

A review of integrated thinking research in developed and developing economies

Dusan Ecim and Warren Maroun

School of Accountancy, University of the Witwatersrand, Johannesburg, South Africa

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Abstract

Purpose – This paper assesses the state and development of integrated thinking research in selected developed and developing economies by providing a “stock taking” of the literature included in the Scopus Database based on filtered criteria.

Design/methodology/approach – A search was performed on the Scopus Database and all sources containing “integrated thinking” in the title, abstract, or keywords were extracted. A total of 98 sources from 2011–2021 are analysed. These are coded with the support of a content analysis and a bibliometric analysis to determine research objectives and methods, affiliations, the locus of enquiry and epistemological perspectives.

Findings – There is a steady increase in attention devoted to integrated thinking research. The earliest studies were concerned primarily with the type of extra-financial information being included in an organisation’s reports. This has given way to studies concerned with the operationalisation of integrated thinking. The current research has predominantly focussed on non-positivist epistemologies at the macro- and meso-levels with limited research undertaken at organisational levels.

Practical implications – Research on integrated thinking is particularly relevant in the context of developing economies where integrated thinking can be used as a means to value-creation, sustainable development and stakeholder inclusivity.

Social implications – This paper provides a useful reference for practitioners, academics and journal editors interested in the development of integrated thinking research.

Originality/value – This paper highlights the need for more active research on integrated thinking and reporting in developing economies because much of what has been published to date comes from developed nations. This paper provides an overview of the state of integrated thinking research and presents important areas for future research.

Keywords Integrated thinking, Integrated reporting, Developing economies, Sustainability

Paper type Literature review

1. Introduction

“Integrated thinking” can be defined as follows:

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. Integrated thinking leads to integrated decision-making and actions that consider the creation, preservation or erosion of value over the short-, medium- and long-term (IIRC, 2021b, p. 3).

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“Value” is understood broadly as not only monetary benefits inherent in an organisation but the balancing of economic, environmental and social imperatives in the interest of sustainable development over time (Roberts *et al.*, 2020). As explained by the International Integrated Reporting Council’s (IIRC) *International Integrated Reporting Framework* (the Framework),

Value created, preserved or eroded by an organization over time manifests itself in increases, decreases or transformations of the capitals caused by the organization’s business activities and outputs (IIRC, 2021b).

Value is generated for the “organisation itself”, allowing it to provide financial returns for investors and creditors. It must be generated responsibly so as not to compromise the quality of life of future generations (IIRC, 2021b). Value, as viewed through the lens of capital maintenance, can be difficult to quantify and measure, particularly given that the trade-offs and enhancements between capitals may lack clarity (Nobes, 2015; Adams, 2017). There is a need to develop guidance on identifying and prioritising the different capitals in the IIRC’s framework and determining the material capital interactions and clarifying how to balance investors’ needs with those of other stakeholders. It follows that integrated thinking is about the proactive management of an organisation’s strategy, risk management, business model and core operations to maximise a pluralistic conceptualisation of value.

Social and environmental factors must be understood and managed as material considerations in their own right, with organisations held accountable for more than just the financial returns (Gray, 2006; Adams and Evans, 2004). Initiatives like sustainability reporting, environmental costing and other forms of “green accounting” must be substantive. They must result not only in changes in the nature and extent of information reported to the public, but also an expanded system of performance accounting and management control which enables accountability for social and environmental impact in addition to profit generation (Adams, 2004).

Given the above, integrated thinking is not characterised by a logic of compliance with codes of best practice. When internalised fully, integrated thinking should lead to more robust business strategies, risk identification and internal management which allows organisations to manage better the resources at their disposal and generate value for the benefits of investors and other stakeholders (Stubbs and Higgins, 2014; Barth *et al.*, 2017). This can give rise to more transparent and multi-capital reporting which lowers information asymmetry, bolsters legitimacy and informs reflexively how organisations operate (Beck *et al.*, 2015; Rinaldi, 2020; IRCSA, 2018).

Given the concerns about the state of the environment, social challenges and, more recently, global health threats, organisations are coming under increasing pressure to apply an integrated thinking philosophy (Malafronte and Pereira, 2021; Atkins *et al.*, 2020). Whilst different sources have explored the background to integrated thinking (e.g. Baboukardos *et al.*, 2021; Herath *et al.*, 2021; Malafronte and Pereira, 2021; Rossi and Luque-Vílchez, 2020), there are no comprehensive reviews of how integrated thinking is developing and being applied.

A content and bibliometric analysis is used to assess 98 academic sources included in the Scopus Database from 2011 to 2021 dealing specifically with integrated thinking. The aspects or features of integrated thinking are summarised and classified, complemented by details of the journals in which this research is published, epistemological frameworks adopted and research methods applied.

The current paper provides a useful reference for practitioners and academics interested in the emergence and development of integrated thinking. There is a need for more active research on integrated thinking and reporting progress in developing economies because much of what has been published comes from (and about) developed nations. Ultimately, this

paper provides a “stock taking” of the integrated thinking literature and provides areas for future research to continue the debate on how integrated thinking can be applied to achieve sustainability.

The remainder of this paper is structured as follows. [Section 2](#) details the search protocol established to obtain the academic sources and the methodology applied to assess the publications and [Section 3](#) provides an overview of integrated thinking. [Section 4](#) presents an overview of the volume of research dealing with integrated thinking whilst [Section 5](#) analyses the coverage of the research. [Section 6](#) discusses the locus of research, epistemological perspectives and methodologies used in integrated thinking research. Finally, [Section 7](#) presents the conclusions and future areas for research.

2. Search protocol

Following a similar approach to [Dumay et al. \(2016\)](#) and [Rinaldi et al. \(2018\)](#), the authors/researchers focussed on internationally recognised journals. However, rather than limiting the search to only top-tier journals according to certain rankings, the Scopus Database was used to obtain academic sources. This database was selected because of the quality of its filtering criteria ([Dumay et al., 2016](#); [Rinaldi et al., 2018](#)) and the fact that it includes journals of good standing with robust peer-review processes in place.

A search was performed for articles published in the Scopus Database with “integrated thinking” in their titles, keywords or abstracts. The subjects were filtered and limited to incorporate integrated thinking in the areas as follows: business, finance, accounting, assurance, economics, risk, governance, ethics, policy, sustainability, capitals, strategy and management [1]. All document types were assessed and included “final” and “in press” publications. The start date for the search was 2011 being the year when the IIRC published its first discussion paper on integrated reporting. All papers from 1 January 2011 to 31 August 2021 were considered.

