrated reports disclose substantive information about the level to which the 6Cs have been integrated into the content elements and guiding principles?

4. Methodology and data

4.1 Sample selection

Like Kılıç and Kuzey (2018b) and Pistoni *et al.* (2018), sample selection began with the Integrated Reporting Examples Database. Reports retrieved from this database (during March and April 2018) accounted for 532 companies. Only those that issued a report in 2016 were included in this initial sample of firms. We focused on 2016 for two reasons. First, it was the last year before Directive 2014/95/EU came into force, which requires some large European companies to disclose a non-financial statement containing information on the company's business model, risk management and performance "relating to at least environmental matters, social and employee-related matters, respect for human rights, anti-corruption and bribery matters" (European Parliament and Council of the European Union, 2014, p. 4). Also, it was the year before King Code IV was released (The Institute of Directors in Southern Africa, 2016). Therefore, focusing on more than one year would have biased the European and African sub-samples and opened a research path beyond the scope of our study. Second, 2016 was the first year the SDGs spread worldwide. Therefore, we could glean insight into a nascent phenomenon, SDGs-related reporting, which would be later linked to integrated thinking and the IR framework (Adams, 2020; Adams *et al.*, 2020).

Coherently with the focus of our research on the IIRC's IR framework, a preliminary analysis led us to exclude reports that did not explicitly refer to the keywords "IIRC", "International Integrated Reporting Council", "Integrated Reporting framework", "International framework" or "IR framework". This methodological choice was made to look beyond the simple, occasionally misleading labels that companies sometimes put on their reports. It can happen that reports explicitly following the IR framework are labelled "annual report" or "sustainability report". We wanted to keep the focus of our research on the IIRC's IR framework, not necessarily only on reports labelled "integrated".

Because the IR framework is aimed at providers of financial capital (IIRC, 2021), we decided to focus only on listed companies. Therefore, we excluded the firms that did not have data on the Thomson Reuters' Eikon database. The English version of the reports was downloaded from the company websites and stored in a Google Drive folder. The final sample included 184 reports – one for each company – corresponding to 34.6% of companies included in the Integrated Reporting Examples Database.

The final sample comprises companies from Africa (39.1%), Australasia (28.7%), Europe (27.7%) and the Americas (4.3%). All the African companies in the sample are from South Africa. The most represented sectors, using the NACE classification (Eurostat, 2008), were manufacturing (32.6%); financial and insurance activities (19.6%); wholesale and retail trade (8.2%); information and communication (7.6%); electricity, gas, steam and air conditioning (5.4%); and real estate activities (5.4%). The remaining 39 reports, distributed across 11 sectors, accounted for 21.2% of the sample.

4.2 The integration disclosure index variable

We developed an IDI based on the different guiding principles and content elements associated with integrating the 6Cs and the value creation discourse. The index was constructed through a three-step methodology. First, one of the authors reviewed the IR framework and drafted an initial list of six content elements (Table 1) and the three guiding principles on materiality, stakeholder relationships and connectivity of information. Second, the review was integrated with a thorough analysis of the relevant literature on IR and a scoring system for each item was developed. Third, the items comprising the list and scoring system were discussed among the four authors until a consensus was reached on the items to be included and their measurement.

We drew from and refined the "relevance" category variable (0–5) contained in Fasan and Mio (2017) for the guiding principles on materiality and stakeholder relationships. For example, the deeper the disclosure of the materiality process behind the item and the more attention given to identifying and prioritising the actions taken to deal with material issues, the higher the score (Table 2). Similarly, higher scores were given on the stakeholder relationship index to those reports describing how stakeholders were identified and the actions taken to engage with them and address their needs.

We used an original approach to model the third guiding principle on the connectivity of information, as we could not find a previous model that fit our research aim. We decided to begin with the IIRC's (2021) definition – this captured the breadth of connectivity in integrated reports. We used one binary variable (0, absence; 1, presence) for each of the types of connectivity of information present in the report: among the types of capital; among content elements; among the past, present and future; between financial and other information; and between qualitative and quantitative information. Therefore, the composite

Score	Materiality	Stakeholder relationship
0	If there is no reference to materiality	If there is no reference to stakeholder relationships
1	If the report only states that materiality is a principle followed for producing the report	If the report only states that stakeholder relationships and engagement are principles followed for producing the report
2	If it includes a brief discussion of what is considered material in general terms	If it includes a brief discussion on how stakeholders are engaged
3	If, beyond the discussion of what is material, it communicates the material issues emerging from the analysis	If, beyond the discussion of how stakeholders are engaged, it communicates the results emerging from the engagement
4	If the description of the process and its results are described in great detail	If the description of the process and its results are described in great detail
5	If the report devotes significant attention to materiality (materiality matrix and materiality process). Information on the prioritisation of actions to address the material issues must be provided	If the report devotes significant attention to stakeholder relationships and engagement (e.g. methods, results and actions taken)

Table 2. Measurement of the materiality and stakeholder relationship scores

index representing the connectivity of information ranged from 0 (no connectivity information) to 5 (all types of connectivity were described).

In assigning scores to content elements, we looked for traces of value creation and integration of the 6Cs (Table 3). To measure such an integration, we were inspired by the 0–5 measurement developed by Pistoni *et al.* (2018) and widely adopted in extant content analysis literature (Vitolla *et al.*, 2019; Raimo *et al.*, 2020). We further refined the scoring system to focus the measure on integrating the 6Cs and the value creation process. For example, a score of 5 for the business model content element was awarded only to those companies that considered the 6Cs as inputs, outputs and outcomes in the business model section of their report. Moreover, they were required to provide a detailed description of the business processes and quantitative measures of inputs, outputs and outcomes used in the business model in terms of the 6Cs.

Similarly, a report with a low score for outlook indicates that this element is poorly described, while a high score signifies that the company discloses how the 6Cs are expected to impact and be impacted by future challenges and uncertainties. Further, the outlook content element must not be confused with risks and opportunities – neither in its rationale nor in its measurement. While the outlook is more related to medium- and long-term scenario planning and the trends expected to affect the 6Cs, risks and opportunities are more related to the likelihood and the impact of events that may affect the business. Therefore, high scores were given to companies that disclosed both qualitative and quantitative information regarding the threats and opportunities their capitals generated (e.g. risk maps), and to those that included information about the 6Cs in the company's risk management.

For scoring *governance*, *strategy* and *performance*, we followed the same reasoning for the business model, outlook and risks and opportunities.

The scores for each of the six content elements and the three guiding principles were added with equal weight to arrive at a final overall IDI score. The full range of the index is, therefore, 0 (no disclosure of value creation and integration of 6Cs) to 45 (excellent disclosure of value creation and integration of 6Cs). It is worth emphasising that a higher score does not correlate to more disclosure; it means that the more the 6Cs and multi-capital value creation have been integrated with the reports' content elements and guiding principles.

