

“Integrated thinking and reporting” towards sustainable business models: a concise bibliometric analysis

Concise
bibliometric
analysis

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Abstract

Purpose – This paper aims to provide a thorough and systematic overview of the academic literature focusing on the role of integrated reporting (IR) and integrated thinking (IT) in achieving sustainable business models (SBMs). The paper discusses whether the incorporation of newer IR systems can facilitate the integration of processes, as well as a better allocation of resources and capital to create long-term value, according to a circular approach.

Design/methodology/approach – Based on a database containing 60 publications in English with a publication date from 1990 to 2019, a bibliometric analysis is conducted. Data on publications, journals, authors and citations are collected, verified, cross-checked and examined by applying bibliometric measures.

Findings – Bibliometric analysis has identified that IR and IT have determined an evolution in the way companies communicate and create value, facilitating the integration of processes and a better allocation of resources and capital. However, market practice still perceives them as simple reporting tools to meet stakeholders’ needs rather than as critical corporate governance tools.

Research limitations/implications – This study highlights key issues in the past literature on IR and IT to meet SDGs, contributing also to the identification of critical difficulties that companies encounter in attempting to attain sustainable goals.

Originality/value – This document contributes to the existing literature on IR, IT and SBMs through a systematic review of the literature on these topics along with the sustainable development goals perspective.

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The study, furthermore, attempts to assess the role that the relevant literature attributes to IR and IT in the SBMs architecture.

Keywords Bibliometric analysis, Sustainable development goals (SDGs), Integrated reporting (IR), Integrated thinking (IT), Non-financial report (NFR), Sustainable business models (SBMs), Circular approach

Paper type Literature review

1. Introduction

According to the UN's Sustainable Development Agenda for 2030 (2030 Agenda), responsible corporate behaviour encourages the achievement of sustainable development goals (SDGs), as well as performance improvement.

The SDGs adopted by all UN Member States in 2015 induces companies to include sustainable development (SD) issues in their strategic objectives, to develop new business models. Therefore, organizations are required to implement tools, concepts and systems on sustainability management (Ramos, 2019), including the use of newer non-financial reporting systems (NFR) that meet stakeholders' information needs on learning about the relationship between SD and value creation (Adams, 2017a, 2017b). Toward this end, SDGs achievement requires the adoption of a holistic approach incorporating a solid understanding of socio-environmental changes (Unerman and Chapman, 2014), as well as of the ongoing political and regulatory initiatives, based on "integrated thinking" (IT) (Adams, 2017a, 2017b) that keeps track of the value creation process, through reports and business practices (Busco *et al.*, 2017).

A number of studies on sustainability reporting show that comparability problems still remain regarding information disclosure (de Villiers *et al.*, 2017). This is mainly due to the use of disclosure as an end in itself and not intended to generate an organizational metamorphosis, capable of involving decision making, governance and business planning processes (Busco *et al.*, 2019). In fact, the use of NFR should not be limited to "telling what is"; rather, it should develop the "creative responsibility" of the management bodies to make them think and implement an integrated strategy, able to estimate how and at what moment the socio-environmental commitment of organizations can influence corporate performance (Adams, 2015).

Current communication systems seem increasingly inadequate to report all the aspects affecting corporate value because they fail to take into account the human and financial capital, as well as the implications related to the business activity on the external environment in which they operate (Soyka, 2013). To this end, integrated reporting (IR) aims to integrate "financial transparency with the environmental and social information needed to understand the development, performance and position of a company, as well as the impacts of its activities on society" (Guthrie *et al.*, 2017). IR is a tool capable of aligning governance aspects with the company's decision-making processes, through socio-environmental impact assessments, which allow the development of IT, understood as "the active consideration by an organization of the relationships between its operational and functional units and the capital that the organization uses or influence" (IIRC, 2013). Furthermore, the combination of IR and IT can guide corporate strategy adjustments, stimulating the "holistic" commitment of all the actors involved in value creation, at the same time paying attention to sustainability issues (Guthrie *et al.*, 2017).

Drawing on a systematic review of the literature (SLR) on the issues described above, this study aims to help trace the evolution of literature on the topic and identify future research lines, through a rigorous and replicable process (Massaro *et al.*, 2016). Especially, through a bibliometric analysis, we investigated the role of IT and IR towards the achievement of sustainability objectives, in particular the SDGs. Attention was paid to whether the adoption

of a more holistic (integrated) approach to long-term value creation can be represented through NFR in the SDGs perspective.

The following research questions are discussed:

RQ1. How can IR promote responsible initiatives and behaviours towards the SDGs according to a circular approach?

RQ2. How does IT fit with circular disclosure for sustainability?

RQ3. How is the academic field changing, and what are the challenges for future studies?

The research findings reinforce the importance of the development of business models responsible for achieving the SDGs and integrating the relationships within the company strategic processes; in this the findings show challenging managerial and academic implications, filling the gap on the topic examined.

To adequately respond to the questions above, this paper evaluates research on this topic by conducting a bibliometric analysis of 60 articles.

The rest of the paper is structured as follows. Section 2 develops the theoretical framework in two Section 2.1 discusses IT and IR; and Section 2.2 discusses IT and IR in the SDGs perspective. Section 3 discusses the methodology for conducting the review and the software incorporated for data analysis. Section 4 critically discusses the results of the review, bibliometric aspects of selected papers (Section 4.1) and paper content (Section 4.2), divided by decade. Section 5 integrates the key points of the discussion, contributing theoretical and practical insights and Section 6 provides conclusions, implications and future research.

2. Theoretical framework

2.1 *Integrated thinking and reporting*

Awareness of the opportunities presented by an IR system has grown at the political, institutional and academic level during the past 10 years, including the extensive adjustments that have affected the way of doing business. This is because IR “brings together material information on the strategy, governance, performance and perspectives of an organization in a way that reflects the commercial, social and environmental context within which it operates. It provides a clear and concise representation of as an organization creates value, now and in the future” (Towards IR Communicating Value in the 21st Century, 2011, pp. 2–4) [1]. In this sense, “IR can help companies make more sustainable decisions and allow investors and other stakeholders to understand how an organization is behaving” (de Villiers *et al.*, 2014, p. 1046). Numerous studies indicate that when companies overcome internal divisions, creating exchange mechanisms of the forms of capital employed in production processes, they develop an IT culture aimed at creating long-term value, of which IR is spokesman (Busco *et al.*, 2019; Guthrie *et al.*, 2017; Adams, 2017a, 2017b; Dumay and Dai, 2017; de Villiers *et al.*, 2017; Dumay *et al.*, 2016). In fact, in the current climate of economic uncertainty in which companies operate, it is necessary to adopt an action strategy that involves the entire company organization, to guide decisions towards more lasting and sustainable solutions. In this direction, IR not only can improve transparency towards stakeholders in the company’s function of reporting long-term profitability choices but also, above all, it can support corporate actions according to “integrated” thinking, through the active involvement of all internal and external operating drivers in the company (Adams and Simnett, 2011).

The fundamentals related to agency theory, stewardship theory, institutional theory and legitimacy have been used to try to explain and interpret the reasons behind the company’s

dissemination choices (Camilleri, 2018; Adams, 2017a; Frias Aceituno *et al.*, 2014). In particular, agency theory explains the choice of managers to disseminate large pieces of information with the opportunistic goal of favouring profit enhancement, reducing political costs and information asymmetries (Birt *et al.*, 2006).

On the other hand, according to stewardship theory, the dissemination tools reflect responsible business behaviour, aiming at protecting shareholders and creating benefits for the community (Adams, 2002). According to institutional theory, business decisions respond to pressures deriving from the regulatory and institutional context, through the implementation of good reporting practices to meet the expectations of stakeholders and the external environment in which they operate (Adams, 2013). This can happen according to an isomorphic process of mere fulfilment of the normative guidelines or through an attitude of isopraxis that pushes towards new model creation, set in the specific social and organizational context (Adams, 2017a).