The initial results consisted of 121 documents. Each document was assessed to confirm its relevance for the current study ([Dumay et al., 2016](#)). The authors read the title, abstract and contents of each document (as per [Dumay et al., 2016](#)). Documents that did not meet the focus on integrated thinking were excluded [2] and any discrepancies were resolved by the authors before the articles were further coded.

The researchers took steps to ensure the completeness of the “integrated thinking search”. First, the search was re-run after six months (but for the same period) to ensure that no relevant papers were omitted. Second, the filtering protocols were widened to include “integrated reporting” and “sustainability reporting”. Papers dealing with “integrated reporting” or “sustainability reporting” may provide evidence of integrated thinking in action ([Adams et al., 2020](#); [Herath et al., 2021](#)) despite the fact that “integrated thinking” may not be referred to explicitly in the sources’ titles, keywords and abstracts. The additional papers were screened to ensure that they did not deal only with integrated reporting and sustainable development in general but examined how strategies and business models, operating processes, management practices, accounting systems and governance structures are being developed in response to the multi-capital business logic envisioned by the IIRC (2021a, b). Similarly, papers which dealt with what companies disclose in their corporate reports or the value relevance of extra-financial reporting were not automatically included in the analysis (approach adapted from [Rinaldi et al., 2018](#)). The authors did a search for papers which refer to prominent frameworks/guidelines on extra-financial information such as those issued by Global Reporting Initiative (GRI), the Natural Capital Collation and the Task Force for Climate-Related Financial Disclosures. This returned a large number of sources which were ranked according to their citation count. The top 20 papers by citation per category were reviewed to determine if they covered integrated thinking as a focal point [3].

Finally, the current paper assumes that researchers flag the key themes of their papers in the titles, keywords and abstracts. This assumption is a reasonable one considering the standing of the Scopus Database and the peer-review process followed by the journals included in it but the risk that relevant papers have been excluded cannot be reduced to zero. If the focus of a small number of articles was not reflected in their title, keywords or abstract, this potential for error would not materially impact the results of the study (Rinaldi *et al.*, 2018).

Another limitation is that, by relying on the Scopus Database, other relevant articles could be overlooked. This is not considered a material issue for the current paper because the intention is not to provide a comprehensive count of the number of papers dealing with integrated thinking but a sense of the direction being taken by the integrated thinking research and the contribution from developing economies. The development of integrated thinking themes is explored in Section 5; however, this paper does not aim to resolve the gaps in the research, but rather to highlight these areas for future research (Section 7) and provide a “stock taking” of a body of literature.

After controlling for possible omissions, and subject to the inherent limitations noted above, 98 academic sources which had a relevant reference to integrated thinking as defined in this paper were identified [4]. The type of academic sources has been split between journal articles (72%), book chapters (10%), reviews (9%), conference papers (6%) and notes (2%). The academic sources linked to developing/emerging economies were also stratified to assess the state of integrated thinking research in those countries. The developing economies which have contributed to research on integrated thinking include South Africa, Brazil, China, Indonesia, Malaysia, Russia and Turkey [5]. No other developing economies produced material research on integrated thinking during the study period.

2.1 Content analysis

Each source was classified according to research objectives, methodology, locus of enquiry and epistemology (see Table 1). Where a source did not fit neatly into a single research typology, it was assigned to the most appropriate category (adapted from Dumay *et al.*, 2016; Rinaldi *et al.*, 2018; Maroun and Jonker, 2014).

Coding sources required professional judgement to ensure that researcher bias and unintended restrictions on the scope of the analysis were avoided (informed by Rinaldi *et al.*, 2018; De Villiers *et al.*, 2019). As additional sources were accessed and reviewed, paper classifications were revisited and revised as necessary. Results were recorded in a theme or classification table and re-examined six months after the initial coding was completed to ensure accuracy and consistency. Preliminary results were tabled at two informal meetings of a research and professional accounting group at the researchers’ home institution to confirm that the coding process was accurate and complete. A bibliometric analysis was then performed.

2.2 Bibliometric analysis

The bibliometric analysis provides an overview of the relationship, volume and impact of the research through various techniques, frequency analysis, citation analysis, authorship and country affiliation analysis (Lopes and Penela, 2021; Zupic and Čater, 2015). Bibliometric tools including citation, co-citation, bibliographic-coupling and keyword co-occurrence analyses are applied to the 98 academic sources (Van Eck and Waltman, 2017).

The citation analysis assesses the most-cited authors, publications and topics whilst the co-citation analysis illustrates the frequency and similarity of articles where two or more authors are cited together (Zupic and Čater, 2015; Caputo *et al.*, 2021). The bibliographic-

Table 1.
Coding of the academic publications

Characteristic	Details
1 Publication information	The content and year of the publication, number of citations, link strength, abstract and keywords
2 Research objectives	The purpose and aim of the research
3 Key themes	The focus of the research categorised as integrated thinking, integrated reporting, sustainable development or a combination of the three areas
4 Place of publication and affiliations	The journal that the paper was published in and the affiliated universities, authors and their home countries
5 Research methods	Research methods are split into the following categories: case study, commentary/normative/policy, content/historical analysis, survey/questionnaire/other empirical research
6 Locus of enquiry	The research is classified as macro-, meso- or micro-level research. The macro-level explores social structures and their relevance for integrated thinking. Meso-level papers deal with how organisations are interpreting/applying an integrated thinking philosophy. The micro-level examines the application of integrated thinking by specific organisations/governing bodies (adapted from Rinaldi et al., 2018)
7 Epistemological paradigm	The epistemology is assessed as either positivist (quantitative subject matter focusses on a discreet set of objective ideas), interpretive (qualitative, subjective understanding of social constructions) or critical (normative and advances particular viewpoints, encouraging social critique and radical change) (adapted from Maroun and Jonker, 2014)

coupling analysis measures the similarity between two documents regarding the number of references and infers common topics based on other cited articles (ibid). Keyword co-occurrence analysis maps the frequency of articles with the same keywords ([Zupic and Čater, 2015](#)). This is indicative of articles which have connected themes ([Caputo et al., 2021](#)). This analysis allows for the research themes and future avenues of research for integrated thinking as a concept to be identified and developed (see [Section 7](#)). In line with other bibliometric studies ([Bellucci et al., 2020](#); [Lopes and Penela, 2021](#)), VOSviewer software (see [Van Eck and Waltman, 2017](#)) is used to generate textual and graphic representations of the results.