Table 3.
Measurement of the content elements

Score	Business model	Outlook	Risks and opportunities	Governance	Strategy	Performance
0	Content element absent					
1	Content element poorly described					
2	The description is based on some general quantitative/qualitative information					
3	Balanced description of content element. Some information on how the 6Cs are incorporated in the content element is provided					
4	Good and detailed description					
	Information on relevant capitals used as inputs and relevant impacts of the BM on the 6Cs is provided	Information on the outlook of the company and its operating environment is provided. It is evident how relevant capitals are included in or impact the outlook	Information on relevant capitals perceived as risks or opportunities is provided	It is easy to understand who is responsible for the 6Cs	Information on relevant capitals included in or impacting the content element is provided	
5	Excellent description					
	The report includes quantitative information and infographics on the BM. In addition, the report provides qualitative and quantitative information on the six capitals as inputs, outputs and outcomes of the BM with associated relevant KPIs	The report provides an assessment of challenges and uncertainties in terms of the 6Cs impacting the strategy, business model and future performance; describes actions taken to monitor the outlook and tackle expected trends (e.g. scenario planning)	Information on the mitigation of risks and opportunities is provided. The report provides qualitative and quantitative information on risks and opportunities derived from the 6Cs (e.g. environmental risks, reputational risks and green innovation opportunities)	The report provides quantitative information on how the 6Cs and the value creation process are managed at the board level (e.g. presence of CSR/sustainability committee, incentive scheme linked to the 6Cs)	The report provides qualitative and quantitative information on how the 6Cs contribute to the strategy and are affected by it	The description is enriched with KPIs, comparisons with past performance and future objectives

Therefore, consistent with the reasoning presented in Section 2, the IDI provides researchers with an index for assessing the quality of integrated reports rather than content elements, guiding principles or types of capital taken in isolation.

4.3 Content analysis methodology

We collected the scores through content analysis (Al-Tuwaijri *et al.*, 2004; Cinquini *et al.*, 2012; Fasan and Mio, 2017; Kılıç and Kuzey, 2018b). Content analysis is a research technique for making replicable and valid inferences from text and other meaningful matters to the context of their use (Krippendorff, 2018). Content analysis was conducted on the entire report, including text and infographics (Jones, 2011). We followed a coding system where different people coded the text in the same manner, to achieve a satisfactory level of reliability (Milne and Adler, 1999). The coding also ensured a level of validity where the variables generated from the classification procedure represented their intended objective. The coding system is the core of the content analysis because it specifies the information that must be identified and how it must be classified.

A single coder analysed the 184 reports with a total of 28,985 pages in terms of their integrity from March 2018 to July 2018. Using a single coder who has undergone sufficient training ensures reliability in the content analysis methodology (Milne and Adler, 1999). The same author repeated the coding procedure on a random subsample of the data 12 months after the first coding. This step eliminates inconsistency problems across coders and across time, further enhancing the overall reliability of the coding procedure (Michelon and Parbonetti, 2012). Internal consistency was ensured by obtaining a Krippendorff's alpha of 0.96 (Krippendorff, 2018). Last, a second researcher further assessed the reliability of the coding by scoring a subsample of the reports, obtaining a Krippendorff's alpha of 0.90. The level of reliability attained is considered satisfactory because it is far above the minimum threshold of 0.75 for Krippendorff's alpha (Bozzolan *et al.*, 2009; Milne and Adler, 1999).

Every report was manually coded. Because of the intrinsic characteristics of the disclosure index constructed, qualitative information contained in the reports had to be assessed in terms of its meaning, thereby making it difficult to use any software known and used in previous literature (Fasan and Mio, 2017). The researcher manually coded the reports following five steps. First, the researcher read the entire PDF version of the report. On average, the reports were 158 pages long. Second, the researcher highlighted all relevant passages on the six content elements and three guiding principles contained in the IDI. Third, the researcher assessed whether the 6Cs were mentioned in content elements and guiding principles. Fourth, the information on the 6Cs was contrasted against the scoring system to assign a score from 0 to 5. Last, the researcher recorded the score in an MS Excel file. As is evident from the number of pages read and coded, such a process has a major drawback in terms of time, effort and resource consumption (Milne and Adler, 1999; Steenkamp, 2008; Maier, 2017). However, no alternative method was considered suitable to achieve the level of understanding of the reports' content necessary for our analysis.

The content analysis also allowed us to collect additional information about the reports. First, we recorded the report label. The Integrated Reporting Examples Database comprises integrated reports issued following the IIRC's framework and annual and sustainability reports taken as a benchmark for the quality of the disclosure of guiding principles and content elements (Pistoni *et al.*, 2018). Therefore, the majority (64.5%) of the companies in our sample explicitly labelled their report as "integrated", while 26% labelled their report as "annual". The remaining 11.4% of companies used other labels such as "sustainability", "corporate social responsibility" or just "report". Table 4a and b shows the number and type of reports by geographical area and sector, respectively. Second, we recorded whether the

	IR	AR	Other	Total	Total (%)
a) Geographical area					
Europe	22	22	7	51	28
Australasia	20	23	10	53	29
Americas	2	3	3	8	4
Africa	71	0	1	72	39
Total	*115*	*48*	*21*	*184*	*100*
b) Sector					
Manufacturing	34	19	7	60	33
Financial and insurance activities	12	6	3	21	11
Wholesale and retail trade	10	2	3	15	8
Information and communication	9	4	1	14	8
Electricity, gas, steam and air conditioning	17	6	2	25	14
Real estate activities	5	3	2	10	5
Other	28	8	3	39	21
Total	*115*	*48*	*21*	*184*	*100*
c) SDGs or Agenda 2030					
Presence	32	22	12	66	36
Absence	83	26	9	118	64
Total	*115*	*48*	*21*	*184*	*100*

Table 4. Number and type of reports by geographical area, sector and SDG or agenda 2030 presence

reports mentioned the SDGs or Agenda 2030 (Table 4c). Coherently with our research focus, which is to understand the level of integration of the 6Cs into the content elements and guiding principles, we did not include the SDGs in the scoring system, nor did we look for the level of SDG-related disclosure in the reports.

5. Results

Before presenting the aggregate results of the content analysis conducted on our sample, it is worth showcasing some relevant examples of the disclosures taken directly from the analysed reports. We believe this will provide useful and relevant insights for understanding the implications of the aggregated scores and better clarify the scoring system we developed. Therefore, we provide examples of different scores obtained by some reports for their disclosure of materiality, business model and outlook.