Finally, according to legitimacy theory, organizations tend to adopt informational behaviours with the aim of strengthening their degree of legitimacy and therefore increasing their reputational value in the external environment in which they operate (Camilleri, 2018).

Beyond these theoretical references, the adoption of IR systems by organizations is seen to be frequently motivated by profit increase, neglecting the role that IR can undertake towards the construction of integrated corporate strategies to resource and capital management, in line with the prerogatives of SD (Adams, 2017a, 2017b; Adams and Whelan, 2009).

2.2 Integrated thinking and reporting in the sustainable development goals perspective

The achievement of sustainability objectives requires an important effort by companies, called to initiate systemic action to involve socio-environmental factors within organizational and decision-making processes (Adams, 2017a; Xiao *et al.*, 2017). The 2030 Agenda is now a compass to promote the well-being of people and the environment in the paradigm of economic development, through the achievement of the SDGs.

The SDGs require the cooperation of different actors, from institutions to civil society, called to a “participatory process” of understanding the social, political, economic and legislative events affecting global change (Norström *et al.*, 2014).

Sustainability also involves business models or the ways in which companies conduct business to create economic value: management systems must exploit technological innovations to mitigate the negative externalities of corporate activities, maximizing social and environmental utilities (Bocken *et al.*, 2014). Organizations are required to develop a holistic and integrated approach in defining a corporate strategy capable of aligning the social, environmental and economic dimensions of SD (Bocken *et al.*, 2015).

This approach must be multi-capital and multi-stakeholder because it allows the creation of value for both internal and external stakeholders (Galli *et al.*, 2018).

In this context, IR helps companies to improve the relationship between business and SD, providing support to integrate socio-environmental issues into the company’s operational and decision-making processes, which involve the various forms of financial and non-financial capital (IIRC, 2013a, 2013b). Several studies indicate that the integrated IR approach has further raised corporate behaviour with respect to SD issues (Adams, 2015). Indeed, stakeholders expect an increasingly responsible and transparent attitude towards the adoption of sustainable practices [2] (Adams, 2017a, 2017b), as well as towards the adoption of reporting tools capable of effectively measuring the commitment to sustainability (Stacchezzini *et al.*, 2016).

In this context, IR can make an important contribution to the achievement of the SDGs with respect to ordinary corporate disclosure systems because it acts as a planning tool that

allows managers to identify systems and ways to connect and improve corporate sustainability performance, so as to have a global vision of the value creation process (Busco *et al.*, 2019). However, this requires a stage of corporate maturity perhaps not yet reached, indicating persistent reluctance to disclose strategic information to the market, in favour of competitors (Stacchezzini *et al.*, 2016). The truth is that “isolated” sustainability initiatives do not bear strength to generate profound changes towards SDG achievement, as this would rather require forms of integrated cooperation with the external environment capable of forging planning and business management (Busco *et al.*, 2017).

3. Methodology

The methodology incorporates a qualitative approach focussed on the content of papers in IT and NFR in the SDGs perspective.

Content analysis is an investigation system aimed at analysing and systematising data in a replicable way; therefore it is fundamental to decide the documents to be analysed (Krippendorff, 1980). The collection of our data is based on common search procedures, through the ISI Web of Science (WoS) search engine, to guarantee the reliability of the data collected, as it is always available and reproducible by the software (Krippendorff, 2004; Fink, 2010). In addition, not to limit the sample size and to neglect important contributions for the analysis (Massaro *et al.*, 2016), our database was enriched through a manual search of the authors on Google Scholar (GS), monitoring citations of further relevant articles in high-level academic journals (Rashman *et al.*, 2009). In particular, these journals have been selected because they are known to welcome the publication of theoretical or empirical studies on topics related to NFR, IR, IT and SD and are also used for other SLRs on these issues (Kitchenham *et al.*, 2009); they include *The British Accounting Review*, *Critical Perspectives on Accounting*, *Accounting Forum*, *Journal of Business Ethics*, *Sustainability* and *Meditari Accountancy Research*. The methodology is divided into two phases, namely, extraction and study of relevant papers and bibliometric analysis of selected papers (Okoli and Schabram, 2010). The following steps are initially undertaken:

- extraction of papers from library databases;
- identification of relevant papers;
- manual localization of highly cited papers; and
- identification of other influential papers.

Figure 1 depicts a holistic approach to data collection and the necessary steps to ensure a sound methodology.

The initial step included access to two main databases, WoS and GS, and the study of relevant academic publications to highlight and systematise the main academic research directions. Although ISI Web of Science imposes 1990 as the initial year of research by default, at this stage the authors decided to develop the research process for a very large period, 1990–2019, to facilitate the acquisition of all relevant contributions from the beginning. We decided to conduct the research from 1990, to observe the prior trends in literature towards the first formalization of the topics: in fact, the Global Reporting Initiative, which aims at promoting and developing sustainability issues in the corporate reporting area, to improve corporate responsibility towards the environment, was established in 1997. In 1998, the “triple bottom line” theory for economic, social and environmental performance was implemented; this practice encourages companies to evaluate their performance in a broader perspective of social well-being, environmental protection and economic prosperity, to create long-term value (Elkington, 1998). In 2000, the GRI, which is a strategic partnership of the Organization for

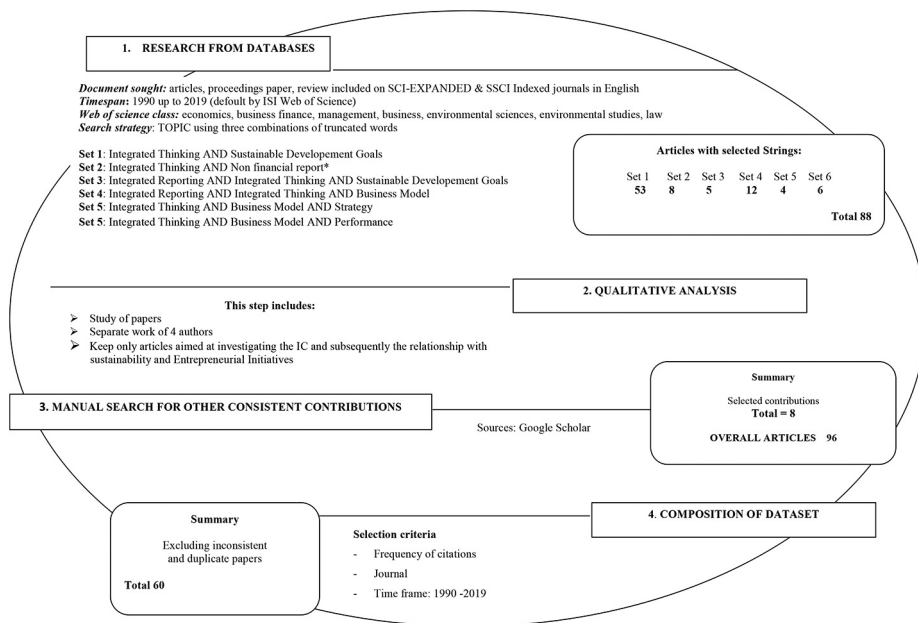


Figure 1.
Summarizes research

Economic Cooperation and Development, the United Nations Environment Program, and the United Nations Global Compact, drafted a first draft of its guidelines, to transmit the sustainable and IR initiatives of companies worldwide (Table A1).

To identify the appropriate papers, we used the following six groups of search strings:

- (1) *Group 1:* IT and SDGs.
- (2) *Group 2:* IT and NFR*.
- (3) *Group 3:* IR and IT and SDGs.
- (4) *Group 4:* IR and IT and business model.
- (5) *Group 5:* IT and business model and strategy.
- (6) *Group 6:* IT and business model and performance.