3. Overview of integrated thinking

In 2013, the IIRC published the Framework intending to go beyond existing sustainability reporting by integrating financial, environmental and social metrics to report comprehensively on how value is generated over the short, medium and long term ([IIRC, 2021b](#)). The Framework refers explicitly to integrated thinking and the importance of “embedding” integrated thinking in “mainstream business practice in the public and private sectors” ([IIRC, 2021b](#), p. 2) to promote financial stability and sustainable development. Whilst providers of financial capital play a critical role in the broader integrated thinking framework, the legitimate needs of a broader group of stakeholders must be considered ([IIRC, 2021b](#)).

Key features of integrated thinking include (1) responding to stakeholders’ legitimate needs and interests, (2) evaluating, managing and capitalising on risks and opportunities in the external environment, (3) assessing the interdependencies amongst activities and capitals [6] together with the resulting trade-offs and outcomes and (4) a multi-timeframe analysis of activities, performance and outcomes (adapted from [IIRC, 2021a, b](#)). The Framework was revised in January 2021, amending the definition of integrated thinking. It clarified the point that integrated thinking considers not only the creation, but also the preservation and erosion of value ([IIRC, 2021b](#)).

Despite the importance of integrated thinking, there is no detailed guidance on how organisations can implement it and how stakeholders can gauge the levels of integrated thinking amongst entities (Tweedie and Martinov-Bennie, 2015; Malafronte and Pereira, 2021; Busco *et al.*, 2021). Much of the academic research has focussed on the determinants of integrated reporting (e.g. De Villiers and Maroun, 2018; Prinsloo and Maroun, 2021; Busco *et al.*, 2019) and gauging the quality of integrated reports (e.g. Malola and Maroun, 2019; Prinsloo and Maroun, 2021). The assumption is that high-quality reporting is indicative of an integrated thinking philosophy at work which, although a reasonable proposition, needs to be examined empirically by evaluating directly the interconnection between how organisations actually operate and manage their strategic imperatives and how they choose to report to their stakeholders. A related body of work assesses the value-relevance of integrated reports (e.g. Zhou *et al.*, 2017; Barth *et al.*, 2017; Haller and van Staden, 2014) often by testing for associations between proxy measures for report quality and financial indicators such as share prices. There is ample precedent to support this type of positivist-inspired work which appears in several international journals of high regard. Nevertheless, more needs to be done to explicate exactly how internal processes, management systems and business models are informed by an integrated thinking mindset and the actual mechanisms by which this results in increases in financial value for shareholders and other sources of value for non-shareholding stakeholders. Any insights into integrated thinking are mostly indirect, necessitating a more detailed examination of how research dealing specifically with integrated thinking is developing.

4. Overview of the volume of research dealing with integrated thinking and where it is published

Figure 1 shows a significant increase in the number of papers published which deal specifically with integrated thinking.

In contrast to early types of social and environmental reporting which are well established (Guthrie and Parker, 1989; Gray, 1990), integrated reporting is a relatively recent development. Nevertheless, “organisational practices in this area have developed rapidly” (De Villiers *et al.*, 2014, p. 1043). It is possible that these advancements are the result of organisations internalising integrated thinking principles (see, for example, McNally and Maroun, 2018; Bridges and Yeoman, 2020; Dumay and Dai, 2017), something which is stimulating interest in the topic from both the academic and practitioner community.

At the business level, Novo Nordisk is credited with being a leader in advancing extra-financial reporting. Their position that additional disclosure was not only required to report transparently to stakeholders, but also informed by a holistic approach to managing economic, environmental and social imperatives is indicative of an underlying integrated thinking philosophy (see Dey and Burns, 2010). At the country level, South



Figure 1.
Number of academic sources focussing on integrated thinking

Africa is widely regarded as an integrated reporting and thinking pioneer because it was the first jurisdiction to outline these concepts in codes of corporate governance (De Villiers *et al.*, 2014). South African-listed companies are also required to prepare an integrated report or to explain why they have not done so (see IOD, 2016). Whilst integrated reporting does not have direct legal backing, it has gained traction in South Africa and other jurisdictions such as the UK, Italy, Australia, New Zealand, USA, Brazil, Russia, India, Malaysia, Singapore and Japan (IRCSA, 2018; VRF, 2022). Unsurprisingly, many of these countries also account for the increase in integrated thinking research as shown by Figure 2.

Italy contributes 22% to the total integrated thinking publications followed by the UK (19%). Interestingly, whilst South Africa has played a leading role in advancing integrated reporting and thinking, it ranks joint third with Australia (12%) in terms of total research output. This may be the result of South African universities prioritising professional training over research as documented by earlier studies on the research productivity of South African scholars (Venter and de Villiers, 2013).

Malaysia (5% of publications) is the only other developing economy making a significant contribution to integrated thinking research. Other developing economies contributing to integrated thinking research include Russia (3%), Turkey (un-tabulated: 2%) and Brazil, China and Indonesia (un-tabulated: 1% each). Of the 98 publications, 26% are contributions from developing economies (25 publications in total) with almost half of these contributions from South Africa (48%). The low contribution of research from developing economies is surprising as integrated reporting and thinking are intended to help organisations tackle pressing social and environmental challenges, many of which are having serious impacts on the developing world.

A possible explanation is a lack of funding, both for higher education and long-term research projects, in developing countries compared to their more economically prosperous counterparts. Examining publications by universities provides additional insights.

