sustainability

MDPI

Article

Sustainability Reporting in the Public Realm—Trends and Patterns in Knowledge Development

Cristina Alexandrina Stefanescu

Department of Accounting and Audit, Faculty of Economics and Business Administration, Babeş-Bolyai University, 400591 Cluj-Napoca, Romania; cristina.palfi@econ.ubbcluj.ro

Abstract: In the wake of increased awareness, as there has been an increasing need for sustainability reporting, research studies have evolved over time. Addressing the challenges and pathways of research in the particular realm of public entities was appropriate to enrich the scientific literature. Since prior studies either conducted a structured literature review on non-financial reporting formats or were focused exclusively on social and environmental accounting, and no bibliometric review has yet been conducted on sustainability reporting in the public sector, this study aims to fill this gap. The objective of the paper is to identify the trends and patterns in knowledge development in the area of sustainability reporting in the public sector to investigate its structure and derive inferences and insights. Bibliometric results reveal that research in this field is still at an early stage, showing an unsteady, slightly upward trend. The literature responded well to the need to enhance the understanding of the public institutions' role in advancing non-financial reporting and evolved along with the continuous development of the related voluntary frameworks (e.g., GRI, <IR>). In this assent, further studies approaching the first mandatory regulation of non-financial information disclosure (Directive 95/2014/EU) are encouraged.

Keywords: sustainability reporting; non-financial reporting; public sector; literature review; bibliometric analysis; knowledge development; science mapping

Citation: Stefanescu, C.A. Sustainability Reporting in the Public Realm—Trends and Patterns in Knowledge Development. *Sustainability* **2021**, *13*, 4128. https://doi.org/10.3390/su13084128

Academic Editor: Javier Andrades

Received: 15 March 2021
Accepted: 6 April 2021
Published: 7 April 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

1. Introduction

On the background of increased demand for responsible corporate behavior, in regards to the greater accountability and transparency towards stakeholders, the concept of sustainability has become an issue of interest to policymakers, global business, society and researchers. It emerged to enhance healthy connections between economic growth, environmental and social matters [1].

However, the basic concept of sustainability dates back several decades, when sustainable development was first defined as the development that meets the needs of the present without compromising the ability of future generations to achieve their own [2]. Since then, it raised public awareness and various sustainability efforts have been made at the strategic, macro-level of institutions and societies. The latest initiative to encourage socio-environmental sustainability was the United Nations' 2030 Agenda, a worldwide agreement to introduce a set of common strategies to achieve 17 sustainable development goals (SDGs). In this vein, organizations had to adopt a holistic approach, adjust their strategy, implement concepts based on integrated thinking and value creation [3], and create tools for sustainability reporting [4,5].

International literature has highlighted that this demand for greater accountability goes beyond private businesses and their shareholders. It involves non-profit and public organizations due to their broader relationship with stakeholders and society [6]. In this context, we have recently assisted in an increased need for sustainability reporting in the

public sector, as organizations from this field are also engaged in sustainable development and are stewards of social and environmental issues [7–9]. They are expected to create public value in compliance with the principles of environmental, economic and social sustainability [9–11] to provide non-financial disclosure to meet stakeholders' expectations and to ensure adequate levels of accountability [12,13]. However, evidence reveals that, although sustainability should be central to public services [14], institutions from this sector are still taking hesitant steps regarding reporting about sustainability, social and environmental strategies and undertaken actions [15].

This struggling background created premises for scholars to approach the links between accountability, accounting and reporting, and to investigate all kinds of organizations, paying attention to sustainability issues and the variety of reporting tools adopted. Accordingly, the sustainability reporting research literature has evolved over time as an interdisciplinary field with emergent areas, from ecological, environmental, economic, and cultural to social issues [16]. In this context, reviewing the available literature in a specific field, such as the public sector, became essential to explore the paths of accountability and reporting practices [9].

Prior studies in this particular realm comprised bibliometric analyses on social and environmental accounting research [6] or structured literature reviews on non-financial reporting formats [17], but no bibliometric review has yet been conducted on sustainability reporting in the public sector. Thus, the present study aims to fill this gap and focuses on detecting the process of the advancement of the research field through a different approach, by applying the tools of bibliometric analysis. Consequently, the present study extends prior bibliometric reviews on sustainability performed in specific areas, such as management [18–21], banking [22,23], tourism [1,24] or accounting [4,25].

The objective of the paper is to identify the trends and patterns in knowledge development in the area of sustainability reporting in the public sector to investigate its structure and to derive inferences and insights. Accordingly, this study seeks to answer the following research questions.

(RQ1) How has sustainability reporting in the public sector evolved and, what are the most addressed issues in recent work?