These combinations were chosen by combining the keywords chosen by other scholars who have conducted investigations on IR, IT, SD and SBM, to highlight the degree of interconnection among these topics (among many works, Grassmann *et al.*, 2019; Rodríguez-Gutiérrez *et al.*, 2019; Stacchezzini *et al.*, 2016; Ramos, 2019; Nilsson *et al.*, 2018; Stubbs and Higgins, 2018; Guthrie *et al.*, 2017; Adams, 2017a, 2017b; Busco *et al.*, 2017; Dumay and Dai, 2017; Dumay *et al.*, 2016; Burke and Clark, 2016; Dumay *et al.*, 2016; Burke and Clark, 2016; Müller *et al.*, 2015; Lancione and Clegg, 2015; Müller *et al.*, 2015; de Villiers *et al.*, 2014; Norström *et al.*, 2014; Butler *et al.*, 2014; Sala *et al.*, 2013; Soyka, 2013; Milne and Gray, 2013; Thabrew *et al.*, 2009; Gray, 2006; Parker, 2005; Adams, 2002).

These six combinations were used to include as many relevant papers as possible and to verify the interrelation between the papers included in different research groups. Doing so, the extension to all IR and IT studies in the SD perspective is facilitated, without neglecting critical effects on the business model and corporate strategy. Indeed, IR and IT appear as

constant references in search strings, as they represent the starting substrate for scholarly investigation to then examine the relationship with SDGs and the effects on performance, in view of implementing SBMs.

The second step was to identify the relevant documents; the content of each article was studied by reading the abstract to ensure consistency with research questions and objectives. All authors worked independently, rigorously verifying each document and observing the affinities with respect to the purpose of the research; then they compared their results. In this way, separate and comparative analysis can result in a higher level of validity. In more detail, we analyzed the keywords, checking that they were in line with our review. Subsequently, the abstract of each article was read thoroughly and its relationship with the problem being investigated on IT and IR was highlighted in the perspective of sustainable development.

In the third step, assuming that WoS may not include all relevant papers under investigation, we integrated a manual search on GS, based on the same parameters, taking into consideration all those papers consistent with the research objectives.

In the fourth and final step, we worked separately to examine each paper and highlight the critical aspects relevant to the research objectives. After eliminating irrelevant papers and duplicates, we compared our results and then developed the literature review. The final list comprised 60 papers, discussed in Section 4.1.

4. Results

This section presents the key research results organized as follows:

- bibliometric aspects of selected papers; and
- paper content.

4.1 *Bibliometric aspects of the selected papers*

The selected articles have been analyzed on Bibliometrix, with the aim of elaborating statistical and graphic investigations capable of summarizing the research, highlighting the Spatio-temporal aspects of the results obtained. In fact, bibliometric analysis allows one to perform a “transparent” and “reproducible” SLR (Aria and Cuccurullo, 2017, pp. 959–960), providing more reliable results in the systematic process of scientific information on a topic, without the danger of neglecting past documents.

Appendix 1 (Figure A1) presents a “WordCloud” of the abstracts and highlights the most common words in sample papers’ abstracts available in the databases. The word dimensions in the image depend exclusively on the presence of words in the selected papers. As the figure shows, the keywords of this study are “social”, “sustainable” and “integrated”, located in the map centre. In fact, the word “social” appears 119 times in the abstracts of the sample collection, followed by the words “sustainable” and “integrated”, which appear 103 and 83 times, respectively, as a constant in the collection (among others, Grassmann *et al.*, 2019; Calleros-Islas, 2019; Brack *et al.*, 2019; Buil-Fabregá *et al.*, 2019; Rodríguez-Gutiérrez *et al.*, 2019; Stacchezzini *et al.*, 2016; Ramos, 2019; Nilsson *et al.*, 2018; Allen *et al.*, 2018; Stubbs and Higgins, 2018; Adams, 2017a, 2017b; Burke and Clark, 2016; Benson *et al.*, 2015; Müller *et al.*, 2015; Butler *et al.*, 2014; Sala *et al.*, 2013). In addition, other word frequencies are for “goals” (59), “change” (48), “climate” (45), “processes” (32), “global” (35), “firms” (34), and “SDGs” (33) (Appendix A1, Table A1).

On the basis of the bibliometric analysis, a graph relating to the dynamic growth of the keywords most commonly used by the authors present in the database is reconstructed (Aria and Cuccurullo, 2017), thus shaping the more or less significant plot of the database topic in the graph. Figure 2 shows the co-occurrence of the 20 most frequent words by year. It is interesting to note how the term “SD” records a particularly significant growing peak

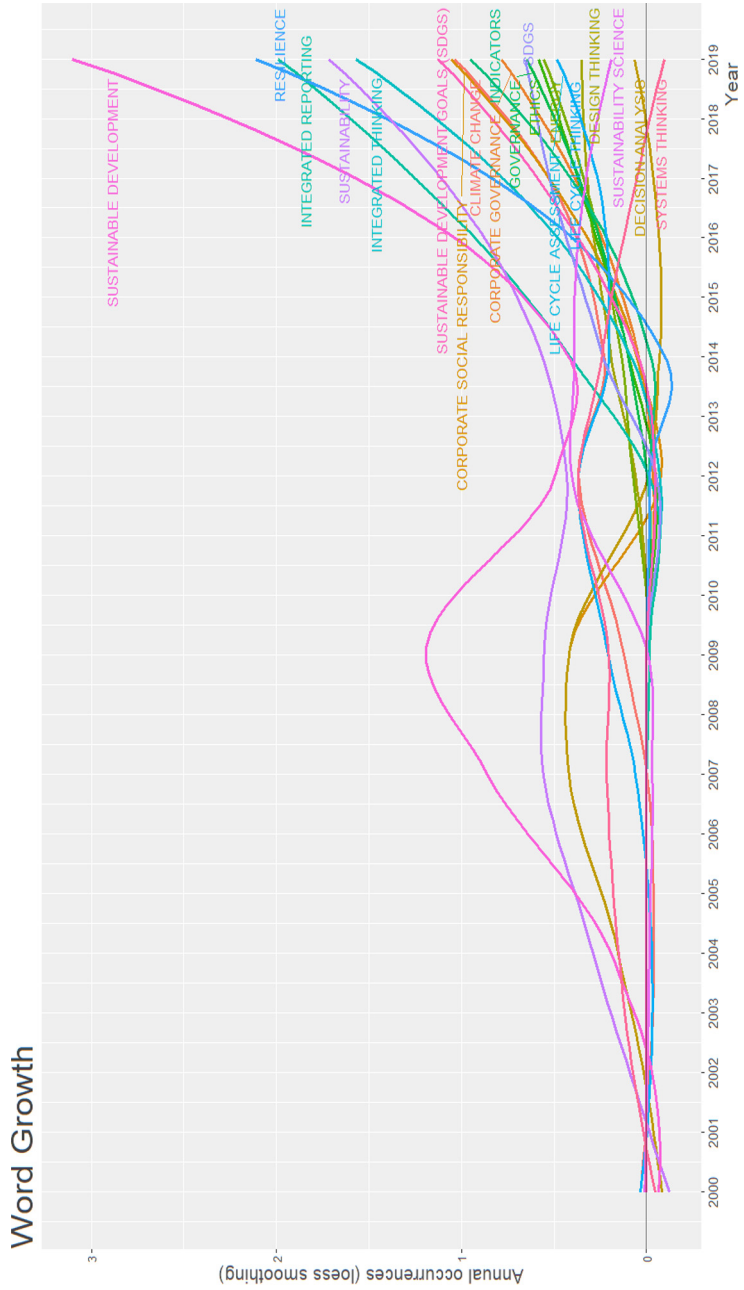


Figure 2.
Top 20 authors
keywords

starting from 2015. This is surely explained by the adoption of the United Nations 2030 Agenda in that year, which multiplied scholars' and institutions' efforts, contributing to the process of a global shift towards sustainability.

Next, the words "IR", "sustainability" and "IT", and immediately afterwards "SDGs", indicate growth starting from 2012–2013, relating to the formation year of the International Integrated Reporting Council (IIRC), the international body responsible for the planning, harmonization and dissemination of reporting practices integrated at a global level.