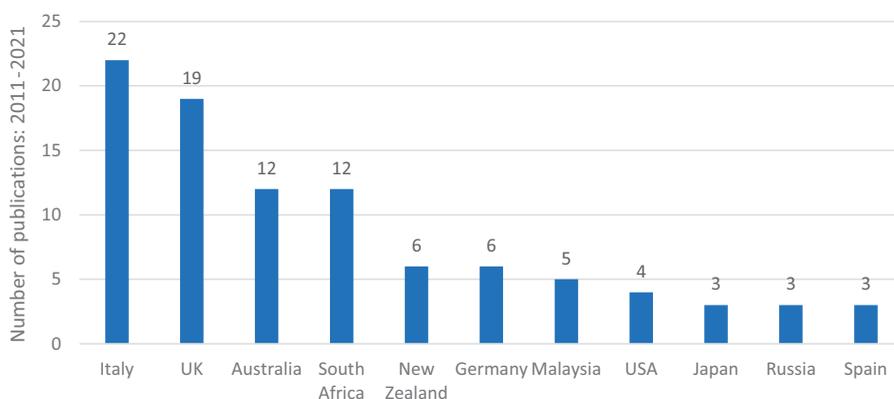
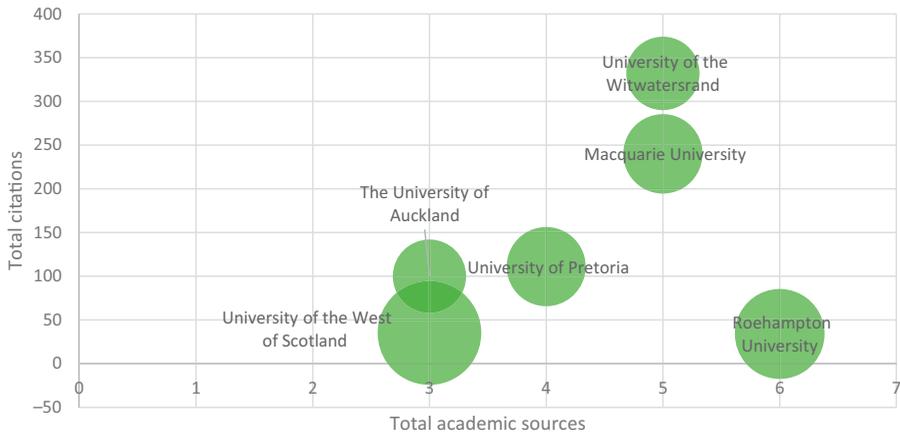


Figure 2. Integrated thinking research by jurisdiction

4.1 Publications by university

In total, 225 authors authored or co-authored the 98 academic sources dealing with integrated thinking and have amassed 1 265 citations. Figure 3 highlights the most prolific universities contributing to integrated thinking research with three or more publications. The total academic sources/publications are plotted on the x-axis and the number of citations from the

Figure 3.
Top research output by
university



sources is plotted on the y-axis. The size of the bubble represents the link strength (as calculated by the VosViewer bibliometric tool). The link strength indicates the number of co-authorship links of a given researcher/institution with other researchers (Van Eck and Waltman, 2017). The more an author appears in linked documents containing similar themes with other researchers, the higher the linked impact of the article.

Roehampton University (UK) has published the most articles on integrated thinking (6 publications) followed by the University of the Witwatersrand (South Africa) and Macquarie University (Australia) with 5 publications each. The University of the Witwatersrand has the highest research impact with 332 citations followed by Macquarie University with 240 citations. The highest link strength is the University of the West of Scotland (bubble size score of 12) which illustrates a high co-authorship and collaborative effort by that university.

That only two universities from developing economies feature in Figure 3 affirms the argument that institutions of higher education in countries such as the UK and Australia have more established research cultures and more access to the capital (both financial and human) required to produce large volumes of high-quality research than their counterparts in the developing world. What may also be important is the extent to which sustainability-related issues are accepted as legitimate areas of research and teaching in the universities of developing economies and what the focus areas of leading journals are.

4.2 Journals in which integrated thinking research is published

Table 2 illustrates the number of academic sources published in journals featuring more than 2 publications. *Meditari Accountancy Research (MEAR)* [7] (21 publications) accounts for 21% of total publications on integrated thinking. Almost half of the publications in this journal (48%) were published as recently as 2020. Following *MEAR* are *Sustainability Accounting and Management Policy Journal (SAMPJ)* (7 publications) and *Accounting, Auditing and Accountability Journal (AAAJ)* (6 publications). Unlike *MEAR*, most integrated thinking research in *SAMPJ* and *AAAJ* was published before 2019.

The citations of the journals present a similar picture with *MEAR* (390 citations) leading, followed by *AAAJ* (191 citations) and *SAMPJ* (175 citations) which have a high impact. This is illustrated in Figure 4 which includes journals with more than 20 citations over the study period.

MEAR has the highest research output (measured by total integrated thinking-related publications) and impact (measured by the total citations). The journal was first published by the University of Pretoria in South Africa before being included as part of Emerald's suite of journals. Whilst *MEAR* is a well-respected international publication, it maintains its links

Source	2011	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
<i>Meditari Accountancy Research</i> (Journal)				1		5		1	10	4	21
<i>Sustainability Accounting, Management and Policy Journal</i> (SAMPJ)			1	1	1			3	1		7
<i>Accounting, Auditing and Accountability Journal</i> (AAAJ)			1	1		1	2		1		6
<i>Journal of Intellectual Capital</i>						1		3			4
<i>Sustainable Development Goals and Integrated Reporting</i> (Book chapter)							4				4
<i>Business Strategy and the Environment</i> (Journal)								1	1	1	3
<i>Social Responsibility Journal</i>						1			1	1	3

Table 2. Academic sources with more than one research publication focussing on integrated thinking



Figure 4. Total citations per journal

with the South African accounting research community and is an example of a journal with roots in a developing economy and an “internationalising” agenda (De Villiers and Hsiao, 2017). Other than *MEAR*, no other journals based or originating in a developing economy are included in Figure 4. It should also be noted that, of the 21 publications by *MEAR*, academics from Italy contributed 4 publications followed by 3 from researchers in New Zealand collaborating with those in South Africa. Two papers resulted from a collaboration between British and Italian scholars. Only 24% of the *MEAR* integrated thinking publications are written by authors based in Africa.

Table A1 presents the top articles by Scopus citations and reaffirms the assertion that exactly how integrated thinking is operationalised in a developing economy is not being addressed in detail. This is despite the fact that these regions probably have most to gain from implementing an integrated thinking philosophy. At the same time, most of the research is being published in international journals which do not necessarily have developing

et al., 2016; McNally *et al.*, 2017). Papers consider different formats of corporate reports, the type of extra-financial information being included in these reports and the extent to which reports align with the Framework. The most frequently cited articles in this early phase of integrated reporting research contextualise it as part of the broader sustainable development movement and something which is applicable to a wide audience (see Oliver *et al.*, 2016; Haji and Anifowose, 2016; Atkins and Maroun, 2015). This phase also focusses on possible limitations of the Framework including an over-emphasis on financial capital providers and the fact that, because integrated reporting is a voluntary practice, it lacks the force required to promote positive change (Oliver *et al.*, 2016; Dumay and Dai, 2017). Even when the research is not critical, integrated thinking is a concept which informs how companies report generally rather than being a management and strategic tool which can be used to enhance sustainable value creation or which is measured directly (Tweedie and Martinov-Bennie, 2015).

