



Exploring Sustainability Discourse in Accounting: A Literature Analysis

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Abstract. The relationship between sustainability and accounting has been continuously discussed in the academic literature over the last three decades. From a sustainability perspective, the accounting discipline must play a major role in the measurement, reporting, and auditing of sustainability performance. The aim of this study is to explore the discourse on sustainability and its performance in the accounting field. For this purpose, we selected articles from 3, 4, and 4* accounting journals and analysed the sustainability trend with each sustainability dimension, both separately and jointly. Based on our analysis, findings suggest that environmental sustainability is more discussed than economic and social sustainability in the accounting field. By examining sustainability performance management, we found that accounting and auditing have been highly emphasized in top accounting journals as compared to auditing. The aspect of reporting covers social, economic, and environmental sustainability equally. As regards accounting, on the other hand, higher attention is given to environmental sustainability compared to social and economic sustainability. Assurance has been found to be an emerging topic in the accounting field. With the limitations of the current study, we proposed a bibliometric analysis in order to capture the large dataset and generalization of the discourse on accounting and sustainability in the accounting field.

Keywords: Sustainability · Accounting · Sustainability performance management · Taxonomy

1 Introduction

The idea of sustainable development originated from the Declaration of the United Nations Conference on the Human Environment of 1972 [1] and was further promoted by The World Conservation Strategy of 1980 [2]. Afterwards, the United Nation's Brundtland Commission report "Our Common Future, From One Earth to One World" in 1987 defined Sustainable development as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." [3]. It has been widely accepted that sustainable development has three dimensions: environmental, economic and social [4, 5]. Based on this assumption, the world is moving towards the implementation of sustainable development in every sector, and

it has become a very attractive research field for business, academics and regulators [6]. Nowadays, sustainable development covering the economic, social and environmental aspects has emerged as the vital challenge for society and organizations [7].

In order to measure economic efforts concerning sustainable practices at the organizational level, the concept of sustainability accounting first appeared in the early 1990s [8, 9]. Based on the concept of Triple Bottom Line [10], the Global Reporting Initiative (GRI) sustainability reporting guidelines were introduced to assist organization and stakeholders in reporting economic, social and environmental performance and accountability [11]. In the past, a stream of research has attempted to link sustainability and sustainability performance (measurement, accounting and reporting) separately [12–15], but no prior study has examined this one-to-one relationship, especially in the accounting domain.

Sustainability accounting has captured the central position in the overall development of sustainability practices, measurement and governance at the organizational level [16]. Schaltegger and Burritt (2010) defined sustainability accounting as follows: “Sustainability accounting describes a subset of accounting that deals with activities, methods and systems to record, analyse and report: First, environmentally and socially induced financial impacts, Second, ecological and social impacts of a defined economic system (e.g., the company, production site, nation, etc.), and Third, the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability.”

The aim of this research study is to explore the discourse on sustainability in the accounting research domain. Through literature review in top-ranked accounting journals, we attempted to classify a number of papers dealing with aspects of sustainability performance management, such as accounting, reporting and auditing. We classified the selected papers into a new specific framework and tried to provide some preliminary trends and significant insights for future research.

The flow of the paper is as follows: first, we defined the research methodology, including the search protocol and literature taxonomy with definitions. Second, we presented the results, including research trends and key data descriptions. Finally, we presented the discussion, future research directions, limitations and concluding remarks.

2 Methodology

This section explains the method of data selection, refinement, classification and analysis strategy. This approach is well established in the literature and has been employed by Seuring and Muller [18]. To align with the objective of this study, we focused on mean systematicity as suggested by Rowe [19]. Rowe [19] argued that this type of review is legitimate when the aim of the study is to highlight the theoretical understanding of the domain as opposed to the broader coverage of the topic. We categorise our research methodology into four parts: dataset setting, data refinement, taxonomy development for classifying the selected literature, and data analysis. First, we defined the dataset that collects the literature on sustainability we want to analyse. As we focused on sustainability and accounting perspectives, we selected ABS journals falling into the category of 3, 4 and 4* ranking. In this phase, we first defined the scope and search criteria to

create a preliminary dataset. Secondly, we refined the dataset by carefully reading the content of each research article. In the third step, we analysed the selected article for the development of the taxonomy based on the theoretical dimensions of sustainability and sustainability accounting, specifically sustainable performance management. Finally, we presented the results of our analysis. The following sections provide further details on each step.

2.1 Dataset Selection

In order to create a first version of our dataset, we select SCOPUS as an appropriate source of information where to perform our search. The main reason for selecting this database was that it fully accessed the top 20000 journals covering almost 70000 traceable records and has been recognized as reliable source for peer-reviewed journals in the social sciences [20]. We selected articles from ABS journals related to the accounting field only. For this purpose, we used the keyword “Sustainability” along with the ISSN of ABS journals ranked 3, 4 and 4*. Then, we performed the following query to create the dataset.

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( TITLE-ABS-KEY ( sustainability ) AND ISSN ( "0001-4826" OR "0361-3682" OR "0165-4101" OR "0021-8456" OR "0823-9150" OR "1380-6653" OR "0001-3072" OR "0001-4788" OR "0155-9982" OR "0888-7993" OR "0951-3574" OR "0278-0380" OR "1050-4753" OR "0890-8389" OR "0007-1870" OR "1045-2354" OR "0963-8180" OR "0267-4424" OR "1554-0642" OR "1094-4060" OR "0278-4254" OR "0737-4607" OR "0148-558X" OR "0306-686X" OR "1061-9518" OR "0198-9073" OR "1044-5005" ) )
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By running the above query, we identified 278 research papers for our initial dataset. The above query was not limited to any language specification because these journals only published articles in English.