This co-occurrence index demonstrates the tight links among IR, IT and SD, demonstrating that IR is based on the unification of processes, favouring the adoption of IT, able to favour dialogue between all company parts. IR through IT allows firms to surpass a narrow profit mindset towards adopting a model based on the creation of long-term value as a prerogative for sustainability.

This report, however, is confirmed by cluster results in Figures 3 and 4. The images show that, among the keywords used by the authors, there are thematic links highlighted by the colour of the words linked by the filaments. Figure 3 indicates mainly that by selecting the terms "IR" and "IT" an orange cluster is formed, which has a link with the terms "sustainable development" and "sustainability", which are coloured in orange.

Similarly, Figure 4 shows that selecting the term "sustainable development" creates three dark orange, green, and blue clusters. In this case also, the filaments link "sustainable

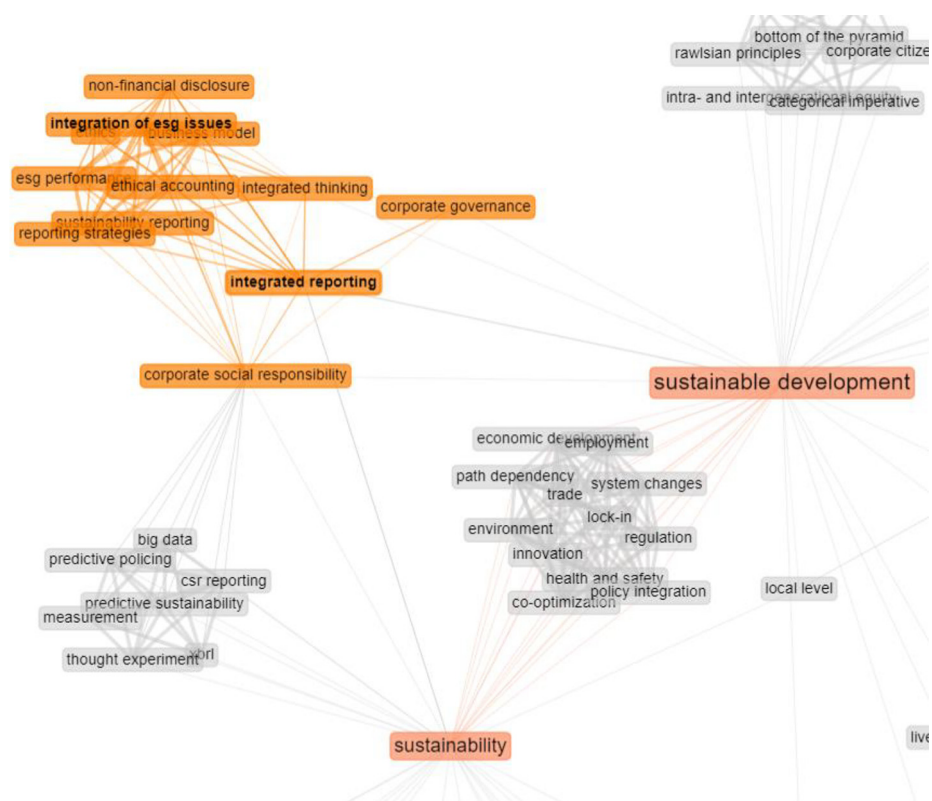
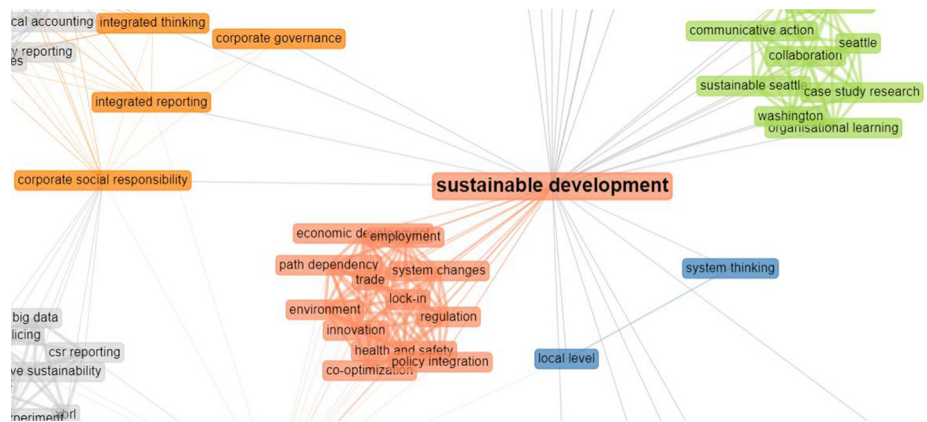


Figure 3.
Thematic maps
cluster selecting by
"IR" and "IT"

Figure 4.
Thematic maps
cluster selecting by
“SD”



development” with the terms “IR”, “IT”, and “corporate social responsibility (CSR)”, together with other words including “system thinking” (blue cluster), “collaboration”, and “communicative action” (green cluster) or “policy integration” (orange cluster).

These thematic maps confirm the close interrelations among the topics covered in this review, highlighting how the perspective of IR and IT refers to the concept of SD, and vice versa, thus broadening the concept of CSR. The latter is manifested through new forms of sustainability reporting that come to integrate corporate strategy and policies with new responsibilities related to social well-being and environmental protection.

4.2 Content of the selected articles

We now summarize the empirical results from the bibliometric analysis performed on 60 papers. As regards the content of the papers, [Table A1](#) in the Appendix indicates a framework of analysis based on the following categorization: year, author, journal, article type, subtopic, aims and findings and methodology.

The sample paper classification carried out in [Table A1](#), through the schematization of the subtitle and the brief description of the purpose of each paper, reveals that most scholars have analyzed the role of IR as a tool to integrate the dimensions of sustainability in corporate strategy, enhancing the potential of reporting on company management and organization processes, towards the creation of interconnected systems through the adoption of IT ([Grassmann et al., 2019](#); [Calleros-Islas, 2019](#); [Brack et al., 2019](#); [Buil-Fabregá et al., 2019](#); [Rodríguez-Gutiérrez et al., 2019](#); [Stacchezzini et al., 2016](#); [Ramos, 2019](#); [Busco et al., 2019](#); [Nilsson et al., 2018](#); [Allen et al., 2018](#); [Stubbs and Higgins, 2018](#); [Guthrie et al., 2017](#); [Adams, 2017a, 2017b](#); [Busco et al., 2017](#); [Dumay and Dai, 2017](#); [Dumay et al., 2016](#); [Burke and Clark, 2016](#); [Lancione and Clegg, 2015](#); [Müller et al., 2015](#); [de Villiers et al., 2014](#); [Norström et al., 2014](#); [Butler et al., 2014](#); [Sala et al., 2013](#); [Soyka, 2013](#); [Milne and Gray, 2013](#); [Thabrew et al., 2009](#)).

Below is a systematization of the results through a division by decades: 1990–1999; 2000–2009; 2010–2020. This approach will help to reconstruct the evolution of the literature on the topic, measuring the degree of interest of scholars from the 1990s until today.

4.2.1 Years 1990–2000. The interest in integrating sustainability into corporate reporting spaces has emerged since the 1990s. The globalization of markets and the development of new technologies has progressively changed the reporting needs, through

the integration of the financial axis with concerns related to social well-being and environmental exploitation.

The first country to experiment with an IR form is South Africa, when the King Committee was set up by Mervyn King in 1994. The aim was to create a corporate governance code aimed at reporting to stakeholders all aspects of social activity, including environmental and social aspects of corporate activity. This was the first impetus for the diffusion of integrated accounting practices, characterized by a multi-stakeholder approach, which extends corporate responsibility also to the non-financial results of management.