(RQ2) Which are the most influential journals, the most prolific authors and the leading papers in the researched area?

(RQ3) Which are the collaborative networks that outline the conceptual structure of the field and the intellectual structure of the research community?

(RQ3a) Which public sector areas have been approached (e.g., local government, higher education, healthcare etc.)?

(RQ3b) Which reporting frameworks and formats have been used?

(RQ3c) Which specific concepts and theories have been approached?

For our purposes, we have followed a methodological approach based on bibliometric analysis on a sample of Web of Science (WoS) indexed publications for the period 2014–2020, aiming to perform a statistical and graphical investigation able to emphasize the structure of the research area, the central themes and the existing correlations, in the form of clusters and networks.

Our research makes several contributions. Firstly, it enriches the research literature on sustainability reporting in the public sector as it depicts the evolution of scientific knowledge in this field through quantitative bibliometric tools. Secondly, the scientific mapping reveals the conceptual and intellectual structure of the literature and provides an in-depth investigation of the topics, themes and contents of knowledge. Finally, this paper stands as a benchmark for further development in the research area and provides future avenues.

The remainder of the paper is structured as follows. The next section explains the methodological approach adopted. Afterwards, the bibliometric analysis results reveal the dataset characteristics and their implications, focusing on research flow information,

relevant sources, subject areas, authors' data, and conceptual and intellectual structure. Finally, the paper ends with its conclusions, presenting implications and future research paths, and acknowledges its limitations.

2. Research Methodology

For answering the research questions addressed, the study investigates the structure of the scientific literature, identifies the trends and growth of research and employs science mapping to develop a comprehensive picture of knowledge and ascertain future potentialities in this promising scientific area.

In this vein, bibliometric analysis has been performed since it offers the opportunity to systematize a scientific field by combining performance inquiry and science mapping through a straightforward process [1] that also avoids subjectivity [24]. Moreover, it gained recognition for performing a transparent and reproducible literature review and providing the most reliable results in the systematic process of scientific information analysis [26].

Over the recent past, many scholars performed bibliometric analyses on sustainable development in particular areas such as social finance and sustainable banking [22,23], sustainable business models in tourism [1,24], strategic management for sustainability [18,21], sustainable development and its goals (SDGs) [19,20], integrated thinking and reporting or non-financial disclosure in the EU Directive 2014/95 perspective [4,25]. Thus, our methodological approach follows the research strategy adopted in prior studies.

The information to carry out this analysis has been gathered from the Clarivate Analytics Web of Science (WoS) database. It is the most prestigious and widely used database in fields related to social sciences to make bibliometric studies [27], as it encompasses highly reputable journals from various categories [18,24]. The search protocol applied is summarized in Table 1.

Table 1. Search protocol.

Criteria	Details
Timespan	2014–2020
Document type	Article
Database	Social Science/Emerging Sources Citation Index
Fields	Topic (title, abstract, keywords)
Key-terms	(sustainab */integrated/IR/non-financial/CSR report *) AND (public sector/institut */entit */local)

The search was done to retrieve the documents that contain either a combination of terms regarding sustainable reports in the public sphere, aiming to refer to the phenomenon of sustainability reporting over time [23]. We focused only on the Social Science/Emerging Sources Citation Index of the WoS database to exclusively consider the most valuable knowledge on the researched area. The query was directed to the documents' topics and was only restricted to peer-reviewed articles in the English language [18,22–24].

Even though no restrictions in time scope were initially set, the number of documents retrieved on the searched subject published before the year 2014 was scarce and scattered across various fields related to sustainability. As exceptions, we identified only two papers that examine the applicability of sustainability reporting, using GRI guidelines [28] or analyzing non-financial disclosures [29]. Thus, we decided to conduct the research beginning with the year 2014 in order to observe the literature trends after the first formalization of sustainability reporting marked by Directive 95/2014/EU on non-financial information disclosure [25].

Finally, a filtering process was carried out by reviewing the titles and keywords to ensure they matched the topic and sometimes by reading the abstracts for in-depth

assurance upon the subject matter [4,23,25]. The final sample comprises 79 papers, consistent with prior samples used in the bibliometric analysis [1,4,18,25]. These were considered for further statistical and graphical investigation in order to develop new knowledge in the researched field based on a rigorous approach.

The analysis was performed using Bibliometrix, a statistical package available on R-Studio [26] that facilitates a comprehensive bibliometric study, including data analysis and data visualization. The software allowed us to retrieve relevant bibliometric qualitative and quantitative information such as authors, citations, country of production, or keywords. Then, we performed science-mapping analysis using Biblioshiny (web-based application included in Bibliometrix package) [20].