5.1 The qualitative analysis quantified: examples of best and worst "integrators"

There was great variety in the quality of disclosures of single items. For example, if we compare the reports of the South African financial services group MMI Holdings Ltd. and the Dutch full-service bank ABN Amro Group N.V. regarding the materiality guiding principle, MMI scores 2 while ABN Amro scores 5. As indicated in Table 5, MMI provides a brief discussion on what is considered material in general terms, but no reference is made to the materiality process and matrix, nor is any information provided regarding how such issues are prioritised or the actions are taken to tackle them. Conversely, ABN Amro not only discloses its materiality matrix but also provides explicit references to each of the material issues identified in terms of its strategy, the stakeholders impacted, and the disclosure of the material issue in the report (Table 6). Moreover, ABN Amro discusses its materiality process, including the stakeholders involved in the process:

Material matters	Material topics
In determining the content to be included in this report, we consider what the impact will be on value creation for our stakeholders over the short, medium and long term. We regard an issue to be material when it impacts our ability to achieve our strategy and developments that will influence an assessment of MMI's performance. We also consider factors that affect the economic growth and social development of the countries we operate in	The successful execution of the group's client-centric strategy of which the focus areas are: – client centricity – growth – excellence Channel growth across all segments Value creation to unlock financial wellness through client engagement solutions Group-wide expense optimisation project Significant progress with geographical diversification into India and the UK Streamlining portfolio in Africa Embed the outcomes-based investment philosophy in the Investment and Savings Centre of Excellence Implementing a turnaround strategy for the group's health administration businesses Drive profitability in Momentum Short-term Insurance Implementing actions to improve underwriting experience

Source: Adapted from MMI (2017, p. 2)

Table 5. Example of materiality from the report of MMI Holdings Ltd

> With the support of an external agency, we consulted our stakeholders in detail. We started out by asking external stakeholders to rate the importance of a list of material issues. First, a long list of possible subjects was developed, based on our strategy, sustainability perspectives, risk assessments and topics determined by relevant stakeholders or within the sector. Second, a short list was drawn up based on material frameworks and peer analyses, which was verified by internal experts. An online survey with this short list was subsequently sent directly through social media to over 300 stakeholders in our four stakeholder groups, producing 183 responses in total. In addition, we held a dialogue with our internal stakeholders – comprised of members of the Managing Board and senior management from the business lines – who ranked various topics based on the potential impact for ABN AMRO. During the internal consultation process, the matrix was validated and defined. Based on this comprehensive process, the material topics emerged (ABN Amro, 2017, p. 16).

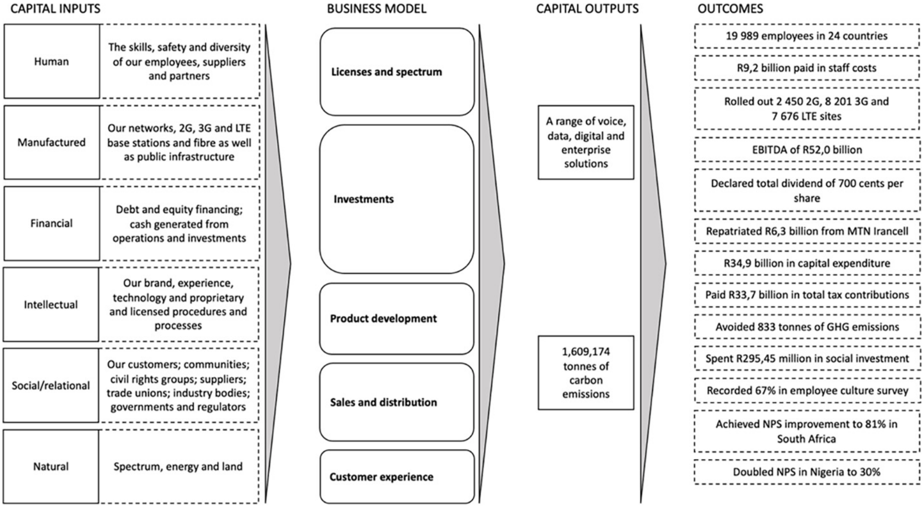
We found similar results for content elements as well. For example, the South African mobile operator MTN Group Ltd. discloses its business model using infographics that indicate how the 6Cs were used as inputs for their business activities and are then transformed into measurable outcomes (Figure 1). Moreover, MTN provides an in-depth analysis of inputs, outcomes and trade-offs for each type of capital, which is also compared with the previous year (MTN, 2017, p. 16). This detailed information level led us to assign MTN's business model a score of 5.

At the other end of the spectrum, we gave the South African grocery, clothing and general merchandise retailer Pick *n* Pay Holdings Ltd a score of 2. As depicted in Figure 2, Pick *n* Pay provides infographics that depict the cycle of their activities under the label "how we create value" (Pick *n* Pay, 2017, p. 8). In describing the business model, Pick *n* Pay also provides a few general qualitative statements, such as "we procure quality products at the best available prices [. . .]", "the business model is supported by outstanding information technology [. . .]" and "our business model is underpinned by strong corporate and social

Table 6. Example of materiality from the report of ABN Amro Group N.V

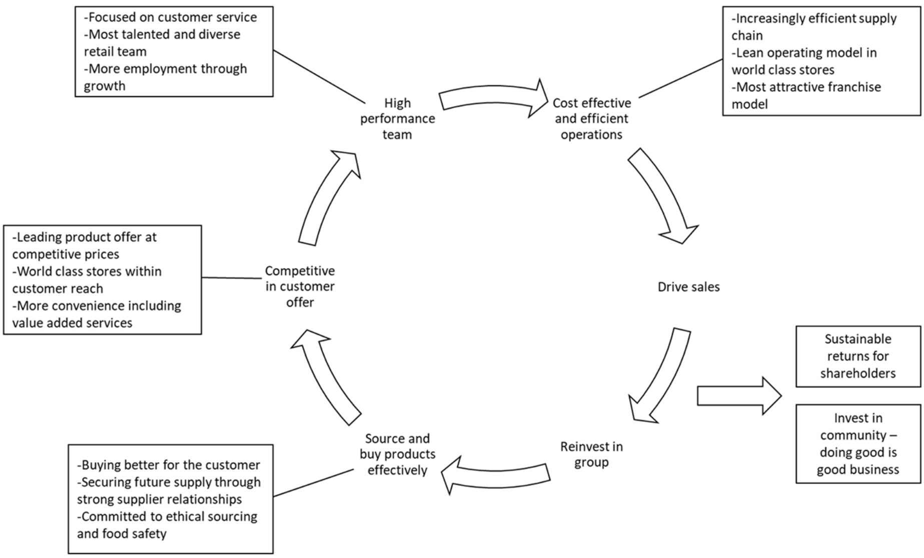
Rank	Material topic	Description	Strategy	Stakeholders	Reference
1	Customer issue ownership	We listen to, and take ownership of, clients' needs and problems. Clients should feel that their needs and issues are addressed by the bank	Client-driven	Clients Employees	Pages 59, 68, 77
2	Ethics and integrity	We base our actions on society's moral standards	Strategy-transcending topic	Clients Employees Society at large Investors	Page 34
3	Preventing corruption, fraud and cybercrime	We protect our clients' funds and data against security breaches. We actively prevent activities designed to illegally acquire commercial or personal gain from our digital or physical environment to the detriment of any party involved in or affected by the bank's activities	Client-driven	Clients Employees Society at large Investors	Page 35
4	Sustainability of our business model	A sustainable business model is a model that produces healthy and robust results, ensuring continuity over the years	Sustainable growth	Clients Employees Society at large Investors	Page 20