Phase 2 is presented in green and is characterised by a growing awareness of the relevance of integrated thinking. The objective is not only to report on social and environmental dimensions but to appreciate that these have a material impact on an organisation's ability to satisfy the legitimate expectations of investors and other key stakeholders (see Velte and Stawinoga, 2017; Dumay and Dai, 2017; Guthrie *et al.*, 2017). Integrated reporting and thinking are framed using different theoretical lenses. Much of this builds on principles examined extensively by the earlier environmental accounting movement including, for example, the role of integrated reporting in bolstering legitimacy (Beck *et al.*, 2015), how integrated reporting is co-opted in impression management (Atkins and Maroun, 2018; Hassan *et al.*, 2019; Haji and Anifowose, 2016) and how integrated reporting adds value by reducing information asymmetry (De Villiers and Hsiao, 2017; Barth *et al.*, 2017).

Whether or not integrated reporting (and thinking) are aligned with stakeholder inclusivity or remain focussed on wealth maximisation for shareholders is debated (Rinaldi *et al.*, 2018; Dumay and Dai, 2017). As part of this, the link between integrated reporting and an organisation's governance is considered as pointing to the possibility that integrated reporting informed by integrated thinking can drive organisational change and vice versa (McNally and Maroun, 2018; Velte and Stawinoga, 2017). Nevertheless, integrated thinking continues to be seen as either a secondary issue or it is something which is examined concurrently with changes in how organisations report on economic, environmental and social factors.

From 2019, the transformative potential of integrated reporting, underpinned by a commitment to integrated thinking, starts to gain traction. In this third phase of research (highlighted by green transitioning to yellow), the notions that integrated reporting leads to little change in how organisations are operated and managed are challenged (Rodríguez-Gutiérrez *et al.*, 2019). Empirics are provided to highlight how the type of multi-capital mindset at the heart of integrated thinking can inform an organisation's strategy development, risk management and operating protocols and how companies report to their stakeholders (Grassmann *et al.*, 2019; Herath *et al.*, 2021). One group of papers deals explicitly with the concept of integrated thinking and take the first steps to explore how it can be operationalised (see Stacchezzini and Lai, 2020; Busco *et al.*, 2020; Tirado-Valencia *et al.*, 2020). In addition to considering possible drivers and indicators of integrated thinking (Busco *et al.*, 2019) researchers focus on different understandings of integrated thinking (Busco *et al.*, 2021), its relevance for stakeholder awareness (Raji and Hassan, 2021) and alternate notions of value creation techniques (Herath *et al.*, 2021). There are also efforts to measure the levels of integrated thinking (Malafronte and Pereira, 2021).

Figure 5 highlights how integrated thinking research is maturing in a predictable way. In the early stages, the emphasis is on describing how integrated thinking is incorporated as part of the existing sustainable development knowledge base but without differentiating clearly between integrated thinking and reporting. There is some effort to understand the

implications of integrated thinking and provide evidence of how integrated thinking can be operationalised but this line of work is far from complete.

Some argue that integrated thinking must precede reporting if the latter is to have any substance (Bridges and Yeoman, 2020) but the link between impression management and an organisation's failure to internalise integrated thinking is still to be established. Conversely, it is possible that organisations which prepare an integrated report because of stakeholders' pressures comes to realise the benefits of doing so with the result that integrated reporting either precedes or develops in tandem with integrated thinking. There is some evidence of integrated thinking's transformative potential (Rodríguez-Gutiérrez *et al.*, 2019; Raji and Hassan, 2021; Herath *et al.*, 2021) but the case studies are few and focus mainly on Italian and South African companies. Without a conceptual framework which lays out the implementation principles and the logical connections between integrated thinking and alternate measures of economic, environmental and social performance, the benefits of integrated thinking remain largely speculative.

The IIRC is not the first organisation to propose the importance of social and environmental factors. The GRI's guidelines were established almost three decades before the IIRC with much of the environmental accounting research predating the IIRC (e.g. Milne *et al.*, 2009; Bebbington *et al.*, 2001). This research calls for a widening of accounting and governance systems to enable accountability for adverse social and environmental impacts and challenge the hegemony of financial economics in management's decision-making process. How integrated thinking aligns with the findings of early environmental accounting scholars needs to be examined more carefully to establish the logics on which integrated thinking relies to advance sustainable development.

Perhaps most important is the question: for whom is value being created and how do we know if any value-added is genuine? In the IIRC's view, an organisation generates value for itself, its financial capital providers and other stakeholders (see Section 1). The position is grounded in well-established concepts from responsible capitalism and stakeholder theory: generate financial returns for investors and creditors but balance social and environmental factors in the interest of the general stakeholder community and sustainable development (De Villiers *et al.*, 2020; King and Atkins, 2016). The practicalities are much more complex. Like early efforts at environmental reporting and "triple bottom line accounting", social and environmental "capitals" can be reframed as indirect financial ones rather than being positioned as equally important to economic objectives. Where this is the case, the transformative potential of integrated thinking is, at best, limited and, at worst, co-opted in maintaining a dangerous status quo (consider Tregidga *et al.*, 2014; Gray, 2006). Organisations must incur additional costs to manage the different capitals but without an offsetting increase in short-term financial returns. Any positive transformations in environmental, social and human capitals are difficult for investors and other stakeholders to measure and compare. Neither the practitioner nor the academic community have any practical recommendations to address these challenges.

Finally, integrated thinking is predicated on the assumption that everyone wants organisations to be more sustainable. Unfortunately, it is far easier for companies to deflect accountability for "non-financial" performance and defer the need for long-term change. Integrated thinking can, theoretically, change behaviour but there is no clear explanation for how hundreds of years of business traditions grounded in financial profit maximisation can be overcome in practical terms.