2.2 Data Refining

After carefully reading the content (mainly title and abstract) of the 278 articles, we identified 129 papers as being totally out of topic, while 67 research articles were excluded since they were too far from the scope of this paper. Finally, we identified 82 articles relevant to the topic of sustainability and accounting. During further refinement, we removed one additional article since it was a duplicate. The final dataset on which we performed our analysis was composed by 81 articles published in 3, 4 and 4* journals (see the list of articles as Appendix A).

2.3 Selection of Dimensions and Taxonomy Development

To create a taxonomy of the papers included in the dataset, the researcher should focus on past theoretical considerations [21]. For this purpose, we reviewed the past literature for conceptual clarity and classification of the dimensions of sustainability and sustainability performance management. In the following section, we explained the two dimensions

used to develop our taxonomy, specifically *sustainability* and *sustainability performance management*. For the development of the taxonomy, we adopted the well-established criteria by [22]. Nickerson et al. [22] presented the methodology of taxonomy development. Following this method, we first identified the *meta-characteristics* and *subjective and objective ending conditions*. During our 1st iteration (conceptual to empirical), we reviewed past literature regarding *sustainability* and *sustainability performance management*. For each dimension we identified a set of values to assign to each paper to create our taxonomy. Environmental, social and economic are the possible values for the sustainability dimension. For the sustainability performance management dimension, on the other hand, we identified the following four key concepts in the accounting domain: accounting, reporting, auditing and assurance. During our 2nd iteration (*empirical to conceptual*), we performed an in-depth analysis of title, abstract, keywords and assigned a value to each article until robustness was achieved. In this process, we also observed the different combinations of the already identified dimensions of sustainability (social, environmental, economic) and sustainability performance management (accounting, auditing, assurance, reporting) in *iteration 1 (conceptual to empirical)*. For the sustainability dimension, we also found two more categories covering the combination of 1) social, economic and environmental sustainability and 2) social and environmental sustainability separately. Thus, we obtained a total of 5 categories of sustainability. Similarly, we included sustainability assurance in the sustainability auditing due to the same nature of both values. In this *iteration 2*, we also identified the new category of *sustainability performance management* with the combination of both accounting and reporting. These two iterations were performed by two independent researchers. After meeting the ending conditions according to the meta-characteristics, we classified the taxonomy for further analysis. Moreover, as we addressed the small set of studies in accounting field, we only focused on the conceptual insights from the previous body of literature in this specific domain (*meta-characteristic*). Further details concerning the definition of each of the *sustainability* and *sustainability performance management* values are presented in the following sections.

Sustainability Dimension

At the corporate level, multiple sources, including corporate objectives, stakeholder demand, company reputation, regulations, are pressing for sustainability management [23]. There is a debate about the dimensionality of sustainability. Most researchers agree that sustainability consists of three dimensions, including social, economic and environmental [24]. Based on these arguments, Inayatullah [25] suggested that spirituality should be the fourth domain of sustainability. Similarly, Seghezzi [26] presented the five dimensions of the sustainability framework by including people and permanence in the sustainability domain. Bansal [27] described the nested nature of sustainability based on the argument that economy is a primary aspect of society, which is based on the ecological system. Similarly, Sheth et al. [28] contended that the dimensions of sustainability, such as social, economic and environmental, are interconnected. The concept of Triple Bottom Line (TBL) has further strengthened the three dimensions of sustainability by measuring them separately.

At the universal level, sustainability has become much popular with the launch of the 2030 agenda of Sustainable Development Goals (SDGs) by the United Nations.

It involved international cooperation through global indicators and the cooperation of governments, civil society, the private sector and institutions [29]. The SD framework identifies the 17 SDGs that are based on social, economic and environmental challenges [30].

Apart from above conceptual insights, the three-dimensionality of sustainability has been widely acknowledged by international communities [29] and guidelines for the three dimensions of sustainability have been published [11]. Based on the above discussion, we believe that the social, economic and environmental dimensions are major aspects of sustainability. Table 1 presents the definition of each value of the sustainability dimension used to create our taxonomy.

Table 1. Sustainability dimension

Value	Description
Environmental	Meeting human needs without compromising the health of ecosystems [31] Maintaining natural resources and nature's services at a 'suitable level' [32] The ability to maintain things or qualities that are valued in the physical environment [33]
Social	Social sustainability is a quality of society that encourages durable circumstances for human well-being, particularly for susceptible people or groups. [34] Development that can take place by balancing the evolution of civil society, and this development will result in a more prosperous environment [35]
Economic	"Maintenance of capital", or keeping capital intact [36] Economic sustainability is the ability of an economy to support a defined level of economic production indefinitely [37] "The widely accepted definition of economic sustainability is maintenance of capital, or keeping capital intact. Thus Hicks's definition of income - the amount one can consume during a period and still be as well off at the end of the period - can define economic sustainability, as it devolves on consuming value-added (interest), rather than capital." [38]

Sustainability Performance Management Dimension

Due to increasing unsustainable practices, sustainability performance management has become a challenge for organizations. Büyüközkan and Karabulut [6] defined sustainability performance as "the aggregate negative or positive bottom line of economic, environmental and social impacts of an entity against a defined baseline". Accounting and reporting have been considered the main aspects of sustainability performance management [17, 39]. Accounting deals with identifying information for defined indicators and measure them in precise manner, while reporting includes the communication and utilization of reports for decision making [15].

Adams and Whelan [40] found that sustainability reporting leads to increased transparency and accountability among corporations. Sustainability reporting plays a vital role in the development of company reputation. Previous literature indicates that there are many compelling factors behind sustainability reporting, including institutional, societal and stakeholder factors (e.g. [41, 42]).

Sustainability assurance has become the emerging stream of research in the accounting literature [13]. Manetti and Becatti [43] defined sustainability assurance as “assurance services for sustainability-related information in corporate reports”. A recent survey conducted by KPMG found a tremendous increase in organizations for the assurance of sustainability reports [44]. The International Audit and Assurance Standards Board (IAASB) defines assurance as “an engagement in which a practitioner aims to obtain sufficient appropriate evidence in order to express a conclusion designed to enhance the degree of confidence of the intended users other than the responsible party about the subject matter information” [45]. Gray [14] reported that sustainability reporting lacks balanced and reliable information on sustainability performance. To increase the credibility of the report, third-party assurance was initiated on voluntarily basis [46].