In 1997, the Global Reporting Initiative (GRI) was established, with the aim of providing a framework, which soon spread to economic organizations around the world, to guide companies to improve the transparency of non-financial information. The GRI has become the reference point for sustainability reporting initiatives, through the release of guidelines and standards that adapt to each activity, to identify all those aspects that produce externalities on stakeholders.

The GRI standards, in compliance with the dictates imposed by the regulations of governments, financial markets and international organizations, allow for the measurement of socio-environmental performances and corporate governance initiatives in the process of creating value, improving the relationship of trust with customers and partners.

This belief was soon acknowledged by the “triple bottom line” theory (Elkington, 1998), which aims to challenge traditional accounting, adding to the so-called “bottom line” of profit two other lines, referring to social and environmental implications.

This approach is based on the triple dimension of economic activity, which includes the achievement of profit but guarantees the protection of people and the planet. In this, consideration is given to sustainability as an intrinsic value in the “corporate ecosystem”, capable of generating long-term value. This has yielded awareness among scholars and economic operators that non-financial reporting represents a mechanism for monitoring and managing the risk associated with a company’s business. It also improves CSR by promoting more efficient and informed investment choices, with a positive impact on performance.

4.2.2 Years 2001–2010. Since the 2000s, scholars have shown great interest in environmental issues, trying to investigate the correlation between financial performance and environmental performance (Sharma, 2002), while neglecting the operation of sustainable choices on business models.

Some scholars have investigated the main factors that influence environmental reporting practices, both internal (especially the company dimension) and external because they relate to the social, political and economic context (Adams, 2002).

In this phase, the disclosure is strongly influenced by the location, size and culture of each company, but it is unable to involve internal processes, the governance structure or stakeholders. That is, companies tend to disclose to the extent that they manage to obtain a competitive or reputational advantage, taking into account national and international regulatory standards, which place sustainability at the centre of the political agenda of all countries in the world, committed to improving the social commitment of companies and institutions (Adams, 2002; Parker, 2005; Gray, 2006). Indeed, organizations are conditioned by the type of activity carried out and the context in which they conduct business, with the consequence that voluntary disclosure is conditioned by the prerogatives of the board of directors and the intentions of the stakeholders (Abeysekera and Guthrie, 2005).

While in 2006 GRI held its first global conference on sustainability and transparency, entitled "Reporting: A Measure of Sustainability", the literature on sustainability reporting began to develop along two lines. On the one hand, a strategic approach was used to integrate environmental and social information with financial information. On the other hand, there was a growing awareness that the reporting of non-financial performances must be based on a solid management framework that includes socio-environmental prerogatives in the corporate administration choices (Schaltegger and Wagner, 2006). Indeed, information collected by organizations on their social and environmental impacts does not yet guarantee the adoption of balanced decisions by managers, aimed at balancing the social, environmental, or economic effects of the activity, but they have certainly paved the way for greater information awareness (Adams and Frost, 2008). Reporting practices alone are not enough to achieve sustainability, even if they positively influence stakeholders' choices (Stubbs and Cocklin, 2008). However, this is not enough to build an SBM, because shareholders support sustainability initiatives with the aim of obtaining an economic return in the short term, while an SBM is based on programs of structural and cultural change in social and environmental support, for the creation of long-term value with the participation of the interested parties (Hahn, 2009).

In fact, the inclusion of socio-environmental issues in the management and planning processes of the corporate strategy requires a participatory and inclusive approach of all those operating in the corporate context, to create a network between the stakeholders and the external environment (Thabrew *et al.*, 2009).

Companies have begun to adopt discretionary and voluntary reporting practices, in addition to the traditional balance sheet. While it is aimed at shareholders and investors, the sustainability report, containing non-financial information, involves a wider range of stakeholders interested in the company's social and environmental performance. However, the non-integrated approach of these documents has raised many doubts about the accuracy of this information because the data in the reports are often unconnected. Therefore, stakeholders are unable to evaluate the link between corporate performance and the managerial strategy adopted for the creation of long-term value (Eccles and Krzus, 2010).

4.2.3 Years 2011–2020. To improve the quality of corporate disclosure, but above all to encourage a more efficient allocation of resources to generate value, IR was established as a new corporate reporting standard, in which the union of thought and reporting represents a flywheel for the stability and sustainability of the economic system (International Integrated Reporting Council (IIRC), 2011).

The IIRC was born with the aim of developing a new approach to reporting, based on a principle of interconnection of economic, social, environmental and governance information, as a lever for sustainability, in how much "a sustainable planet and a stable economy require sustainable enterprises that support broader social interests by undertaking long-term, as well as short- and medium-term value creation, within planetary limits and society's expectations" (International Integrated Reporting Council (IIRC), 2013a, p. 6).

Although this change shows a commitment of organizations to widening the boundaries of traditional disclosure, the statements made on the aspects of socio-environmental responsibility risk being detached from long-term objectives because they appear as single initiatives, not embedded within the planning and management of corporate activities (Abeysekera, 2013).

Due to external pressure, organizations have produced voluntary reports, especially to satisfy the information interest of the main stakeholders (de Villiers *et al.*, 2014; Kılıç and Kuzey, 2018). Empirical tests conducted by Frias Aceituno *et al.* (2014) have shown that

larger companies are more inclined to disclose information because they incur higher agency costs and more critical situations of information asymmetry.

Indeed “the integration of financial benefits with an organization’s social and environmental benefits requires a modification of the business model. A business model is the process by which an organization creates and sustains value and changes to the business model. They alter the sources of risk and uncertainty and how these risks and uncertainties are managed” (Abeysekera, 2013, p. 243).

This translates into greater CSR, stimulating the adoption of IR towards the adoption of SBMs, in which the prerogatives of sustainability do not represent a further commitment, but integrate the corporate strategy (Atkins *et al.*, 2015; Lancione and Clegg, 2015).

IR, by combining the different impacts of corporate activities within a single document, allows one to establish how the development strategy is interconnected with risk assessments relating to the socio-environmental impact (Sala *et al.*, 2013; de Villiers *et al.*, 2014; Dumay *et al.*, 2016).

In this sense, the IIRC IR framework differs from GRI’s framework because it intends to promote the strategic sustainability of organizations, through risk management for the creation of long-term economic value. Instead, GRI is based on a holistic reporting of sustainability, justifying the use of tangible and intangible resources, to satisfy multiple information interests of the interested parties (de Villiers *et al.*, 2014). Thus, IR has an internal utility, in terms of CSR because it supports management in defining the strategic-decision-making system, that is an external utility, because it promotes the sharing of information useful for the assessment of risks and opportunities, especially for investors (Lambooy *et al.*, 2014; Needles *et al.*, 2016; Dumay *et al.*, 2016).

Otherwise, the adoption of IR should encourage IT (Simnett and Huggins, 2015), i.e. “the active consideration by an organization of the relationships between the various operational and functional entities and the capitals that the organization uses or influences” (International Integrated Reporting Council (IIRC), 2013b, p. 2). According to Müller *et al.* (2015), adopting “heuristic” governance would help organizations understand the business environment, overcome internal divisions, and encourage an integration process, as a strategic basis for business decisions towards a sustainable path.

This is because IR offers a holistic approach to demonstrate corporate value, through the disclosure of financial and non-financial information, based on a better understanding of the processes and opportunities for business growth (Burke and Clark, 2016; Rinaldi *et al.*, 2018). IR allows firms to increase the degree of transparency towards stakeholders and to reduce the information asymmetry with shareholders, who are able to better understand the corporate strategies and the corporate operations.

According to Dumay *et al.* (2016), it is very difficult to penetrate the corporate culture, because it is rooted in habits and is conditioned by multiple external factors. While Feng *et al.* (2017) note that there is no single definition of IT, companies are adopting internal prototypes in the corporate organization.

Otherwise, according to Al-Htaybat and von Alberti-Alhtaybat (2018), IT is based mainly on the management process that involves all company departments, aims and results; therefore, IT should be considered as an integral section of IR, so that IT would represent an “extension” of IR, increasing its value.