Source: Adapted from ABN Amro (2017, pp. 17–18)



Source: adapted from MTN (2017, pp. 10–11)

Figure 1. Example of business model from the report of MTN Group Ltd



Source: adapted from Pick n Pay (2017, pp. 8–9)

Figure 2. Example of business model from the report of Pick n Pay Holdings Ltd

governance with unique values at its core" (p. 8). However, the company neither mentions nor measures how the business model draws on different types of capital nor informs the reader about how such a business model impacts the types of capital; hence, the score of 2.

Scoring the outlook content element was particularly challenging because companies seldom dedicated a section to discussing trends, scenarios and the long-term prospects of their business in terms of the 6Cs. For example, the British retailer Marks and Spencer Plc mainly explained their outlook as a complement to their strategic objectives and operating performance. After setting specific financial and non-financial targets for the following year, they provide information on potential trends that may impact such targets. However, they only provide a general description of such trends and only focus on the financial impact of those trends:

> Given ongoing competitive pressure, we expect gross margin to remain level, as we continue to re-invest operational efficiencies into price, quality and innovation (Marks and Spencer, 2017, p. 21).

In addition, in the operating performance section, the company provides glimpses of future conditions that may have an impact on the business:

> Testing global economic conditions pose a potential risk to our business. We benefit from the local knowledge provided by franchise and joint venture partnerships and ensure we have a sufficiently broad geographical spread. We are looking at every part of our International operations to make sure our strategy is fit for the future (Marks and Spencer, 2017, p. 16).

In the above extract, the company uses an example of social/relational capital to counter one of the threats posed by macroeconomic conditions. However, the description is general, and the use of such a capital appears to be merely incidental and not systematically included in the outlook. Therefore, the outlook in the report of Marks and Spencer is coherent but only scores a 2.

By contrast, the South Korean engineering, procurement and construction contractor Doosan Heavy Industries and Construction Co Ltd received a score of 5 for outlook. Beginning with the UN SDGs analysis, Doosan outlines the main trends that might impact its business activities, such as forecasts of a clean water supply by 2030, the global demand for energy by 2035 and government targets for greenhouse gases emissions by 2030. The company then goes on to cite trends and forecasts on the shortage of clean water by 2030, a natural-capital issue that is likely to impact Doosan's business activities:

> The Global Risks Report of 2016, published by the World Economic Forum, selected water risk as one of the major economic risks along with the global financial and food crises. As the shortage of the water supply and deterioration of water quality accelerate, water risk has become a factor that threatens not only people's health but also the very existence of communities (Doosan Heavy, I., and Construction, 2017, p. 35).

Further, Doosan then links these trends and forecasts to the impact they might have on the market that the company serves:

> As a response to strengthened environmental regulations and water shortages, demand for desalination and advanced water treatment are estimated to increase. Also, the markets for innovative water reuse, recycling technology and infrastructure that help with supplying safe water will grow, which will further expand the water supply through desalination plants. In addition, the growth of the advanced water treatment market, such as ZLD (Zero Liquid Discharge), will also be accelerated due to reinforced environmental regulations (Doosan Heavy, I., and Construction, 2017, p. 35).

Such trends are then connected to business activities through specified targets and commitments and to the manufactured capital that the company is expected to mobilise to tackle the clean water issue:

> By 2030, through our water project, we will increase the amount of water reserves in the Arabian Peninsula region by 10% (2 billion tonnes) compared to BAU and continuously expand the supply of water resources in all regions around the world that face water shortages. [. . .] Doosan Heavy Industries and Construction's desalination plant project offers seawater desalination, and water treatment plant and water treatment facility solutions based on professional technology. For the entire global population to be able to easily access sanitary water and use sustainable water, we will contribute to solving social issues (Doosan Heavy, I., and Construction, 2017, p. 35).

This approach is coherent and given the maximum score because it is evident how trends and prospects related to the 6Cs will be monitored and tackled going forward.

These examples of materiality, business model and outlook show how we applied our reasoning to the scoring system. The same reasoning was used to score the remaining content elements and guiding principles. The companies used in the examples were selected arbitrarily, mainly because they fully met low and high score requirements. This contrast helped us explain how we translated the reporting practices into numbers. We believe that quantifying capital disclosures against the content elements and guiding principles into a 0–5 scale of integration is crucial to understanding the meaning of the statistical results presented in the next section.

5.2 Integration of the 6Cs in the disclosure

Table 7 presents the descriptive statistics of IDI, content elements and guiding principles.

The average IDI score – calculated as the sum of the score of content elements and guiding principles – was 31.05, with a median value of 31. Across companies, the integration of the 6Cs in the disclosure significantly varies, as shown by the difference of 30 points between the best and worst reporting companies. The best reporting company is Banco Popular Español, which received a score of 43, therefore receiving a score close to the maximum (45). The worst reporting company is Marui Group Co., Ltd, which received a 13 because it disclosed no information about risks and opportunities, business model and outlook, and received only a score of 1 for the three guiding principles. Overall, the average IDI score was above the mid-point score of 22.5 in terms of integrating the 6Cs. However, this integration was not uniform between the content elements and guiding principles.

With the notable exceptions of outlook and business model, the content elements received higher scores than guiding principles. Governance and performance received the highest scores (4.09 out of 5), followed by strategy and risks and opportunities (3.67) and business model (3.32). The highest guiding principle was stakeholder relationships (3.48), followed by materiality (3.27) and connectivity (3.22). The lowest scores were for outlook (2.24), the only item that received below the mid-point score of 2.5. All the items show a median value of 4, except for outlook (2) and connectivity (3). A median value higher than the mid-point score (2.5) implies a negative skewness, while a median value closer to the mid-point score implies a more symmetric distribution.