It has been observed that 93% out of 250 large companies are disclosing sustainability reports [47]. This upward trend has been further supported by the issuance of the Global Reporting Initiatives (GRI) indicators. In order to address at corporate level, sustainability auditing has emerged as a relevant field [48]. Auditing plays an important role in authenticating accounts, specifically with respect to sustainability and subsequent disclosure. In contrast to this fact, past literature has widely questioned the reliability and quality of sustainability reports [49, 50].

Nitkin and Brooks [48] defined sustainability auditing as “involving three essential characteristics: (a) measurable standards are employed to assess environmental management and performance and link them to other standards or factors; (b) use of a trained audit team; and (c) the organization releases a progress report, either internally to the Board of Directors, externally to the public, or both”.

Past researchers have contended that there is a credibility gap between the measurement and disclosure of sustainability reports [43, 51]. To overcome this gap and enhance the reliability of sustainability disclosure, reports have been observed to be assured by auditors [52, 53].

Auditing is the pre-requisite step for reporting and it has been commonly recognised that there is a negative relationship between financial reporting restatement and audit quality [54]. Despite its significant role in the organization, auditing has been criticized for its role. Detailed definitions of the possible values of the Sustainability Performance Management (SPM) dimension are presented in Table 2.

Table 2. Sustainability performance management

Value	Description
Accounting	“Sustainability accounting describes a subset of accounting that deals with activities, methods and systems to record, analyse and report: first, environmentally and socially induced financial impacts, Second, ecological and social impacts of a defined economic system (e.g., the company, production site, nation, etc.), and Third, the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability.” [17]
Reporting	“Practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development” [11]
Auditing	“Involving three essential characteristics: (a) measurable standards are employed to assess environmental management and performance and link them to other standards or factors; (b) use of a trained audit team; and (c) the organization releases a progress report, either internally to the Board of Directors, externally to the public, or both” [48]
Assurance	“An engagement in which an external third-party assurance provider (i.e. an SAP) is appointed to provide assurance over a sustainability report” [55]

Features of the Dimensions. As clarified by the above explanation, we classified the dimensions of sustainability and sustainability performance management by using the deductive approach. We categorized each dimension based on the literature review and conceptualization of accounting scholars. During coding, we segregated each dimension both separately and with the combination of two or more, after a careful content analysis of each paper.

3 Data Description and Analysis

In order to explore the dimensions of sustainability and sustainability performance management in our dataset, we initially described the entire dataset considering the publication trend and the most productive journals. Afterwards, we first focus on each specific dimension and then analysed the dataset combining both dimensions.

Based on our literature review, for the *sustainability* dimension we labelled the 81 papers using the three values identified for this specific dimension, also employing two additional labels resulting by the combination of these values, based on which aspects of sustainability are discussed in each paper. The resulting labels are: 1) social 2) environmental 3) economic 4) social, environmental and 5) social, environmental, economic.

Similarly, for the sustainability performance management dimension we identified four labels, where auditing and assurance were merged together, namely: 1) accounting 2) reporting 3) auditing (including assurance) and 4) accounting and reporting (for the

paper discussing both aspects). This classification was performed based on our critical analysis of the 81 articles. Assurance was included in the category of auditing since it was conceived from the definition that both concepts are somehow interconnected. Further details are provided in the following sections.

3.1 Publication Trend

Figure 1 shows the publication trend of papers discussing sustainability issues in the leading journals in the accounting fields, covering 28 years, with the first publication in 1992 [8]. From 1992, the publication trend remains stagnant until 2011 (no more than 2 publication every year). From 2012 to 2015, a slight increase in publications in this field is observed. Afterwards, from 2015 to 2017, a decline is witnessed in the sustainability and accounting field. From 2017 to 2019, the number of publications sharply increases to 19. Only two studies are published in 2020, this low number being related to the fact that the query was performed on 25th May 2020, therefore this number is still incomplete.

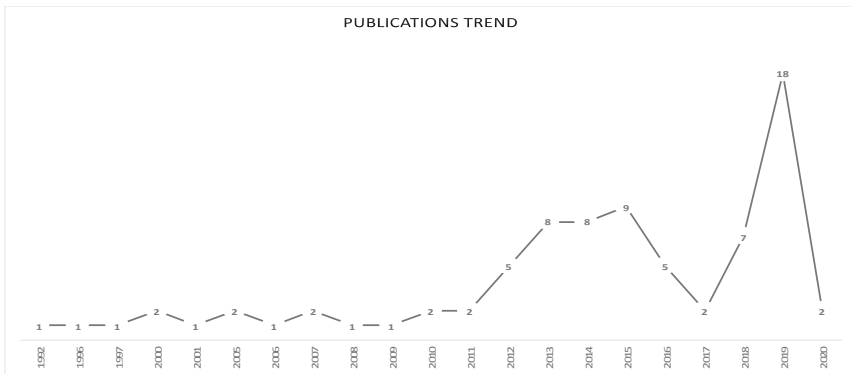


Fig. 1. Number of publications per year in sustainability accounting research since 1992

Figure 2 provides further information on the publication trend, complementing information on the most productive journals. It shows that *Accounting, Auditing and Accountability Journal* is the leading journal with 28 publication, and most of the studies (10) were published during the year 2019. The second highest ranked journal is *Critical Perspectives on Accounting* with 16 publications, and most of the studies (06) were published during the year 2016. Similarly, the third highest ranked journal is *Accounting Forum* which published 11 studies out of the total 81. The rest of the journals published articles on sustainability and accounting ranging from 1 to 4 in different years.