The authors who analyzed the use of these integrated approaches by companies, in particular with reference to environmental protection initiatives (Szulecka, 2019; Ramos, 2019; Brack *et al.*, 2019; da Silva and Prasad, 2019; Hölscher *et al.*, 2018; Neto, 2016; Nikolaou *et al.*, 2015; Atkins *et al.*, 2015; Butler *et al.*, 2014), have shown that organizations are better prepared to develop strategies to contain the associated risks of company activities. This

causes an improvement in reputation and a reduction in costs associated with policies in recognition of climate change (Elder *et al.*, 2016). To draw up an effective IR, companies have to be aware that the integration of financial and non-financial information represents the key to the creation of long-term value (Silvestri *et al.*, 2017). They should also report internal dynamics adopted to guide the business model towards the realization of the SDGs (Allen *et al.*, 2018).

This holistic approach could direct investments towards new technologies and innovation tools that can improve the resilience of organizations, making them less vulnerable to the challenges of social and environmental change (Wood, 2019; Butler *et al.*, 2014). For example, the use of “predictive” systems (Seele, 2017) was analyzed, based on the integration of many pieces of corporate information collected in big data, to prevent environmental catastrophes by adopting sustainable solutions.

However, companies still do not have achieved the perfect interconnection between financial and non-financial information, management and the external environment, by not using this information to address future strategies (Silvestri *et al.*, 2017; de Villiers *et al.*, 2017).

Stacchezini *et al.* (2016) indicate that companies that adopt IR not only communicate limited quantitative indicators but also above all they disclose information that is still too scarce regarding the company’s performance and sustainability initiatives. In this sense, despite its potential, IR and IT would not act as an incremental tool for greater transparency towards the stakeholders; it would not be integrated in the choice of the values that underlie the decisions and company initiatives. However, above all, it would not function as a strategic and operational planning tool in the light of the SDGs.

IR continues to be used by companies with a different degree of capillarity. However, IR is not a simple report, but a business management tool, which reveals a company’s ability to create value through its organizational strategy and business model (Macias and Farfan-Lievano, 2017). Thus, in choosing the “material” information to be disclosed, companies should align themselves with the purposes of IR, disclosing information that reveals the corporate strategy (Lai *et al.*, 2017).

IR incorporates the experience of sustainability initiatives but can drive business change only if incorporated into management systems. Then IT has the potential to bring about this change, strengthening control over management and adapting the business model to the integrated strategy (Dumay and Dai, 2017).

According to Guthrie *et al.* (2017), IT and IR could be stimulated by internal change initiatives, such as accounting and corporate planning management, through employee participation.

Del Baldo (2017), however, highlighted the need to provide *ad hoc* guidelines for SMEs, which need simplified instructions to implement the use of IR, through the involvement of the professionals who work for SMEs.

In fact, a multi-stakeholder approach, based on the sharing of skills and values, allows a greater adaptation to action initiatives to create long-term value (da Silva and Prasad, 2019), identifying relevant programs and behaviours to measure and regulate the corporate impact on sustainability (Calleros-Islas, 2019).

Nonetheless, companies are still reluctant to disclose sensitive internal management information to their closest competitors. According to recent empirical evidence (Busco *et al.*, 2019) on a sample of listed European companies, the implementation of integrated tools for thinking and reporting would seem justified by the mere willingness of companies to adapt to regulatory requirements, such as the results of a legitimization process towards

institutions and interested parties (de Villiers and Sharma, 2018), which deny, once again, the use of IR as a tool to integrate management and programming choices towards SBMs.

5. Discussion

Our SLR results show that companies have addressed the issue of sustainability even before the spread of IR. This encouraged the first spontaneous attempts by companies to disclose non-financial information. The aim of these attempts was to increase reputation and gain stakeholder confidence to improve performance.

Mainly, IR allows the incorporation of IT into corporate reporting, with the aim of aligning sustainability objectives with corporate capital management, encouraging the overcoming of the previous business model limited to profit considerations only (Adams, 2017a, 2017b; Busco *et al.*, 2017).

Thus, our study highlights how an SBM requires that sustainability be incorporated into the corporate strategy (Figure A1), supporting decisions and processes in an integrated manner. This is because IR provides the links between the operational and functional units of the company, describing the use of capital, risk management, the realization of results and the future orientation for the creation of long-term value, which constitutes the pillars of our conceptual framework, as highlighted by other authors (Feng *et al.*, 2017; de Villiers *et al.*, 2017; Dumay and Dai, 2017). Most of the studies in our sample reveal that the implementation of IR requires a strong commitment of organizations, through the development of integrated approaches (capable of increasing the correlation degree of the entire business system), to define common objectives and cultivate an action strategy shared with stakeholders (Busco *et al.*, 2019; Dumay and Dai, 2017; Guthrie *et al.*, 2017). In this context, it becomes fundamental to guarantee a certain degree of transparency towards the market and to strengthen the sense of responsibility of the companies, which are called to disseminate all the information useful to investors, according to an integrated logic of interconnection between resources and capital used for the creation of long-term value (Allen *et al.*, 2018).

The success of such an approach is determined by the ability of organizations to share their resources, through integrated action plans, taking into account both structural factors (related to the company's organizational and decision-making structure) and cultural factors, linked to the level of education and involvement of corporate actors on sustainability issues (Stubbs and Cocklin, 2008). However, empirical evidence in practice does not seem to confirm these theoretical guidelines, rather revealing the lack of awareness and commitment on the part of organizations regarding the use of IR and IT, considered as due acts to satisfy the demands of the stakeholders and not as corporate governance tools (Busco *et al.*, 2019; Allen *et al.*, 2018; Stacchezzini *et al.*, 2016; Adams, 2017a, 2017b).

Anchored to the earlier business theory of legitimacy and stakeholders (Busco *et al.*, 2019; de Villiers *et al.*, 2014), companies have not yet realized that IR and IT have brought about an evolution in the way they communicate and create value, facilitating the integration of processes and a better allocation of resources and capital (Adams, 2017a, 2017b; Dumay and Dai, 2017).

Sustainable change will depend on how and how much IR and IT will succeed in supplanting the traditional budget figure, revealing data that go beyond profit numbers, revealing information about the company's financial and non-financial values, and thus measuring a commitment to the future, in defining objectives and priorities associated with social, environmental and economic priorities in company operations.

6. Conclusion, implications, and future research

Through this study we asked ourselves how IR can promote responsible behaviours towards SDGs, analyzing how IT adapts to the dissemination for sustainability according to a circular approach. The results showed that IR questioned the prerogatives of traditional accounting, opening the space to new interpretations of reporting as a sustainable management tool for the company.

Thus, IR aims to strengthen IT, which is reflected in a holistic approach aimed at governing the historical tension between efficiency and financial sustainability.

Scholars have so far been interested in the development of IR and the pragmatic implications on business within the limits of the business context, measuring the disclosure initiatives practiced by companies in each context. Such an approach is not enough to achieve a high degree of harmonization of the company's commitment, which can address towards lasting global development. The integrated model reaches its maximum expression in the creation of SBM for the creation of long-term value. The concept of long-term value expresses the need to obtain a more efficient allocation of capital, adapting the corporate business model to the needs of the external environment and stakeholders. By its nature, IR can contribute significantly to sustainable development, illustrating how the company uses resources and capital to generate value for itself and for all stakeholders.

However, our study highlights how companies still lack loyalty and commitment to improving processes, limiting the use of IR as a means of reporting only the positive results of the business, without feeding the circuit of interconnection among disclosed information, strategy and future investments. The lack of alignment between the use and purpose of IR by organizations prevents improving corporate disclosure practices, in light of the challenge towards sustainable change to which organizations are called, by developing a circular approach, capable of maximizing the use of information to guide company strategy in the process of creating value for employees, suppliers, local communities, institutions and regulatory bodies, and to be responsible for political decisions for the future of the planet and people.