We also note different degrees of variance across the content elements and guiding principles. The two content elements receiving the highest scores, governance and performance, showed low variance (0.92 and 0.51, respectively). Such a low variance is consistent with a nonuniform distribution of the scores towards the highest values. For example, performance's 1st quartile already corresponds to a score of 4. Conversely, business model, materiality and outlook show a variance of 2.53, 2.51 and 2.50, respectively. Such a high variance reflects a more spread-out distribution of the scores, which is also confirmed by a minimum score of 0 for all three items, while, for governance and performance, the minimum score was 1.

Table 7.
Descriptive statistics of the IDI

Descriptive statistics	IDI	Content elements	Guiding principles	Strategy	Risks and opportunities	Governance	Business model	Performance	Stakeholder relationship	Materiality	Outlook	Connectivity
Mean	31.05	21.08	9.97	3.67	3.67	4.09	3.32	4.09	3.48	3.27	2.24	3.22
Variance	35.13	17.13	8.22	1.62	1.26	0.92	2.53	0.51	2.08	2.51	2.50	0.83
Standard deviation	5.93	4.14	2.87	1.27	1.12	0.96	1.59	0.71	1.44	1.58	1.58	0.91
Number of observations	184	184	184	184	184	184	184	184	184	184	184	184
Minimum	13	10	3	1	0	1	0	1	0	0	0	1
First quartile	27	18	8	3	3	3	2	4	2	2	1	3
Median	31	21	11	4	4	4	4	4	4	4	2	3
Third quartile	36	24	12	5	4	5	5	4.25	5	5	3	4
Maximum	43	30	15	5	5	5	5	5	5	5	5	5

5.3 Integration of the 6Cs in disclosures across sectors and geographical areas
Table 8a shows the IDI, content elements and guiding principles by sector.

Overall, the information and communication sector was the best performer (33.00), followed by the electricity, gas, steam and air conditioning (32.20), manufacturing (30.88) and financial and insurance activities (30.72) sectors. Conversely, the worst-performing sectors were real estate activities (28.00) and wholesale and retail trade (27.13).

It is interesting to highlight the sector scores of some of the content elements and guiding principles. For example, financial insurance and activities received the lowest score for governance (3.75), showing that, on average, even if the governance of such companies is well disclosed, it is not always easy to understand who oversees the 6Cs, especially at the board level.

The electricity, gas, steam and air conditioning sectors show the highest scores for strategy (4.30), governance (4.50), performance (4.40) and connectivity (3.60). However, this sector only scores 2.50 for business models, the lowest sector score for that content element. It follows that, on average, the companies in this sector should disclose how the 6Cs contribute to and are affected by their corporate strategies and who oversees the 6Cs. However, these companies only tend to provide a general description of their business models and often do not include the impacts and outcomes of the 6Cs on their business activities.

Further, we found relevant differences in the integration of the 6Cs across geographical areas (Table 8b). European and African companies had the highest levels of integration of the 6Cs, with an average IDI of 32.88 and 32.36, respectively. Companies in the Australasian region showed a lower level of integration (27.53). On average, African companies showed the highest values for many content elements such as risks and opportunities (4.18), governance (4.65), business model (3.63) and outlook (2.44). European companies received the highest scores only for strategy (4.18) and materiality (4.04) but showed a smaller standard deviation for the IDI (4.93) than their African counterparts (5.97), mirroring a less spread-out distribution of observations around the mean. Lastly, Australasian companies received the lowest scores for the guiding principles of stakeholder relationship (2.70) and materiality (2.58).

5.4 Integration of the 6Cs in the disclosure by report type and presence of sustainable development goals
Table 9 shows the IDI, content elements and guiding principles by type of report and by reference to the SDGs.

Integrated reports received the highest IDI (32.09) compared with annual reports (29.58) and other types of reports (28.71). Moreover, integrated reports show higher values for risks and opportunities (3.86), governance (4.30), business model (3.63), stakeholder relationship (3.63), materiality (3.39) and outlook (2.46) compared with annual reports and other types of reports. On the contrary, integrated reports receive the lowest score for performance, yet high (4.00).

Last, reports mentioning the SDGs or Agenda 2030 show a higher IDI (31.80) than reports not citing the SDGs or Agenda 2030 (30.63). This result is led by better scores for strategy (3.76), performance (4.23), stakeholder relationships (3.53), materiality (3.82), outlook (2.50) and connectivity (3.45).

6. Discussion
The descriptive statistical analysis shows the 6Cs are integrated into the overall disclosures of the sample companies at levels above the mid-point score but with substantial differences

Table 8.
Descriptive statistics of the IDI by sector and geographical area

	N	IDI	Content elements	Guiding principles	Strategy	Risks and opportunities	Governance	Business model	Performance	Stakeholder relationship	Materiality	Outlook	Connectivity
*a) Sector**													
Manufacturing	60	30.88 (5.50)	3.47 (0.66)	3.35 (0.92)	3.50 (1.18)	3.65 (1.15)	4.00 (0.98)	3.30 (1.55)	4.22 (0.52)	3.57 (1.44)	3.23 (1.61)	2.17 (1.47)	3.25 (0.74)
Financial and insurance activities	36	30.72 (5.98)	3.47 (0.64)	3.31 (0.91)	3.92 (1.36)	3.67 (0.94)	3.75 (1.01)	3.22 (1.69)	3.81 (1.05)	3.53 (1.34)	3.19 (1.54)	2.44 (1.72)	3.19 (0.97)
Wholesale and retail trade	15	27.13 (5.77)	3.13 (0.66)	2.78 (0.95)	3.33 (1.25)	3.33 (1.40)	4.07 (0.93)	2.87 (1.59)	4.00 (0.52)	3.13 (1.45)	2.40 (1.45)	1.20 (1.05)	2.80 (0.98)
Information and communication	14	33.00 (4.31)	3.61 (0.51)	3.79 (0.69)	3.86 (1.19)	3.43 (1.12)	4.29 (0.96)	3.86 (1.19)	4.14 (0.35)	4.00 (1.36)	3.93 (1.22)	2.07 (1.39)	3.43 (0.82)
Electricity, gas, steam and air conditioning	10	32.20 (6.45)	3.62 (0.65)	3.50 (1.10)	4.30 (1.10)	3.60 (1.02)	4.50 (0.67)	2.50 (1.63)	4.40 (0.66)	3.60 (1.20)	3.30 (1.79)	2.40 (1.69)	3.60 (1.11)
Real estate activities	10	28.00 (6.43)	3.15 (0.73)	3.03 (1.19)	2.70 (1.55)	3.50 (1.36)	4.10 (0.54)	2.80 (1.94)	3.70 (0.64)	3.00 (1.61)	2.90 (1.70)	2.10 (1.70)	3.20 (0.87)
Other	39	32.90 (5.65)	3.80 (0.70)	3.37 (0.92)	3.87 (1.11)	4.00 (0.99)	4.36 (0.89)	3.74 (1.37)	4.21 (0.65)	3.33 (1.47)	3.56 (1.48)	2.62 (1.58)	3.21 (0.97)
*b) Geographical area***													
Europe	51	32.88 (4.93)	3.60 (0.64)	3.75 (0.93)	4.18 (1.13)	3.78 (0.85)	3.69 (1.15)	3.47 (1.56)	4.10 (0.57)	3.67 (1.42)	4.04 (1.47)	2.41 (1.67)	3.55 (0.89)
Australasia	53	27.53 (5.49)	3.18 (0.61)	2.82 (1.00)	3.53 (1.19)	2.94 (1.19)	3.70 (0.74)	2.72 (1.70)	4.28 (0.53)	2.70 (1.37)	2.58 (1.90)	1.91 (1.59)	3.17 (0.86)
Americas	8	30.88 (3.72)	3.31 (0.43)	3.67 (0.60)	3.25 (1.09)	3.25 (1.09)	4.13 (0.60)	3.50 (1.12)	4.25 (0.43)	3.38 (0.99)	3.75 (1.20)	1.50 (1.58)	3.88 (0.78)
Africa	72	32.36 (5.97)	3.72 (0.71)	3.35 (0.78)	3.47 (1.34)	4.18 (0.93)	4.65 (0.65)	3.63 (1.45)	3.93 (0.89)	3.93 (1.31)	3.17 (1.13)	2.44 (1.43)	2.96 (0.86)