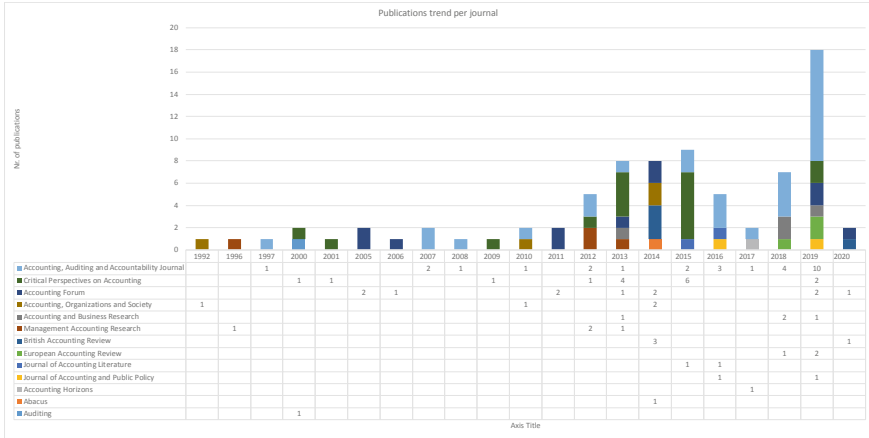


Fig. 2. Number of publications per year in accounting journals since 1992

3.2 Sustainability Dimension vs Journals

Table 3 below presents the sustainability aspects addressed in the accounting journals in categories 3, 4 and 4*. It describes that 54 publications cover all three aspects of sustainability (social, environmental and economic) and that *Accounting, Auditing and Accountability Journal* is the leading one with 19 studies. At the same time, 14 papers address both social and environment aspects of sustainability, with the most productive journals in this subset being *Critical Perspectives on Accounting* and *Accounting, Auditing and Accountability Journal*. Finally, the remaining papers discuss one of the three main aspects of sustainability individually. Environmental sustainability is addressed by 10 papers, 4 of them being published on *Critical Perspectives on Accounting*, while the articles discussing only the social (2 papers) or the economic (1 paper) aspects are published on *Accounting, Auditing and Accountability Journal*. According to the table, economic and social aspects are rarely discussed individually.

Table 3. Sustainability dimension vs Journals

Journals	Social	Environmental	Economic	Social, environmental	Social, environmental, economic	Total
Abacus					1	1
Accounting and Business Research				1	3	4
Accounting Forum		1		2	8	11

(continued)

Table 3. (continued)

Journals	Social	Environmental	Economic	Social, environmental	Social, environmental, economic	Total
Accounting Horizons					1	1
Accounting, Auditing and Accountability Journal	2	2	1	4	19	28
Accounting, Organizations and Society		1			3	4
Auditing					1	1
British Accounting Review		1		1	2	4
Critical Perspectives on Accounting		4		4	8	16
European Accounting Review					3	3
Journal of Accounting and Public Policy				1	1	2
Journal of Accounting Literature					2	2
Management Accounting Research		1		1	2	4
Total	2	10	1	14	54	81

3.3 Sustainability Performance Management vs Journals

Table 4 describes the distribution of papers discussing the dimension of sustainability performance management among the top accounting journals. *Accounting* is the main aspect addressed in 33 research articles, followed by *reporting* with 30 articles. *Auditing* including *assurance* is only discussed in 13 articles, while 5 papers deal with *accounting and reporting* together. *Auditing, Accounting and Accountability Journal* mostly addresses the aspects of *reporting* (12 out of 28 publications) and *accounting* (08),

while *Critical Perspectives on Accounting* addresses the *accounting* (09) and *reporting* (05) aspects, covering 87.5% of its articles. The third most productive journal, *Accounting Forum* is much focused on *reporting* (07 papers) as compared to *accounting* (03) and *auditing including assurance* (01) in its articles.

Table 4. Sustainability performance management vs Journals

Journals	Accounting	Reporting	Auditing (assurance)	Accounting, reporting	Total
Abacus		1			1
Accounting and Business Research	1	1	1	1	4
Accounting Forum	3	7	1		11
Accounting Horizons		1			1
Accounting, Auditing and Accountability Journal	8	12	5	3	28
Accounting, Organizations and Society	4				4
Auditing		1			1
British Accounting Review	3		1		4
Critical Perspectives on Accounting	9	5	1	1	16
European Accounting Review			3		3
Journal of Accounting and Public Policy		1	1		2
Journal of Accounting Literature	1	1			2

(continued)

Table 4. (continued)

Journals	Accounting	Reporting	Auditing (assurance)	Accounting, reporting	Total
Management Accounting Research	4				4
Total	33	30	13	5	81

3.4 Sustainability vs Sustainability Performance Management

Figure 3 describes the comparison between the dimensions of sustainability and sustainability performance management. Among the 54 research articles addressing all three aspects of sustainability, 24 papers focused on the reporting (disclosure) side of sustainability, 15 on accounting, 13 on auditing (including assurance) and 2 articles focused on the *accounting and reporting* issues. Similarly, the 2nd largest category (14 publications) is *social and environmental* sustainability. Among the 14 papers, accounting (6) and reporting (05) are the main aspects discussed, with only three of these papers debating issues concerning *accounting and reporting* (03). The 3rd most populous category is environmental sustainability (10), with all publications focusing on *accounting* issues as well as the two papers discussing the social aspect of sustainability.



Fig. 3. Sustainability vs Sustainability performance management dimensions

Figure 4 describes the comparison between the dimensions of sustainability performance management and sustainability. *Accounting* is the most populous category (33

publications), with 15 papers debating the three aspects of sustainability, while 10 discuss only environmental issues, 2 cover social issues while none addresses economic issues individually. Similarly, the reporting category contains 30 articles mainly addressing all three aspects of sustainability (24) together, while 5 papers concern both social and environment aspects and only one focuses on the economic aspect. All 13 papers in the auditing (including assurance) category address all three aspects of sustainability. Finally, out of 5 articles in the *accounting and reporting* category two focus on all three aspects of sustainability while three cover the *social* and *environmental* aspects. Looking at Fig. 4, the categories of sustainability performance management seem to ignore the economic aspect of sustainability (individually) as well as the social one, while they usually consider all three aspects together.