The analysis was structured into three stages, each one answering one research question addressed (RQ1 to RQ3). It used various Bibliometric tools, consistent with prior studies, to perform both descriptive analyses [1–21,23,24] and scientific mappings [4,20–25]. Accordingly, the analysis not only focused on examining the sampled documents in terms of the basic features of the dataset (e.g., journals, authors, papers), but it also aimed to identify the conceptual and intellectual structure of knowledge, through visualization methods (e.g., three field plots, thematic maps, and network analyses). Moreover, it used more than one indicator/tool in each stage to overcome the limitations that pertain to every synthetic measurement [1,18,19].

A synthesis of the bibliometric tools used in each stage of analysis and their purpose is presented in Table 2.

Table 2. Stages of analysis and bibliometric tools used.

Stages of Analysis/Bibliometric Tools	Description/Purpose
1st stage—Overview information (answering RQ1)	
Growth trends and geographical distribution	descriptive and trends' analysis [1,19,23]
2nd stage—Leading journals, authors and papers (answering RQ2)	
Top productive journals/prolific authors/ cited papers	descriptive and trends' analysis/used to provide evaluative counting and ranking of research productivity and relevance [1,4,19–21,23,24]
Three field plot	simultaneous visualisation of the main items of selected fields based on a Sankey diagram/used to analyse how journals, authors, papers' keywords and cited journals are related [20]
3rd stage—Network analysis (Words and keywords; Co-keywords; Co-citation) (answering RQ3)	
WordCloud	visual representation of words frequency revealed by their size/used as a proxy for relevance in the literature [4,25]
Trend topics	evolution of the top trending topics on a two-dimensional scale with logarithmic value of frequency on the vertical axis against publication years on the horizontal axis/used to unveil interesting patterns developed over time [22]
Co-occurrence network	visualisation of the research hotspots, as a result of the interaction between topics in the content of research papers, based on multiple correspondence analysis/used to observe how the knowledge developed

Stages of Analysis/Bibliometric Tools	Description/Purpose
	towards specific themes by identifying the relationships between concepts [4,20,21,23,24]
Thematic map	visual representation of typological clusters on a two-dimensional plot, based on their density and centrality/used to classify research themes into four quadrants expressing their development and relevance to the knowledge area [22–24]
Topic dendrogram	depiction of the hierarchical clustering of the relationships between keywords/used to provide insights into how themes were assigned to clusters to create the conceptual structure [22,25]
Historical direct citation	chronological map of research paths and their core authors, based on the most relevant citations/used to identify the most significant work on each topic and trace its year-by-year historical development [22,24]

3. Results and Discussions

The bibliometric analysis performed provides valuable insights into the debates in sustainability reporting as it offers the opportunity to thoroughly review this challenging scientific topic with a focus on public environments. It allowed us to develop new knowledge by analyzing a particular field based on a rigorous approach and to contribute to prior discussions on the non-financial reporting in the public sector based on a structured literature review [17]. Besides, the scientific production research of a specific field is relevant for understanding the evolution of literature, as detecting past trends enabled us to suggest future research lines.

3.1. Overview, Growth Trend and Geographical Distribution

During the period studied, 44 journals published, at least one of the 79 scientific papers of our analyzed sample, were the result of the contribution of 172 authors. Figure 1 displays the size, growth trend and distribution of sustainability reporting research in the public sector over the timespan. As can be seen, the evolution was quite unsteady, with its peak reached in the year 2019 when 19 papers were published. The uncertain trend reveals that the research literature in this particular field is far from sufficiently explored. Thus, it leaves room for in-depth research paths.

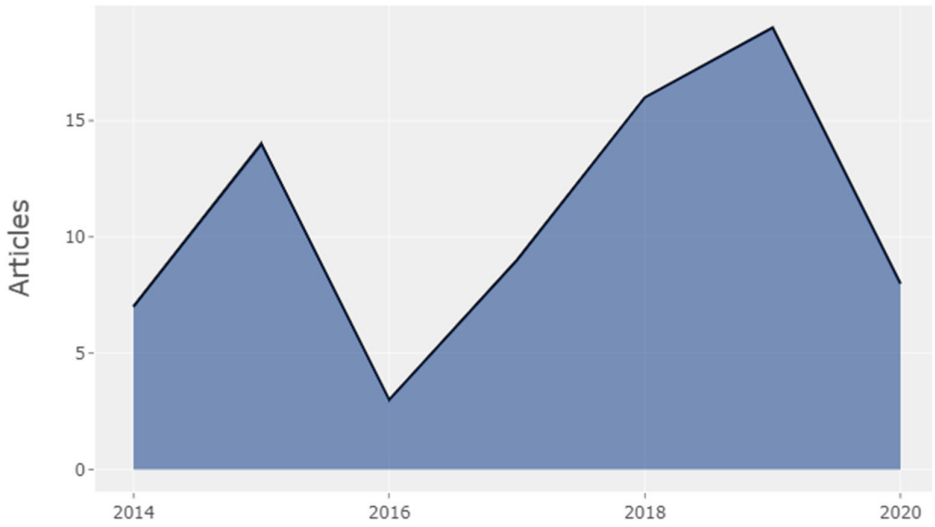

Figure 1. Annual scientific production.