Notes: Standard deviation in parentheses; *mean difference for the IDI was assessed through one-way ANOVA statistics returning a p-value > 0.05 (F = 2.62); **mean difference for the IDI was assessed through one-way ANOVA statistics returning a p-value > 0.01 (F = 10.37)

a) Type of report													
Integrated report	115	32.09 (6.09)	3.64 (0.72)	3.41 (0.87)	3.60 (1.27)	3.86 (1.11)	4.30 (0.89)	3.63 (1.42)	4.00 (0.80)	3.63 (1.42)	3.39 (1.39)	2.46 (1.61)	3.23 (0.94)
Annual report	48	29.58 (4.97)	3.35 (0.56)	3.17 (1.06)	3.90 (1.19)	3.29 (0.98)	3.73 (0.95)	2.94 (1.68)	4.21 (0.50)	3.17 (1.43)	3.13 (1.82)	2.02 (1.46)	3.21 (0.84)
Other	21	28.71 (5.67)	3.20 (0.59)	3.17 (1.09)	3.57 (1.40)	3.52 (1.26)	3.76 (0.97)	2.48 (1.79)	4.33 (0.47)	3.38 (1.43)	2.90 (1.87)	1.52 (1.40)	3.24 (0.87)
b) SDGs or Agenda 2030													
SDG presence	66	31.80* (5.17)	3.50 (0.67)	3.60 (0.84)	3.76 (1.28)	3.61 (1.09)	3.85 (1.03)	3.06 (1.70)	4.23 (0.52)	3.53 (1.38)	3.82 (1.51)	2.50 (1.57)	3.45 (0.76)
SDG absence	118	30.63* (6.27)	3.52 (0.70)	3.17 (0.98)	3.63 (1.27)	3.71 (1.14)	4.22 (0.88)	3.46 (1.51)	4.02 (0.79)	3.45 (1.47)	2.96 (1.54)	2.09 (1.57)	3.09 (0.96)

Notes: Standard deviation in parentheses; a) mean difference for the IDI was assessed through one-way ANOVA statistics returning a p-value > 0.01 (F = 5.05); b) mean difference for the IDI was assessed through t-test statistics; * = $p < 0.1$; ** = $p < 0.05$; *** = $p < 0.01$

Table 9. Descriptive statistics of the IDI by type of report and SDG presence

across content elements and guiding principles. From this, we gather that the companies are aware of the multi-capital approach to value creation – at least in their disclosures, if not in their day-to-day business activities – and of the integration of the 6Cs into content elements and guiding principles (Adams, 2017). However, variances across content elements and guiding principles imply that companies integrate the 6Cs into their performance and governance more consistently than, for example, their business models and outlooks.

Business models and outlook aside, we concluded that the companies understood most of the content elements selected for our analysis. Further, the companies showed no striking difficulties in providing some information on how the 6Cs were integrated into such content elements. A high score is not surprising because the reason for issuing an integrated report is to be accountable for and provide information on types of performance other than the financial (IIRC, 2021). The relatively low score for business models (3.32) is mainly because of the difficulties companies have in assessing the broad outcomes of their business activities on different types of capital. Such difficulties were reflected in the feedback provided by companies regarding the IR framework (IIRC, 2017). Even though business models can help companies to narrate their (multi-capital) value-creation story (Beattie and Smith, 2013), more attention needs to be paid to the impact of such business models on the types of capital.

We argue that the relatively low scores for materiality, stakeholder relationship and outlook are problematic and signal a prevalence of form over substance. On the one hand, a low score for outlook implies that reporting companies, on average, do not disclose scenarios and plans regarding the company's medium- and long-term prospects. Indeed, an average score of 2.24 for outlook corresponds merely to qualitative or quantitative information regarding the company's outlook being disclosed, without significant reference to the 6Cs. Moreover, if we take together the scores for materiality (3.27) and stakeholder relationship (3.48), it emerges that the disclosure of the 6Cs in integrated reports is relevant only to a certain extent. On the one hand, a score of 3 for materiality corresponds to material issues – also involving the 6Cs – being disclosed, but no information on actions taken to address these issues is reported. On the other hand, a score of 3 for stakeholder relationship signals that, while there are interactions between the company and its stakeholders, no information is present on the method of engagement or on the different sub-processes that must inform the stakeholder relationship (Safari and Areeb, 2020).

In attempting to make sense of such scores for materiality, stakeholder relationship and outlook, we were confronted by the intrinsic difficulty companies may have in producing forward-looking information. Establishing a well-developed materiality process that engages internal and external stakeholders by understanding all relevant aspects, prioritising them and proposing and selecting courses of action to tackle the relevant emerging issues is not trivial. The process of establishing and nurturing relations with relevant stakeholders is also a substantial one. Such processes are costly in terms of tangible and intangible resources and require time to be conceived, implemented and maintained over time (Edgley *et al.*, 2015; Herremans *et al.*, 2016; Beske *et al.*, 2020). Moreover, forecasting is a difficult activity because it is costly and because of the uncertainty surrounding complex events and unique problems (Kay and King, 2020; Lakshan *et al.*, 2021). In such contexts of uncertainty, formulating plans, scenarios and forecasts on organisational outlooks might be challenging when not misleading. Therefore, we are left wondering whether low scores for materiality, stakeholder relationships and outlook originate from the unwillingness of companies to disclose information or from the difficulty of producing and collecting information in the first place (Beske *et al.*, 2020; Lakshan *et al.*, 2021). Further research could build on our findings to corroborate or counter such speculations.