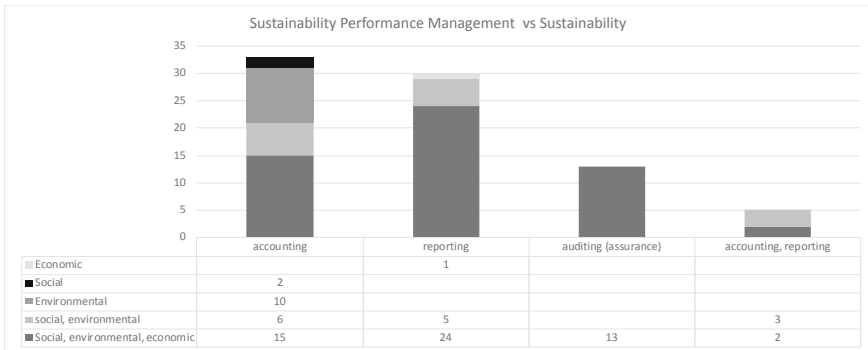


Fig. 4. Sustainability performance management vs Sustainability dimensions

4 Discussion

Based on our analysis, it has been revealed that most studies focus on all three aspects of sustainability including social, economic and environmental in the accounting field. At the individual level, environmental sustainability is more debated as compared to social and economic sustainability in the accounting field. Social and economic sustainability are less debated in the accounting journals individually, while the former is quite discussed in combination with environmental aspects. This is consistent with the arguments made by Büyüközkan and Karabulut [6] that social and economic sustainability is ignored in the sustainability literature. In the context of sustainability performance management, we found that accounting and reporting (disclosure) are mostly addressed in the top ranked accounting journals. A large number of research articles discuss reporting (disclosure) and cover all dimensions of sustainability (social, economic and environmental). A similar trend was observed in the case of the accounting side in the top accounting journals. In the accounting field, most of the papers address environmental sustainability as compared to social and economic. The accounting aspect is less debated in sustainability accounting. Similarly, the reporting side is heavily focused on all dimensions of sustainability, while ignoring the combination of social and economic.

Papers in the auditing (assurance) category cover all dimensions of sustainability. At the individual level, it has been observed that scant research is available on sustainability auditing in the accounting domain. While comparing the different methods of sustainability performance evaluation, similar arguments have also been highlighted by Büyüközkan and Karabulut [6]. They argued that lack of auditing is the major limitation of the GRI framework. In combining accounting and reporting, most of the studies focused on all aspects of sustainability, while ignoring the individual ones.

Based on the above findings, we hereby argue that all dimensions of sustainability including environmental, economic and social, are being addressed in a fragmented way. Although more studies are focusing on environmental sustainability, the overall research in the accounting field should try to focus on integrating all three dimensions of sustainability. Similarly, we did not find any study discussing all aspects of sustainability performance management in the accounting field under one umbrella. Our analysis shows that there is little research for sustainability related personnel including decision makers, policy makers, sustainability managers, accountants etc. We hereby argue that the training and development aspects of sustainability related personnel in accounting, reporting, auditing and assurance should be addressed in the accounting fields.

Accounting, Auditing and Accountability Journal is the leading journal publishing articles on sustainability performance management. The second most influential journal in this field is *Critical Perspective in Accounting*, followed by *Accounting Forum*. Finally, our analysis revealed that the emerging topic in sustainability performance is sustainability assurance which has gained momentum since 2018.

5 Conclusions

The aim of this study is to explore the link between sustainability discourse and sustainability performance management debate in the accounting field, considering top accounting journals.

This study presents a preliminary analysis of 28 years of literature encompassing sustainability and its performance management in the accounting research domain published in ABS 3, 4 and 4* journals. Based on the analysis of 81 articles, we can conclude that sustainability dimensions (social, economic and environmental) have a strong connection with the sustainability performance management dimension, specifically the aspects of *accounting*, *reporting* and *auditing* (assurance) in the accounting field. Social and economic sustainability is being ignored, while the discourse in top accounting journals is highly focused on environmental sustainability. The accounting and reporting (disclosure) aspects of sustainability performance, on the other hand, are widely addressed in top accounting journals.

This study presents the preliminary results of our research journey in exploring sustainability performance management in the sustainability discourse. Despite some interesting findings, we present some future research directions for researchers in the accounting field. First, we performed our analysis with a limited dataset from 3, 4 and 4* journals in the accounting field. An analysis with a large dataset is required to explore the discourse on sustainability and performance in the accounting field. Second, we also recommend a bibliometric analysis, which might be useful to further investigate the

debate on sustainability and its performance management. Third, as we have presented a preliminary analysis of the papers in a specific dataset, future research might perform a deeper content analysis of these contributions in order to develop a conceptual framework describing the relationships between the two dimensions, which could be useful for policy makers, sustainability managers and decision makers. Fourth, future research should study the research characteristics of the sustainability discourse in the accounting field and try to build the taxonomy based on the aspects related to sustainability and sustainability performance management. Fifth, a new research stream has emerged with special focus on smart technologies and sustainability [56], so we propose that the role of smart technologies should be further explored in this context, investigating their impact on the issues concerning sustainability and sustainability performance management. Finally, recent literature has started to discuss the methods of sustainability accounting and reporting in Industry 4.0 [57], we hereby suggest that further research should empirically address sustainability and its performance management issues with a special consideration of Industry 4.0.