6. The locus of the research, epistemology and methods

As shown by Table 3, the focus is on the macro- (33%) and meso- (44%) levels. Case studies dealing with how integrated thinking is understood and applied by specific organisations and

their managers or governing bodies (micro-level) has not been examined in detail (23%). This is especially the case when it comes to developing economies with the macro- (44%) and meso- (52%) levels dominating the research enquiry whilst only 4% of the developing economies' research deals with the micro-level (1 research publication). There is very little on the operationalisation and impact of integrated thinking on an organisational level which is where the social and environmental challenges need to be addressed.

To provide additional insights, the research is classified by epistemology and method. Refer to [Table 4](#).

Interpretative (Global = 47%; Developing economies = 48%) and critical (Global = 44%; Developing economies = 36%) research are dominant, something which points to the emerging nature of integrated thinking and current emphasis on exploring different theoretical framings of integrated thinking ([Busco et al., 2021](#); [Herath et al., 2021](#)), especially in the first and second phases of the integrated thinking research. The most recent interpretive and critical research papers focus on sustainability and stakeholder awareness (see [Raji and Hassan, 2021](#); [Rossi and Luque-Vílchez, 2020](#); [Di Vaio et al., 2021](#)), the interrelationship of management control systems and integrated thinking (see [De Villiers and Dimes, 2020](#)) and how integrated thinking can be reported (see [Busco et al., 2019](#); [Tirado-Valencia et al., 2020](#)).

Content/historical analyses (40%) and case studies/interviews (30%) are most popular methods amongst interpretive and critical researchers. However, when analysing case study methodologies, only 19% of publications focus on traditional, micro-level case studies of organisations with the remainder of the publications dealing with either interviews or broader, country-wide samples which addressed a meso- or macro-level focus. Commentaries or discursive papers which advance normative policy suggestions are also found consistently from 2014–2021 (16%). There are only a handful of papers which use surveys and questionnaires (6%), possibly because of the difficulty of gaining access to enough respondents and the fact that other methods offer richer insights ([De Villiers and Hsiao, 2017](#)).

A positivist grounding which is often encountered when dealing with financial accounting and reporting is less suited to explaining how integrated thinking is being conceptualised and applied in different practical settings ([Busco et al., 2019](#); [Malafrente and Pereira, 2021](#)). As a result, this type of research accounts for only 10% of the total global output of integrated thinking research. From a developing economy's perspective, the total positivist research accounts for 16% of the research output from developing economies with four quantitative papers dealing with integrated thinking. Interestingly, this means that developed economies account for almost half of the total positivist research globally (44%). This may be because of the quantitative studies requiring a lower commitment in time than do more exploratory research designs ([Maroun and Jonker, 2014](#)).

Given the subject nature of the topic, and the fact that there are no generally-accepted proxy measures ([Malafrente and Pereira, 2021](#)), quantitative methods are seldom encountered (8%), irrespective of the epistemological stance being adopted. Research taking a more positivist stance (and also making use of quantitative techniques) deals with the interrelationship between integrated thinking and sustainability (see [Baboukardos et al.,](#)

Level	2011	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	Developing economies
Macro	1	2	1	5	1	2	9	2	5	4	32	11
Meso			1	2	2	10	4	10	10	4	43	13
Micro						3	2	4	9	5	23	1
Total	1	2	2	7	3	15	15	16	24	13	98	
Developing economies			1	5	1	5	3		5	5		25

Table 3. Locus of enquiry of integrated thinking research

Table 4.
Research
methodologies and
epistemological
paradigms

Characteristic	2011	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	Developing economies
<i>Critical</i>	1	2	1	2	3	10	10	4	7	3	43	9
Case/field study/interviews						1			1		2	
Commentary/normative/policy			1	1	1	1	7	1	2		14	2
Content analysis/historical analysis	1	2		1	1	6	3	3	4	3	24	7
Survey/questionnaire/other empirical					1	2					3	
<i>Interpretive</i>			1	5		5	5	10	15	5	46	12
Case/field study/interviews			1	2		5	3	4	10	3	27	6
Commentary/normative/policy				1						1	2	2
Content analysis/historical analysis							2	6	5		14	3
Survey/questionnaire/other empirical				2						1	3	1
<i>Positivist</i>								2	2	5	9	4
Content analysis/historical analysis									1		1	
Quantitative								2	1	5	8	4
<i>Total</i>	1	2	2	7	3	15	15	16	24	13	98	
<i>Developing economies</i>			1	5	1	5	3	5	5	5	25	

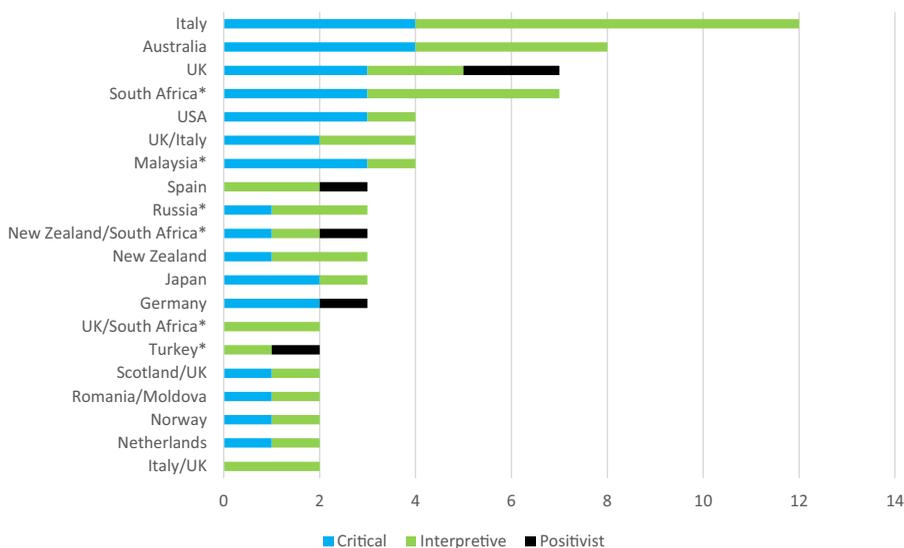
2021), associations between economic firm-level characteristics and the extent of connectivity amongst disclosures dealing with the different capitals (see Grassmann *et al.*, 2019) and developing proxies to measure integrated thinking (see Malafronte and Pereira, 2021).

Figure 6 illustrates the use of critical, interpretive and positivist research per country. It confirms that positivist research is not the predominant epistemology in any of the jurisdictions contributing to integrated thinking research.