An integrated circular plan would allow the reuse of information to encourage cooperation in corporate departments, reduce costs, limit negative externalities on the environment and encourage experimentation with new technologies to connect, generate, and preserve value.

Furthermore, this approach would allow a specific analysis of all context variables capable of influencing corporate governance and disclosure, facilitating the role of institutions and governments in the adoption of development programs that are interconnected with corporate strategy, in a context improvement for the sustainability business.

Our analysis is limited to a theoretical study. However, the results should encourage other scholars to enrich the field through empirical investigation aimed at studying the role of IR and IT in the realization of SBMs.

Notes

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Further reading

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Appendix 1. “WordCloud” of the abstracts

Details on the most frequent words in the database abstracts are presented below:

Concise
bibliometric
analysis

713



Figure A1.
WordCloud

Appendix 2

Additional and supplementary data in this paper are presented below:

Table A1.
Additional data

| Sr. No. | Author/Year | Journal | Article type | Subtopic | Aims and findings | Methodology |
|---------|--|--|--------------|--|--|--|
| 1 | Busco <i>et al.</i> (2019) | <i>The British Accounting Review</i> | Article | IT; IR; Stakeholder; Legitimacy theory | This paper focusses on the factors that determine the spread of IT and IR practices | Quantitative study |
| 2 | da Silva and Prasad (2019) | <i>Climate And Development</i> | Article | Climate change, adaptation, SD | This paper focusses on climate change and the ability to adapt local infrastructures to promote more sustainable development | Quantitative study |
| 3 | Grassmann <i>et al.</i> (2019) | <i>Sustainability Accounting Management And Policy Journal</i> | Article | IR, value creation | This paper focusses on the role of IR for value creation and process integration | Qualitative study: Content analysis |
| 4 | Calleros-Islas (2019) | <i>Ecological Indicators</i> | Article | SDGs; agriculture; management; sustainability | This paper is focussed on management systems for sustainable agriculture | Qualitative study: Comparative analysis |
| 5 | Brack <i>et al.</i> (2019) | <i>Environmental Sciences Europe</i> | Article | SD; SDGs; water resources; systems | This paper is focussed on environmental protection systems, in particular, water resources | Qualitative study: Explorative study |
| 6 | Buil-Fabregá <i>et al.</i> (2019) | <i>Sustainability</i> | ARTICLE | SDGs; education | This paper focusses on the role of education in achieving SDGs | Qualitative study: Content analysis |
| 7 | Rodriguez-Gutiérrez <i>et al.</i> (2019) | <i>Sustainability Accounting Management And Policy Journal</i> | Article | Organizational-change; accounting research; sustainability; insights; gaps | This paper focusses on the role of IR and reporting models | Qualitative study: Explorative study |
| 8 | Kyvelou and Ierapetritis (2019) | <i>Sustainability</i> | ARTICLE | SDGs; marine resource; systems | This paper is focussed on sustainable marine resource management systems | Qualitative study: Comparative analysis |
| 9 | Zimek <i>et al.</i> (2019) | <i>Sustainability</i> | ARTICLE | Socio-environmental impact; sustainability; business | This paper focusses on systems for assessing the socio-environmental impacts of the business | Qualitative study: Content analysis |
| 10 | Geldermans <i>et al.</i> (2019) | <i>Sustainability</i> | ARTICLE | IR; circular economy; integrated system | This paper focusses on the role of integrated systems in the circular economy | Qualitative study: Case study |
| 11 | Holscher <i>et al.</i> (2019) | <i>Regional Environmental Change</i> | Article | Climate change; integrated system | This paper focusses on the role of integrated systems to contain climate change | Qualitative study: Case study |

(continued)

| Sr. No. | Author/Year | Journal | Article type | Subtopic | Aims and findings | Methodology |
|---------|--------------------------------------|--|--------------|--|--|---|
| 12 | Stacchezzini <i>et al.</i> (2016) | <i>Journal Of Intellectual Capital Sustainability</i> | Article | IR; IC; sustainable development | This paper focusses on the role that IR expresses to enhance IC | Qualitative study; Content analysis |
| 13 | Ramos (2019) | | ARTICLE | Sustainability indicators; SDG | This paper focusses on sustainability indicators | Qualitative study; Explorative study |
| 14 | Wood (2019) | <i>Journal Of Social Marketing Sustainability</i> | Article | Sustainable change; resilience | This paper focusses on the concept of resilience to sustainable change | Qualitative study; Conceptual paper |
| 15 | Szulecka (2019) | | ARTICLE | Sustainable bioenergy production; SD; IT | This paper focusses on sustainable bioenergy production systems | Qualitative study; Comparative analysis |
| 16 | Costa-Campi <i>et al.</i> (2019) | <i>Economics Of Energy & Environmental Policy</i> | Article | Sustainable production; climate change | This paper is focussed on transit systems towards a sustainable economy and combating climate change | Qualitative study; Comparative analysis |
| 17 | Aluchna and Roszkowska-Menkes (2019) | <i>Inzinerine Ekononika-Engineering Economics</i> | Article | IT; CSR; theory | This paper focusses on the role of IT to improve corporate social responsibility | Qualitative study; Conceptual paper |
| 18 | Pombo <i>et al.</i> (2019) | <i>Journal Of Cleaner Production</i> | Article | Sustainability; building sector | This paper focusses on the role of the life cycle to improve sustainability in the building sector | Qualitative study; Case study |
| 19 | Holscher <i>et al.</i> (2018) | <i>Environmental Innovation And Societal Transitions</i> | Article | Sustainability; transition; transformation | This paper is focussed on the "Transition" and "Transformation" role for a sustainable society | Qualitative study; Comparative study |
| 20 | De Villiers and Sharma (2018) | <i>Critical Perspectives On Accounting</i> | Article | Sustainable development; IC; | This paper examines the role and evolution of IC in IR | Qualitative study; Content analysis |
| 21 | Camilleri (2018) | <i>Corporate Communications An International Journal</i> | Article | IT; IR; CSR; theory | This paper examines the use of IR in light of the company's economic theories | Qualitative study; Conceptual paper |
| 22 | Nilsson <i>et al.</i> (2018) | <i>International Journal Sustainability Science</i> | Article | IT; SDGs | This paper studies the systems for evaluating SDG interactions | Qualitative study; Comparative study |
| 23 | Terrapon-Pfaff <i>et al.</i> (2018) | <i>Journal Of Environmental Management</i> | Article | SDGs; IT | This paper studies integrated systems to improve the implementation of SDGs | Qualitative study; Comparative study |
| 24 | Allen <i>et al.</i> (2018) | <i>Sustainability Science</i> | Review | SDGs; IT; Agenda 2030 | This paper studies approaches and systems for better SDG planning | Qualitative study; Comparative study |

(continued)

Table A1.

Table A1.