Appendix A. List of Final Articles

Sr. no.	Paper	Sustainability	Sustainability performance management
1	Gray, R. (1992). Accounting and environmentalism: an exploration of the challenge of gently accounting for accountability, transparency and sustainability. <i>Accounting, organizations and society</i> , 17(5), 399–425	Environmental	Accounting
2	Milne, M. J. (1996). On sustainability; the environment and management accounting. <i>Management Accounting Research</i> , 7(1), 135–161	Environmental	Accounting
3	Bebbington, J. (1997). Engagement, education and sustainability. <i>Accounting, Auditing & Accountability Journal</i>	Environmental	Accounting
4	Wallage, P. (2000). Assurance on sustainability reporting: An auditor's view. <i>Auditing: A Journal of Practice & Theory</i> , 19(s-1), 53–65	Social, environmental, economic	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
5	Lamberton, G. (2000). Accounting for sustainable development—A case study of city farm. <i>Critical Perspectives on Accounting</i> , 11(5), 583–605	Social, environmental, economic	Accounting
6	Bebbington, J., & Gray, R. (2001). An account of sustainability: failure, success and a reconceptualization. <i>Critical perspectives on accounting</i> , 12(5), 557–587	Environmental	Accounting
7	Lamberton, G. (2005, March). Sustainability accounting—a brief history and conceptual framework. In <i>Accounting forum</i> (Vol. 29, No. 1, pp. 7–26). No longer published by Elsevier	Social, environmental, economic	Accounting
8	Dillard, J., Brown, D., & Marshall, R. S. (2005, March). An environmentally enlightened accounting. In <i>Accounting Forum</i> (Vol. 29, No. 1, pp. 77–101). No longer published by Elsevier	Environmental	Accounting
9	Moneva, J. M., Archel, P., & Correa, C. (2006, June). GRI and the camouflaging of corporate unsustainability. In <i>Accounting forum</i> (Vol. 30, No. 2, pp. 121–137). No longer published by Elsevier	Social, environmental, economic	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
10	Adam, C. A., & McNicholas, P. (2007). Making a difference: Sustainability reporting, accountability and organizational change. <i>Accounting, Auditing & Accountability Journal</i> , 20(3), 382–402	Social, environmental, economic	Reporting
11	Adams, C. A., & Larrinaga-González, C. (2007). Engaging with organisations in pursuit of improved sustainability accounting and performance. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Reporting
12	Adams, C. A. (2008). A commentary on: corporate social responsibility reporting and reputation risk management. <i>Accounting, Auditing & Accountability Journal</i>	Economic	Reporting
13	Brown, J. (2009). Democracy, sustainability and dialogic accounting technologies: Taking pluralism seriously. <i>Critical Perspectives on Accounting</i> , 20(3), 313–342	Environmental	Accounting
14	Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability... and how would we know? An exploration of narratives of organisations and the planet. <i>Accounting, organizations and society</i> , 35(1), 47–62	Social, environmental, economic	Accounting

(continued)

(continued)

Sr. no.	Paper	Sustainability	Sustainability performance management
15	Burrirt, R. L., & Schaltegger, S. (2010). Sustainability accounting and reporting: fad or trend?. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Accounting, reporting
16	Williams, B., Wilmshurst, T., & Clift, R. (2011, September). Sustainability reporting by local government in Australia: Current and future prospects. In <i>Accounting Forum</i> (Vol. 35, No. 3, pp. 176–186). No longer published by Elsevier	Social, environmental, economic	Reporting
17	Joseph, C., & Taplin, R. (2011, March). The measurement of sustainability disclosure: Abundance versus occurrence. In <i>Accounting forum</i> (Vol. 35, No. 1, pp. 19–31). No longer published by Elsevier	Social, environmental, economic	Reporting
18	Songini, L., & Pistoni, A. I. (2012). Accounting, auditing and control for sustainability	Social, environmental, economic	Accounting
19	Gond, J. P., Grubnic, S., Herzig, C., & Moon, J. (2012). Configuring management control systems: Theorizing the integration of strategy and sustainability. <i>Management Accounting Research</i> , 23(3), 205–223	Social, environmental	Accounting

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Sr. no.	Paper	Sustainability	Sustainability performance management
20	Joseph, G. (2012). Ambiguous but tethered: An accounting basis for sustainability reporting. <i>Critical perspectives on Accounting</i> , 23(2), 93–106	Social, environmental, economic	Reporting
21	Fraser, M. (2012). “Fleshing out” an engagement with a social accounting technology. <i>Accounting, Auditing & Accountability Journal</i>	Social	Accounting
22	Gray, R., & Laughlin, R. (2012). It was 20 years ago today: Sgt Pepper, accounting, auditing & accountability journal, green accounting and the blue meanies. <i>Accounting, Auditing & Accountability Journal</i> , 25(2), 228–255	Social, environmental, economic	Accounting
23	Gray, R. (2013). Back to basics: What do we mean by environmental (and social) accounting and what is it for?—A reaction to Thornton. <i>Critical Perspectives on Accounting</i> , 24(6), 459–468	Social, environmental, economic	Reporting
24	Cho, C. H., & Patten, D. M. (2013). Green accounting: Reflections from a CSR and environmental disclosure perspective. <i>Critical Perspectives on Accounting</i> , 24(6), 443–447	Social, environmental	Accounting