Developed countries lead the way in critical and interpretive integrated thinking research with positivist research being most dominant from the UK. From a developing economy perspective, South Africa is one of the leaders in interpretive and critical integrated thinking research and has collaborated with New Zealand on additional research aligned with a positivist paradigm. Turkey, another developing economy, has also contributed to positivist research.

In the authors' opinion, researchers in developing economies should prioritise exploratory research designs which allow them to identify how companies understand and internalise an integrated thinking philosophy. This line of interpretive work will make an important contribution to theory and practice by highlighting how integrated thinking can be implemented in practical terms, the challenges encountered and the ways in which integrated thinking can aid in achieving the social and environmental objectives so important in the context of a developing economy (consider De Villiers *et al.*, 2019; Dumay *et al.*, 2016). Qualitative research will also be well suited for examining the inherent limitations of integrated thinking including the possibility that it leads to only marginal changes characterised by the framing of social and environmental risks to achieving economic objectives (see Gray, 2006).

In advancing the integrated thinking research project, care needs to be taken to avoid using those theoretical frameworks and methods which have been institutionalised by the mainstream journals. These outlets may not provide the best examples of high impact sustainability-related research and may emphasise experiences in developed economies. Alternate theoretical framings may be better suited to the different contexts of African, Asian and South American countries. Similarly, some methods may be inappropriate or impractical



Note(s): An asterisk indicates an academic contribution from a developing economy

Figure 6. Epistemological breakdown per country with more than one publication

to apply. For example, databases used for most archival quantitative studies will be problematic without a well-established basis for measuring integrated thinking proxies or when information from developing economies is missing or inaccurate.

Finally, collaborations with other countries are important to stimulate innovative research approaches and methodologies. There are limited instances of collaborative efforts, particularly between developed and developing economies. Collaborating with other jurisdictions can provide additional data and cross-jurisdictional analysis which will allow developed and developing economies to leverage the situations in the respective markets and can provide a richer analysis of integrated thinking.

7. Conclusion and areas for future research

Practitioner publications on integrated thinking by organisations such as SAICA (2021, 2015), the IIRC (2021a) and CIMA (2017) are numerous. They deal with issues such as the benefits of embedding integrated thinking in an organisation, the challenges of implementing an integrated thinking mindset and case studies illustrating the application of integrated thinking. These sources make an important contribution but are not a substitute for rigorous and independent research executed by academics.

A bibliometric analysis of the academic literature dealing with integrated thinking reveals a steady increase in attention devoted to the topic, especially from 2017 to date. In addition to a growth in the number of publications, researchers are starting to explore integrated thinking in more detail. The earliest studies were concerned primarily with the type of extra-financial information being included in annual, integrated and sustainability reports and critical reviews of the IIRC's Framework. This has given way to studies concerned with the impact which integrated reporting has on an organisation's activities; the ways in which economic, environmental and social factors are managed concurrently at the strategic and operational level and the consequences of integrated thinking for investors and non-shareholding stakeholders. As part of this, there are concerted efforts to define and understand better how integrated thinking is being operationalised and to explore how integrated thinking (as opposed to the extent and quality of integrated reporting) can be gauged by an organisation's constituents and used to hold it accountable.

Whilst there have been important advances in integrated thinking research, many questions remain unanswered and offer opportunities for future research. Perhaps most urgent is the need to understand how integrated thinking is being applied in developing economies other than South Africa and Malaysia. There are a shortage of papers dealing with integrated thinking in the context of emerging economies. The benefits of, and barriers to, integrated thinking need to be considered at different levels. For example, at the macro-level, what role do professional bodies, stock exchanges and regulators in developing economies play in advancing reporting on extra-financial information and the multi-capital strategy development, risk assessment and operational management which characterises integrated thinking? How do differences in the institutional and regulator environments in developing and developed economies contribute to, or undermine efforts to, advance integrated thinking? At the meso-level, are there differences in how industries and members of specific value chains approach integrated thinking? Can any lessons be learnt from integrated thinking pioneers in developing economies which can be used to refine the understanding of integrated thinking and allow other organisations to operationalise integrated thinking principles more effectively? Is it possible that organisations' experiences in dealing with the social, environmental and policy challenges which characterise developing economies leaves them better placed to implement integrated thinking and realise its benefits?

A related area worthy of additional research is the use of integrated thinking by the public sector in both developing and developed economies. There are some examples dealing with how, for example, universities (Raji and Hassan, 2021; Hassan *et al.*, 2019), conservation

organisations (Büchling and Maroun, 2021) and local governments (Gaia and Jones, 2017) deal with aspects of environmental and social issues as part of an integrated thinking mindset. More needs to be done to understand how integrated thinking can be used to bolster confidence in the public sector, contribute to improved service delivery, reduce waste and enhance stakeholder engagement.

In addition to examining integrated thinking in different settings, future researchers can experiment with different approaches to gauging integrated thinking. Current research (such as Barth *et al.*, 2017) is predicated on the assumption that integrated reporting quality (gauged according to what companies include in their reports to stakeholders) captures the levels of integrated thinking at organisations. Developing proxy measures for integrated thinking which do not rely entirely on what companies include in their external reports to stakeholders will make an important contribution to theory and practice. Integrated thinking proxies can also be used to identify those parts of an organisation's strategy, risk management practices, control systems and accounting infrastructure which are most essential for promoting the types of positive change required to achieve long-term sustainability.

Whilst it is important to consider how alternate theoretical perspectives shed light on the emergence and development of integrated thinking, care must be taken to avoid losing sight of practical relevance. This is especially the case considering the limited guidance on exactly *how* organisations should implement integrated thinking. A related area of concern is the role played by corporate governance mechanisms which are needed to support integrated thinking. For example, how can boards of directors drive integrated thinking and the achievement of long-term sustainability? What key performance indicators are best suited to advancing integrated thinking and what types of management control and accounting systems are required to support integrated thinking? To what extent do board committees, internal auditors and external assurance providers oversee the development and implementation of policies and systems required for maintaining an integrated thinking philosophy?

The preceding discussion should not be misunderstood as suggesting that integrated thinking automatically solves the adverse consequences of, for example, market pressures and the use of sustainability or integrated reports as tools to manage impressions (e.g. Milne *et al.*, 2009). Academics have an important role to play in examining how integrated thinking can be used to deliver substantive changes which promote sustainable development rather than only marginal revisions to how businesses identify and manage their financial risks.