Concerning the differences observed across geographical areas, the high IDI for the African companies is mainly because of the confounding effect of the governance score. Notably, the scores for governance are high in the South African subsample. As Dumay *et al.* (2016) explain, IR in South Africa is connected to the *King Report on Governance for South Africa*, and the King Code (The Institute of Directors in Southern Africa, 2016, p. 28) requires companies listed on the Johannesburg Stock Exchange to issue an integrated report disclosing "the matters that could significantly affect the organisation's ability to create value". It follows that, compared with the other companies in our sample, African companies should disclose more information about the integration of the 6Cs into their governance systems because they face more pressure to do so. Therefore, the South African institutional context appears to influence the disclosure of the 6Cs in the integrated reports of these firms.

We also offer a possible explanation for the high IDI that companies in the electricity, gas, steam and air conditioning sectors received. The GRI (2020) includes such a sector on the priority list of sectors with serious sustainability impacts. We maintain that a high IDI could be because of such companies facing high stakeholder pressure to address and manage their impacts. Because the IDI does not measure the performance in terms of the 6Cs but measures the disclosure of such capitals in the reports, companies belonging to a sustainability-sensitive sector may want to convey a high level of integration of the 6Cs into their disclosure. It is beyond the scope of this research to assess whether such a high level of disclosure is a consequence of greenwashing or impression management activities, willingness to secure the organisation's license to operate through legitimacy practices or simply a signalling behaviour for higher underlying performance. Nonetheless, we think that deepening this analysis could provide fruitful future research.

In conclusion, even though reporting companies appear to have grasped how to integrate the 6Cs on a few of the content elements of the IR framework, there is still some margin to improve the relevance of such disclosures for making stakeholders aware of value creation in the short, medium and long term. Thus, the form of the integrated report appears sufficient, but the substance of the disclosures in the 6Cs remains problematic.

7. Conclusion

More than a decade has passed since the first draft of the IR framework was released in 2011. In the past couple of years, many changes have invested the IR movement casting doubts on whether and how the IR framework will survive such changes. In this concluding section, we offer our thoughts grounded in the results of our research and reflect on how our research contributes to the unfolding debate on such recent changes.

7.1 Research timeliness and relevance

Our research is timely and relevant. The merger between the IIRC and the SASB into the VRF took place in June 2021. The stated objective of the VRF is to push – not to substitute – IR, integrated thinking and sustainability standards for enterprise value creation to become the corporate reporting norm and create a "more comprehensive and coherent corporate reporting system" (VRF, 2020). It follows that the VRF's (2020) aim is not that far from the IIRC's (2021) aim to improve the disclosures on matters relevant to value creation and enhance accountability and stewardship on the 6Cs. Therefore, integrating IR with the SASB standards might strengthen the substance of the reports through the promotion of sector-specific, comparable and standardised qualitative and quantitative disclosure.

The newly established ISSB and the announced incorporation of the VRF into the IFRS Foundation may pose a further challenge to the IR framework because the IIRC and the IFRS Foundation cover nearly the same normative, investor-centric space in the corporate reporting landscape (Barker and Teixeira, 2020; Pigatto *et al.*, 2022). Following the intent to work together expressed by the five major corporate reporting institutions – GRI, SASB, CDSB, IIRC and CDP – it is reasonable to expect a simplification of the standards and frameworks being consolidated into the IFRS Foundation (2021). Ultimately, we speculate that if the IR framework's content elements, guiding principles and fundamental concepts are easily understood by companies and can effectively enhance the reports' substance, they will be more likely to survive and become an integral part of the new ISSB standards. If not, they might just be discarded from the upcoming ISSB standards and fade away like other passing reporting fads have disappeared in the past (Burritt and Schaltegger, 2010; Vinnari and Laine, 2013; Dumay, 2020). Whether the first or the latter option will materialise is something we cannot predict. However, our and other studies on IR (Liu *et al.*, 2019; Pistoni *et al.*, 2018) show that there is still significant work to be done by IR proponents to enhance the substance of integrated reports.

We argue for a more holistic instrument, the IDI, for assessing the substance of integrated reports compared with what has been proposed by other research and what is found in the current VRF pillars. The integration is necessary for the IIRC and SASB to ensure that IR, the principles of integrated thinking and the SASB standards do not themselves remain siloed. Ultimately, the success of the IIRC and SASB merger will be measured in how well the IIRC framework and the SASB standards harmonise with the new ISSB standards.

7.2 Contributions

In this paper, we analysed the quality of disclosures in integrated reports by measuring the level to which the 6Cs have been integrated into disclosures on six of the IR framework's nine content elements and three of its seven guiding principles. In contrast to previous research on IR quality (Pistoni *et al.*, 2018; Liu *et al.*, 2019), we developed a disclosure index that captures the degree of integration rather than using a disclosure index that measures the elements, principles and capitals in isolation. Therefore, this paper offers several contributions that are relevant to different actors.

By critically discussing and questioning the extant academic literature on the quality of integrated reports, we made a case for a more holistic measurement of the integration of such capitals, which goes beyond measuring the mere mention of an element, principle or capital. This change in focus, in our view, is necessary to grasp better the objectives on which IR has been developed. We hope other researchers will also follow such a change. This paper provides a novel index to the academic debate on the substance of integrated reports – an index to assess how well the 6Cs have been integrated into disclosures on the content elements and guiding principles. The examples of how reporting practices can be translated into scores show why it is necessary to understand the meaning of what companies disclose. Notwithstanding the recent technological developments in content analysis software, we believe that the type of content analysis that targets the meaning of the disclosures cannot always be demanded from software. Rather, as in our case, it needs to be performed by human beings.

By highlighting the differences in reporting practices between content elements and guiding principles, we urge the IIRC to acknowledge and tackle such differences. In other words, we argue that the IIRC must understand that certain elements and principles indicate a low level of integration of the types of capital, even though such elements and principles are of paramount importance for the objectives of the IIRC. A low score for outlook implies that the long-term outlook IR strives to achieve is not being disclosed. Therefore, it is, arguably, not being implemented by reporting companies. Moreover, relatively low scores for materiality and stakeholder relationships suggest that the disclosures made in integrated reports may not be relevant to stakeholders.