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Sr. no.	Paper	Sustainability	Sustainability performance management
25	Deegan, C. (2013). The accountant will have a central role in saving the planet... really? A reflection on 'green accounting and green eyeshades twenty years later'. <i>Critical Perspectives on Accounting</i> , 24(6), 448–458	Environmental	Accounting
26	Cooper, D. J., & Morgan, W. (2013). Meeting the evolving corporate reporting needs of government and society: arguments for a deliberative approach to accounting rule making. <i>Accounting and Business Research</i> , 43(4), 418–441	Social, environmental, economic	Accounting
27	Contrafatto, M., & Burns, J. (2013). Social and environmental accounting, organisational change and management accounting: A processual view. <i>Management Accounting Research</i> , 24(4), 349–365	Social, environmental	Accounting
28	Comyns, B., Figge, F., Hahn, T., & Barkemeyer, R. (2013, September). Sustainability reporting: The role of “Search”, “Experience” and “Credence” information. In <i>Accounting Forum</i> (Vol. 37, No. 3, pp. 231–243). No longer published by Elsevier	Social, environmental	Accounting, reporting
29	Boiral, O. (2013). Sustainability reports as simulacra? A counter-account of A and A + GRI reports. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
30	Spence, C., Chabrak, N., & Pucci, R. (2013). Doxic sunglasses: A response to “Green accounting and Green Eyeshades: Twenty years later”. <i>Critical Perspectives on Accounting</i> , 24(6), 469–473	Environmental	Accounting
31	Lee, K. H., & Wu, Y. (2014). Integrating sustainability performance measurement into logistics and supply networks: A multi-methodological approach. <i>The British Accounting Review</i> , 46(4), 361–378	Social, environmental, economic	Accounting
32	Barkemeyer, R., Comyns, B., Figge, F., & Napolitano, G. (2014, December). CEO statements in sustainability reports: Substantive information or background noise?. In <i>Accounting Forum</i> (Vol. 38, No. 4, pp. 241–257). No longer published by Elsevier	Social, environmental, economic	Accounting
33	Spence, L. J., & Rinaldi, L. (2014). Governmentality in accounting and accountability: A case study of embedding sustainability in a supply chain. <i>Accounting, Organizations and Society</i> , 39(6), 433–452	Environmental	Accounting
34	Herbohn, K., Walker, J., & Loo, H. Y. M. (2014). Corporate social responsibility: The link between sustainability disclosure and sustainability performance. <i>Abacus</i> , 50(4), 422–459	Social, environmental, economic	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
35	Bebbington, J., & Larrinaga, C. (2014). Accounting and sustainable development: An exploration. <i>Accounting, organizations and society</i> , 39(6), 395–413	Social, environmental, economic	Accounting
36	Passetti, E., Cinquini, L., Marelli, A., & Tenucci, A. (2014). Sustainability accounting in action: Lights and shadows in the Italian context. <i>The British Accounting Review</i> , 46(3), 295–308	Social, environmental, economic	Reporting
37	Allen, B. G. (2014, December). What's new about New accounts? Assessing change proposals for social and environmental accounting. In <i>Accounting forum</i> (Vol. 38, No. 4, pp. 278–287). No longer published by Elsevier	Social, environmental	Accounting
38	Burritt, R., & Schaltegger, S. (2014). Accounting towards sustainability in production and supply chains. <i>The British Accounting Review</i> , 46(4), 327–343	Social, environmental	Accounting
39	Brown, J., Dillard, J., Hopper, T., Atkins, J., Atkins, B. C., Thomson, I., & Maroun, W. (2015). “Good” news from nowhere: imagining utopian sustainable accounting. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
40	Roberts, R. W., & Wallace, D. M. (2015). Sustaining diversity in social and environmental accounting research. <i>Critical Perspectives on Accounting</i> , 32, 78–87	Social, environmental	Reporting
41	Thoradeniya, P., Lee, J., Tan, R., & Ferreira, A. (2015). Sustainability reporting and the theory of planned behaviour. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Accounting
42	Watson, L. (2015). Corporate social responsibility research in accounting. <i>Journal of Accounting Literature</i> , 34, 1–16	Social, environmental, economic	Reporting
43	Flower, J. (2015). The international integrated reporting council: a story of failure. <i>Critical Perspectives on Accounting</i> , 27, 1–17	Social, environmental, economic	Accounting
44	Thomson, I. (2015). ‘But does sustainability need capitalism or an integrated report’ a commentary on ‘The International Integrated Reporting Council: A story of failure’ by Flower, J. <i>Critical Perspectives on Accounting</i> , 27, 18–22	Social, environmental, economic	Accounting
45	Adams, C. A. (2015). The international integrated reporting council: a call to action. <i>Critical Perspectives on Accounting</i> , 27, 23–28	Social, environmental, economic	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
46	Humphrey, C., & Gendron, Y. (2015). What is going on? The sustainability of accounting academia. <i>Critical Perspectives on Accounting</i> , 26(C), 47–66	Social, environmental	Accounting
47	Saravanamuthu, K. (2015). Instilling a sustainability ethos in accounting education through the Transformative Learning pedagogy: A case-study. <i>Critical Perspectives on Accounting</i> , 32, 1–36	Social, environmental, economic	Accounting
48	O'Dwyer, B., & Unerman, J. (2016). Fostering rigour in accounting for social sustainability. <i>Accounting, Organizations and Society</i> , 49, 32–40	Social, environmental	Reporting
49	Hummel, K., & Schlick, C. (2016). The relationship between sustainability performance and sustainability disclosure—Reconciling voluntary disclosure theory and legitimacy theory. <i>Journal of Accounting and Public Policy</i> , 35(5), 455–476	Social, environmental, economic	Reporting
50	Manetti, G., & Bellucci, M. (2016). The use of social media for engaging stakeholders in sustainability reporting. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
51	Chatelain-Ponroy, S., & Morin-Delerm, S. (2016). Adoption of sustainable development reporting by universities. <i>Accounting, Auditing & Accountability Journal</i>	Social	Accounting
52	Rezaee, Z. (2016). Business sustainability research: A theoretical and integrated perspective. <i>Journal of Accounting literature</i> , 36, 48–64	Social, environmental, economic	Reporting
53	Bradford, M., Earp, J. B., Showalter, D. S., & Williams, P. F. (2017). Corporate sustainability reporting and stakeholder concerns: Is there a disconnect?. <i>Accounting Horizons</i> , 31(1), 83–102	Social, environmental, economic	Reporting
54	Diouf, D., & Boiral, O. (2017). The quality of sustainability reports and impression management. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Reporting
55	Kaur, A., & Lodhia, S. (2018). Stakeholder engagement in sustainability accounting and reporting. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Accounting
56	Bebbington, J., & Unerman, J. (2018). Achieving the United Nations sustainable development goals. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Auditing (assurance)