Whilst integrated thinking is not without limitations, it is an emerging area of research which offers opportunities for scholars to make important advances in theory and practice. The five primary sustainability and integrated reporting bodies [8] have agreed to work towards a “comprehensive corporate reporting system” (World Economic Forum & Deloitte, 2020). An internationally applicable framework and set of standards will simplify reporting on financial and extra-financial information and advance the sustainable development agenda (*ibid.*). Whether or not these documents will refer specifically to “integrated reporting” remains to be seen but they will undoubtedly be underpinned by an integrated thinking philosophy which advocates the responsible management of different types of capitals for the benefits of investors and other stakeholders (King, 2021).

Notes

1. Specific subjects, per Scopus, include: ‘business, management and accounting’, ‘social sciences’, ‘economics, econometrics and finance’ and ‘multidisciplinary’.
2. In total, 23 documents did not fit in with integrated thinking in terms of the relevant subject themes identified above.
3. In total, 1 380 papers dealt with ‘sustainability reporting’ and 712 papers dealt with ‘integrated reporting’ as a core theme in the title, keywords or abstract. These were screened in each category to

ensure that a material reference to integrated thinking was not omitted from the original search. The papers were ordered by citation (top 20) and reviewed to determine if they covered integrated thinking as a focal point. A random sample of 20 papers was also examined as an additional check.

4. The list of 98 papers, with the relevant publication details, is available on request from the corresponding author.
5. These countries form part of BRIC, CIVETS and other emerging markets which are commonly recognised as 'emerging nations'.
6. The capitals – in alphabetical order - are financial, human, intellectual, manufactured, natural and social and relationship capital (IIRC, 2021b).
7. Meditari has a Scopus CiteScore of 5.2 in 2020. Although Meditari primarily focusses on accounting research, papers from diverse management fields are published.
8. CDP (formerly the Carbon Disclosure Project), CDSB (Climate Disclosure Standards Board), GRI (Global Reporting Initiative), IIRC (International Integrated Reporting Council) and SASB (Sustainability Accounting Standards Board).

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Appendix

[Appendix \(Table A1\)](#) reports top articles by citations. Only two of the articles focus specifically on integrated thinking. The remaining eight deal with it as part of a broader review of integrated reporting. Older articles will have more citations and there is an element of time bias ([Dumay et al., 2016](#)) so the citations per year were calculated. This revealed an additional three articles with a high citation per year. These have been added to [Appendix \(Table A1\)](#)

Most of the highly cited articles are published in 2017 (62%). [Ashford and Hall \(2011\)](#) introduce integrated thinking as a solution to sustainable development crises and discuss the use of regulation in promoting a sustainable mindset amongst organisations. The integrated reporting research examines the organisational challenges and benefits of implementing integrated reporting ([Steyn, 2014](#); [McNally et al., 2017](#)), common integrated reporting practices ([Haji and Anifowose, 2016](#); [De Villiers et al., 2017](#); [Feng et al., 2017](#)) and the impact on ESG issues ([Maniora, 2017](#)).

	Journal	Author	Title	Scopus citations	Citations per year	Core theme*	Overview
1	<i>MEAR</i>	Atkins and Maroun (2015)	Integrated reporting in South Africa in 2012: Perspectives from South African institutional investors	101	14	IR	Examines the views of institutional investors and analysts on South African integrated reports
2	<i>MEAR</i>	De Villiers <i>et al.</i> (2017)	Developing a conceptual model of influences around integrated reporting, new insights and directions for future research	76	15	IR	A pluralistic assessment of integrated reporting
3	<i>JMC</i>	Velte and Stawinoga (2017)	Integrated reporting: The current state of empirical research, limitations and future research implications	71	14	IR	An analysis of integrated report implementation and market reactions
4	<i>SAMPJ</i>	Ashford and Hall (2011)	The importance of regulation-induced innovation for sustainable development	71	6	SD	Regulations to stimulate sustainable development
5	<i>MEAR</i>	Guthrie <i>et al.</i> (2017)	Integrated reporting and integrated thinking in Italian public sector organizations	68	14	IR/IT	Provides insights into the impact of integrated reporting and thinking on internal processes
6	<i>SAMPJ</i>	Steyn (2014)	Organisational benefits and implementation challenges of mandatory integrated reporting: Perspectives of senior executives at South African listed companies	66	8	IR	Provides insights into the organisational benefits and challenges of implementing integrated reporting
7	<i>AAAJ</i>	Haller and van Staden (2014)	The value-added statement – an appropriate instrument for integrated reporting	62	8	IR	The Value-Added Statement tool is discussed to enhance reporting tools for integrated reporting

(continued)

Table A1.
Top articles by Scopus citations and citations per year

	Journal	Author	Title	Scopus citations	Citations per year	Core theme*	Overview
8	MEAR	Dumay and Dai (2017)	Integrated thinking as a cultural control?	57	11	IT	The organisational culture impact and operationalisation of integrated thinking
9	SAMPJ	Haji and Anifowose (2016)	The trend of integrated reporting practice in South Africa: ceremonial or substantive?	56	9	IR	Provides a checklist of integrated reporting guidelines and practices
10	MEAR	McNally et al. (2017)	Exploring the challenges of preparing an integrated report	53	11	IR	Discusses the preparation of, and challenges to, integrated reporting
11	JIC	Feng et al. (2017)	Exploring integrated thinking in integrated reporting – an exploratory study in Australia	47	9.4	IT	Stakeholder interpretation of integrated thinking application
12	JBE	Maniora (2017)	Is Integrated Reporting Really the Superior Mechanism for the Integration of Ethics into the Core Business Model? An Empirical Analysis	45	9	IR	The impact of integrated reporting on the integration of non-financial issues into business models
13	AAAJ	Adams (2017)	Conceptualising the contemporary corporate value creation process	42	8.4	IR/IT	Value-creation through integrated thinking

Note(s): MEAR (Meditari Accountancy Research); SAMPJ (*Sustainability Accounting, Management and Policy Journal*); AAAJ (*Accounting, Auditing and Accountability Journal*); JBE (*Journal of Business Ethics*); JIC (*Journal of Intellectual Capital*) and JMC (*Journal of Management Control*)

*Integrated reporting (IR); integrated thinking (IT) and sustainable development (SD)

Table A1.

Corresponding author

Dusan Ecim can be contacted at: dusan.ecim@wits.ac.za

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