| Sr. No. | Author/Year | Journal | Article type | Subtopic | Aims and findings | Methodology |
|---------|------------------------------|---|--------------|---------------------------------------|---|--------------------------------------|
| 25 | Galli <i>et al.</i> (2018) | <i>Environmental Science & Policy</i> | Article | SDGs; Agenda 2030; IT | This paper studies integrated approaches for implementing SDGs in Montenegro | Qualitative study: Content analysis |
| 26 | Stubbs and Higgins (2018) | <i>Journal Of Business Ethics</i> | Article | IR; SDGs; quality | This paper focusses on the degree of quality of IR in cases of voluntary or mandatory reporting | Qualitative study: Explorative study |
| 27 | Yeung (2018) | <i>Total Quality Management & Business Excellence</i> | Article | Quality; IT; education | This paper focusses on the use of integrated systems to improve the quality of companies education and better CSR | Qualitative study: Explorative study |
| 28 | Kopnina (2018) | <i>Environmental Education Research</i> | Article | IT; SDGs; University | This paper focusses on the use of integrated systems to insert SDGs in university development programs | Qualitative study: Case study |
| 29 | Adams (2017b) | <i>Routledge</i> | BOOK | IT; IR; CSR | This paper is focussed on IT and IR to achieve SDG and improve CSR | Qualitative study |
| 20 | Guthrie <i>et al.</i> (2017) | <i>Meditari Accountancy Research</i> | Article | IR; IT; CSR; IIRC | This paper is focussed on the evolution of IR in Italian Public Sector Organizations | Qualitative study: Comparative study |
| 31 | Collste <i>et al.</i> (2017) | <i>Sustainability Science</i> | Article | SDGs; IT; impact | This paper focusses on the use of a system for analyzing the impacts of SDGs in business development programs | Qualitative study: Case study |
| 32 | Brittin <i>et al.</i> (2017) | <i>Journal Of Architectural And Planning Research</i> | Article | IT; health sector | This paper focusses on the use of integrated systems to improve health performance | Qualitative study: Case study |
| 33 | Seele (2017) | <i>Journal Of Cleaner Production</i> | Article | Preventive policy; climate change; IT | This paper focusses on the preventive policy systems adopted to mitigate climate change and promote sustainable behavior | Qualitative study: Conceptual paper |
| 34 | Adams (2017a) | <i>Accounting Auditing & Accountability Journal</i> | Article | SDGs; IT; value creation; IR | This paper focusses on the use of integrated systems for assessing the socio-environmental impact in the value creation process | Qualitative study: Content analysis |

(continued)

| Sr. No. | Author/Year | Journal | Article type | Subtopic | Aims and findings | Methodology |
|---------|---|--|--------------|---|--|---|
| 35 | Busco et al.(2017) | <i>Strategic Finance</i> | ARTICLE | SDGs; IT, IR | This paper focusses on the use of IR and IT as tools to create long-term value for sustainable development | Qualitative study: Case study |
| 36 | Dumay et al.(2016) | <i>Accounting Forum</i> | Article | IR; IT; CSR; sustainable development | This paper examines the progress of IR in the literature | Qualitative study: Explorative study |
| 37 | Dumay and Dai (2017) | <i>Meditari Accountancy Research</i> | Article | IR; IT; CSR; management system | This paper explores the role of IR and IT in the banking system | Qualitative study: Case study |
| 38 | Neto (2016) | <i>Utilities Policy</i> | Article | SDGs; IT; water cycles; good practices | This paper is focussed on the use of integrated systems and good practices to improve the sustainability of water cycles | Qualitative study: Conceptual paper |
| 39 | Elder et al.(2016) | <i>Sustainability</i> | ARTICLE | SDGs; system; implementing | This paper focusses on the systems for implementing the SDGs | Qualitative study: Content analysis |
| 40 | Burke and Clark (2016) | <i>Business Horizons</i> | Article | IR; IT; sustainable development | This paper focusses on the advantages of IR and IT | Qualitative study: Content analysis |
| 41 | Polido et al. (2016) | <i>Environmental Impact Assessment Review</i> | Article | SDGs; environmental impact; good governance | This paper focusses on the advantages of a good environmental impact assessment to promote the development of small island | Qualitative study: Explorative study |
| 42 | Nikokou et al.(2015) | <i>Journal Of Cleaner Production</i> | Article | IT; climate change; good governance | This paper focusses on the advantages of an integrated assessment system to mitigate the socio-environmental risks associated with the business activity | Quantitative study |
| 43 | Muller et al. (2015) | <i>Current Opinion In Environmental Sustainability</i> | Article | SDGs; Agenda 2030; IT | This paper focusses on the advantages of an integrated assessment system to identify the resources needed for sustainable development | Qualitative study: Explorative study |
| 44 | Lancione and Clegg (2015) | <i>Management Learning</i> | Article | IT; sustainable development | This paper investigates the role of IT to improve the sustainable education of companies | Qualitative study: Case study |

(continued)

Table A1.

Table A1.

| Sr. No. | Author/Year | Journal | Article type | Subtopic | Aims and findings | Methodology |
|---------|------------------------------|--|--------------|---|---|--------------------------------------|
| 45 | Adams (2015) | <i>Critical Perspectives On Accounting</i> | Article | IR; CSR; reporting | This paper analyzes the influence of IR on corporate thinking, to condition the strategy and decision-making processes towards sustainability | Qualitative study: Conceptual paper |
| 46 | Atkins et al.(2015) | <i>Accounting, Auditing & Accountability Journal</i> | Article | IR; sustainability | This paper investigates the effects of IR on environmental sustainability, to encourage a change in business practice | Qualitative study: Conceptual paper |
| 47 | de Villiers et al. (2014) | <i>Accounting, Auditing & Accountability Journal</i> | Article | IR; CSR | This paper examines the development of IR | Qualitative study: Conceptual paper |
| 48 | Norstrom et al.(2014) | <i>Ecology And Society</i> | Article | SDGs; integrated perspective; management | This paper supports the combination of integrated perspective, feasibility studies and management of objectives for the realization of the SDGs | Qualitative study: Conceptual paper |
| 49 | Butler et al.(2014) | <i>Global Environmental Change-Human And Policy Dimensions</i> | Article | Sustainable development; IT; integrated system | This paper investigates the use of adaptation paths for the adoption of integrated systems to reduce the socio-environmental impact of company activities | Qualitative study: Case study |
| 50 | Frias Aceituno et al. (2014) | <i>Business Strategy And The Environment</i> | Article | IR; IT; CSR; sustainable development | This paper explores the role of stakeholders in IR production | Quantitative study |
| 51 | Soyka (2013) | <i>Environmental Quality Management</i> | Article | IIRC; IR; sustainable development | This paper examines the role of IIRC for building IR | Qualitative study: Explorative study |
| 52 | Adams (2013) | <i>Global Responsibility</i> | Article | Sustainability; CSR; participatory culture; stakeholder | This paper examines the importance of developing a participatory culture on the part of all corporate actors to increase sustainability in planning processes | Qualitative study: Conceptual paper |
| 53 | Sala et al.(2013a) | <i>International Journal Of Life Cycle Assessment</i> | Article | Sustainable development; IT; integrated system | This paper on the use of integrated systems for achieving sustainability goals | Qualitative study: Explorative study |

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| Sr. No. | Author/Year | Journal | Article type | Subtopic | Aims and findings | Methodology |
|---------|------------------------------|--|--------------|--|---|---|
| 54 | Sala <i>et al.</i> (2013b) | <i>International Journal Of Life Cycle Assessment</i> | Article | SDGs; IT | This paper on the use of integrated assessment systems as a support for the company policy for the realization of sustainability objectives | Qualitative study: Explorative study |
| 55 | Milne and Gray (2013) | <i>Journal Of Business Ethics</i> | Article | CSR; sustainable development | This paper explores the use of reporting to support sustainability commitments | Quantitative study |
| 56 | Ashford and Hall (2011) | <i>Sustainability</i> | ARTICLE | Government; AI; IT | This paper investigates the union of forces between institutions and the corporate world for the realization of sustainability, also through the use of artificial intelligence | Qualitative study: Explorative study |
| 57 | Stubbs and Cocklin (2008) | <i>Organization & Environment</i> | Article | CSR; SBM; performance | This paper analyzes the characteristics of an optimal sustainable business model, integrated with corporate thinking and strategy | Qualitative study: Conceptual paper |
| 58 | Hahn (2009) | <i>Journal Of Business Ethics</i> | Article | Sustainability; partnership | This paper focusses on the role of businesses and the partnership for sustainability | Qualitative study: Explorative study |
| 59 | Thabrew <i>et al.</i> (2009) | <i>Journal Of Cleaner Production</i> | Article | Sustainable development; Stakeholder; IT | This paper focusses on the importance of integrating sustainability into company programs also through stakeholder engagement | Qualitative study: Conceptual paper |
| 60 | Adams (2002) | <i>Accounting, Auditing & Accountability Journal</i> | Article | Theory; CSR; reporting | This paper focusses on the analysis of business features that influence social reporting | Qualitative study: Content analysis |

Table A1.