Such results risk undermining the alignment of the IIRC's value creation model with the SDGs proposed by Adams *et al.* (2020). If the substance of value creation disclosures is questioned because of a lack of a long-term outlook and relevance, one could argue that the alignment with the SDGs could suffer from the same weaknesses. On the one hand, we still acknowledge the IR framework's potential to help organisations consider the complex interrelationships of multi-capital value creation and sustainable development (Coulson *et al.*, 2015; Adams, 2017; Adams *et al.*, 2020). On the other hand, our research findings lead us to conclude that there is still a long journey ahead for reporting organisations to move from formal to substantial disclosure. If the disclosure of the materiality process and stakeholder relationship is not convincing, one must question the overall relevance of what has been disclosed in the other parts of the integrated report. Moreover, if a discussion of the relevant capitals for the business is not provided, one should treat the qualitative and quantitative disclosure of the impacts of the business activities on such capitals with caution.

However, companies labelling their reports as "integrated" and explicitly referencing the SDGs or Agenda 2030 receive higher IDI and, therefore, seem to differentiate their approach to value creation from traditional financial reporting (Adams, 2017; IIRC, 2019). A possible explanation is that companies explicitly labelling their reports as "integrated" show a greater willingness to draw on the IR framework as both a general guide for their reports and a distinguishing characteristic of their reports. Also, companies referencing the SDGs show they are knowledgeable about one of the latest developments in the sustainable development movement and willing to disclose the SDGs in their reports. Deepening these considerations was beyond the scope of this research. Therefore, we call on further research to unravel whether the attention of some companies towards the SDGs has been a signal of a true differentiation from traditional financial reporting or to get on the latest bandwagon or reporting fad (Vinnari and Laine, 2013).

7.3 Limitations

Our study also has limits. First, our sample only spans one year. This choice was intentionally made to avoid institutional and regulatory changes occurring over time, and it is coherent with previous research on the content of reports [see, for example, Kılıç and Kuzey (2018a, 2018b), Melloni (2015) and Melloni *et al.* (2016)]. However, further research may assess whether the integration of the 6Cs has evolved and whether the disclosure of specific elements and principles has changed in subsequent years.

Second, the IDI assesses the extent to which the 6Cs are integrated into content elements and guiding principles but does not capture whether reporting organisations report trade-offs among the 6Cs. Furthermore, we recognise that measuring the disclosure of trade-offs in corporate reports is challenging from a practical standpoint and requires a deep theoretical and methodological analysis. Further research might tackle this issue also, considering that trade-offs are expected to concern the 6Cs and SDGs (Bebbington and Unerman, 2018, 2020). Therefore, we call on further research to enlarge and refine the IDI to include such concerns.

Third, the overall disclosure quality (IDI) has been calculated by adding the scores of elements and principles with equal weights. Even though the differences in the scores for single content elements and guiding principles have been discussed at length, further research could assign different weights to these items to produce a hierarchical order across elements and principles. Therefore, research going in this direction could enhance the IDI's validity. In our research, said validity was grounded in the theoretical, literature-led construction of the IDI and on the three-step methodology validated by the researchers. Notwithstanding that such an approach to validation has been used in previous research (Liu *et al.*, 2019), further validation of the IDI might be needed through, for example, experimental research and focus group research methods involving report preparers and users.

Fourth, our score for connectivity is a combination of binary variables capturing the presence or absence of connectivity of information among the types of capital; among content elements; among the past, present and future; between financial and other information; and between qualitative and quantitative information. Even though we made this choice purposefully to grasp the breadth of connectivity – rather than its depth – we acknowledge that this scoring system may suffer from the same drawbacks of Liu *et al.*'s (2019) research. Therefore, we urge researchers to refine and propose novel ways to capture the depth of connectivity of information disclosure.

Fifth, our sample only included listed companies. Even though this choice is in line with IIRC's focus on the providers of financial capital, further research could address this limitation by expanding the analysis of integrated reports to non-listed companies, such as small- and medium-sized enterprises.

Finally, using IIRC's Integrated Reporting Examples Database may bias our results, as it contains reports considered benchmarks for the quality of the disclosure of guiding principles and content elements. Therefore, our results are not generalisable to all companies producing reports inspired by the IR framework. We argue that our conclusions are still relevant because we identified issues in reporting practices (i.e. materiality, outlook, stakeholder relationship and business model). Thus, we expect these issues will be even more relevant to companies not included in the database. However, we call for further research to verify and discuss such a claim.

7.4 Future research and integrated reporting

As is evident from this paper, our research plunges into the terminology and ideology of the IIRC. We do not imply that we blindly buy into their ideology, and we do acknowledge the contribution of numerous critical studies on the limits of IR and the IIRC (Dumay, 2020; Flower, 2015; Thomson, 2015). However, we intended to begin from the IIRC's desire for IR to "become the corporate reporting norm" (IIRC, 2021, p. 2) to investigate the extent the building blocks on which IR stands are understood, translated and communicated by reporting companies thus far. We hope that the holistic approach to assessing the substance of reports we have developed in this paper may prompt researchers to adopt a broader view of disclosure in integrated reports, thereby focusing the research on the essence of corporate reporting, not just IR.

Assessing the substance of reports is only a first step to understanding whether the IIRC's (2021, p. 2) stated vision to have a "world in which integrated thinking is embedded within mainstream business practice in the public and private sectors" will ever come true. We believe there is room for fruitful case study research investigating whether the reports reflect underlying practices to understand if IR lives up to such a vision.

However, any further research into IR will now need to be framed in the context of the new ISSB guidelines and will also depend on the extent to which integrated thinking, the IIRC framework and even the SASB standards are part of the new framework. While critics of corporate reporting are concerned about the alphabet soup of corporate reporting, the new

ISSB standards and the harmonisation of several frameworks and guidelines could result in a sweet potpourri of principles, capitals and elements. However, it could also result in a confusing kaleidoscope that tries to appease the proponents of each merging framework rather than developing a set of coherent standards. The latter outcome would cause more confusion than it resolves; thus, IR could get lost within the kaleidoscope and the ensuing colourful debates about the future of corporate reporting.

Notes

1. In our research, we use the term *substance* in opposition to the term *form* to distinguish between reports that extensively disclose the 6Cs in content elements and guiding principles from those that only describe content elements and guiding principles without referencing the 6Cs.
2. In 2021, the IIRC released an updated version of the IR framework. In the updated framework, the IIRC (2021) did not make significant changes to IR content elements, guiding principles and the 6Cs. Therefore, even if our study is conducted on 2016 reports using the 2013 IR framework, we will reference the most recent IR framework throughout the paper.

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Corresponding author

Giacomo Pigatto can be contacted at: giacomo.pigatto@santannapisa.it

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