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Sr. no.	Paper	Sustainability	Sustainability performance management
57	Stolowy, H., & Paugam, L. (2018). The expansion of non-financial reporting: an exploratory study. <i>Accounting and Business Research, 48</i> (5), 525–548	Social, environmental, economic	Accounting, reporting
58	Unerman, J., Bebbington, J., & O'dwyer, B. (2018). Corporate reporting and accounting for externalities. <i>Accounting and business research, 48</i> (5), 497–522	Social, environmental	Accounting, reporting
59	Reimsbach, D., Hahn, R., & Gürtürk, A. (2018). Integrated reporting and assurance of sustainability information: An experimental study on professional investors' information processing. <i>European Accounting Review, 27</i> (3), 559–581	Social, environmental, economic	Reporting
60	Busco, C., Giovannoni, E., Granà, F., & Izzo, M. F. (2018). Making sustainability meaningful: Aspirations, discourses and reporting practices. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Accounting
61	Egan, M., & Tweedie, D. (2018). A “green” accountant is difficult to find: Can accountants contribute to sustainability management initiatives?. <i>Accounting, Auditing & Accountability Journal, 31</i> (6), 1749–1773	Social, environmental	Reporting

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Sr. no.	Paper	Sustainability	Sustainability performance management
62	Dillard, J., & Vinnari, E. (2019). Critical dialogical accountability: From accounting-based accountability to accountability-based accounting. <i>Critical Perspectives on Accounting</i> , 62, 16–38	Social, environmental, economic	Auditing (assurance)
63	Ferdous, M. I., Adams, C. A., & Boyce, G. (2019). Institutional drivers of environmental management accounting adoption in public sector water organisations. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Auditing (assurance)
64	Farooq, M. B., & De Villiers, C. (2019). Understanding how managers institutionalise sustainability reporting. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Auditing (assurance)
65	Bellucci, M., Simoni, L., Acuti, D., & Manetti, G. (2019). Stakeholder engagement and dialogic accounting. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Reporting
66	Leong, S., & Hazelton, J. (2019). Under what conditions is mandatory disclosure most likely to cause organisational change?. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Auditing (assurance)

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Sr. no.	Paper	Sustainability	Sustainability performance management
67	Moggi, S. (2019, July). Social and environmental reports at universities: a Habermasian view on their evolution. In <i>Accounting Forum</i> (Vol. 43, No. 3, pp. 283–326). Routledge	Social, environmental, economic	Auditing (assurance)
68	Maroun, W. (2019). Does external assurance contribute to higher quality integrated reports?. <i>Journal of Accounting and Public Policy</i> , 38(4), 106670	Social, environmental	Reporting
69	Farooq, M. B., & De Villiers, C. (2019). How sustainability assurance engagement scopes are determined, and its impact on capture and credibility enhancement. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental	Accounting, reporting
70	Boiral, O., Heras-Saizarbitoria, I., & Brotherton, M. C. (2019). Professionalizing the assurance of sustainability reports: the auditors' perspective. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Auditing (assurance)
71	Adams, C. A., & Larrinaga, C. (2019). Progress: engaging with organisations in pursuit of improved sustainability accounting and performance. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Auditing (assurance)

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Sr. no.	Paper	Sustainability	Sustainability performance management
72	Maroun, W. (2019). Exploring the rationale for integrated report assurance. <i>Accounting, Auditing & Accountability Journal</i>	Environmental	Accounting
73	Gazzola, P., Amelio, S., Papagiannis, F., & Michaelides, Z. (2019). Sustainability reporting practices and their social impact to NGO funding in Italy. <i>Critical Perspectives on Accounting</i> , 102085	Social, environmental, economic	Auditing (assurance)
74	Steinmeier, M., & Stich, M. (2019). Does sustainability assurance improve managerial investment decisions?. <i>European Accounting Review</i> , 28(1), 177–209	Social, environmental, economic	Reporting
75	Michelon, G., Patten, D. M., & Romi, A. M. (2019). Creating legitimacy for sustainability assurance practices: Evidence from sustainability restatements. <i>European Accounting Review</i> , 28(2), 395–422	Social, environmental	Reporting
76	Channuntapipat, C., Samsonova-Taddei, A., & Turley, S. (2019). Exploring diversity in sustainability assurance practice. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Auditing (assurance)
77	Canning, M., O'Dwyer, B., & Georgakopoulos, G. (2019). Processes of auditability in sustainability assurance—the case of materiality construction. <i>Accounting and Business Research</i> , 49(1), 1–27	Social, environmental, economic	Auditing (assurance)

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Sr. no.	Paper	Sustainability	Sustainability performance management
78	Farooq, M. B., & De Villiers, C. (2019). The shaping of sustainability assurance through the competition between accounting and non-accounting providers. <i>Accounting, Auditing & Accountability Journal</i>	Social, environmental, economic	Reporting
79	Margerison, J., Fan, M., & Birkin, F. (2019, July). The prospects for environmental accounting and accountability in China. In <i>Accounting Forum</i> (Vol. 43, No. 3, pp. 327–347). Routledge	Social, environmental, economic	Auditing (assurance)
80	Channuntapipat, C., Samsonova-Taddei, A., & Turley, S. (2020). Variation in sustainability assurance practice: An analysis of accounting versus non-accounting providers. <i>The British Accounting Review</i> , 52(2), 100843	Social, environmental, economic	Auditing (assurance)
81	Safari, M., & Areeb, A. (2020, March). A qualitative analysis of GRI principles for defining sustainability report quality: an Australian case from the preparers' perspective. In <i>Accounting Forum</i> (pp. 1–32). Routledge	Social, environmental, economic	Reporting

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