The geographical distribution of sustainability reporting literature in the public sector is presented in Table 3 through the top-10 countries that not only heavily researched this topic, but whose relevant results became highly cited. The number of papers and citations was calculated considering the involvement in the authorship of a country. In the case of authors from different countries, each of them had a point. The majority of contributions within the sampled studies came from Spain and Italy (37.97%), whose researchers were already recognized for their interest in non-financial reporting, motivated by the transparency legislation issued in both countries [17]. Australian scholars not only seem to significantly contribute to the topic analyzed (17.72%), but they also stood in the second position (after Spain) in terms of citations.

Table 3. Most productive and cited countries.

Country	Papers	Citation	Avg.	Country	Papers	Citation	Avg.
Spain	17	298	17.53	New Zealand	3	13	4.33
Australia	14	195	13.93	Romania	3	8	2.67
Italy	13	116	13.93	China	2	3	1.50
Germany	4	17	4.25	Iran	2	14	7.00
Austria	3	65	21.67	South Africa	2	3	1.50

An in-depth analysis of scholars' academic affiliations are presented in Table 4, where there are lists of all the universities whose researchers have published more than two papers using the fractional counting method. It is noteworthy that most of them are from Spain and Italy. These results confirm the country affiliation of the most productive authors.

Table 4. Most productive universities (no. of authors).

Affiliations	Country	No.	Affiliations	Country	No.
Univ Granada	Spain	8	Johannes Kepler Univ	Austria	7
Univ Loyola Andalucia	Spain	8	Univ Salerno	Italy	4
Univ Bologna	Italy	7	Nelson Mandela	South Africa	4
Macquarie Univ	Australia	7	Massey Univ	New Zeeland	4
Babes Bolyai Univ	Romania	7	Ocean Univ China	China	4
Univ Hamburg	Germany	7	Univ Tarbiat Modares	Iran	4

However, both Tables 3 and 4 also show an interesting outcome there are also emerging economies within the most productive countries (e.g., China and Iran). This conclusion is consistent with the previous literature [16], confirming the consequences of the research funding support received.

In conclusion, even though there is a degree of diversity of authors' nationality, the analyzed literature is concentrated on a small number of countries and most of the papers were the product of a co-authorship, only few being single-authored documents (11 papers). Thus, the research field approached seems quite enclosed, but extensively explored.

3.2. Leading Journals, Authors and Papers

(a) Journals

The top ten sources encompass more than half (53.16%) of the scientific production in the researched field, almost a third (29.11%) being published in 'top three' journals (see Table 5). Despite its newness in the WoS database, being quoted with a 5-Year Impact Factor only since 2016, sustainability is in the first place as regards the papers published. It also holds the second position from the perspective of citations (116 citations), surpassed by the Journal of Cleaner Production (202 citations). Moreover, it is worth mentioning that, of the 44 journals, 35 (almost 80%) have only published one document related to this topic, while the other nine journals cover approximately half of the entire papers analyzed. Besides, these journals either concentrate on the accounting research area and public management or focus directly on sustainability-related issues.

Table 5. Top productive journals.

Journals	Category	Papers	H-Index	Citations
Sustainability	Env St	9	6	116
International Journal of Sustainability in Higher Education	Edu	8	4	42
Journal of Cleaner Production	Env Sc	6	5	202
Meditari Accountancy Research	-	5	3	72
Public Money & Management	Publ Adm	5	3	57
Accounting Auditing & Accountability Journal	Bus, Fin	2	2	29
International Journal of Public Sector Management	-	2	2	55
Pacific Accounting Review	-	2	1	6
Sustainability Accounting Management and Policy Journal	Env St/Manag/Bus, Fin	2	2	9
Accounting Forum	Bus, Fin	1	1	5

However, the dynamic of the top journals (see Figure 2) show that internationally recognized generalist journals, such as Sustainability, Journal of Cleaner Production and

Meditari Accountancy Research, recently recorded an upward trend in publications. It reveals that public sector studies have gradually spread worldwide, going beyond specialist journals such as Public Money and Management or International Journal of Public Sector Management. It also highlights the increasing importance of non-financial issues, such as sustainability reporting in the public sector.

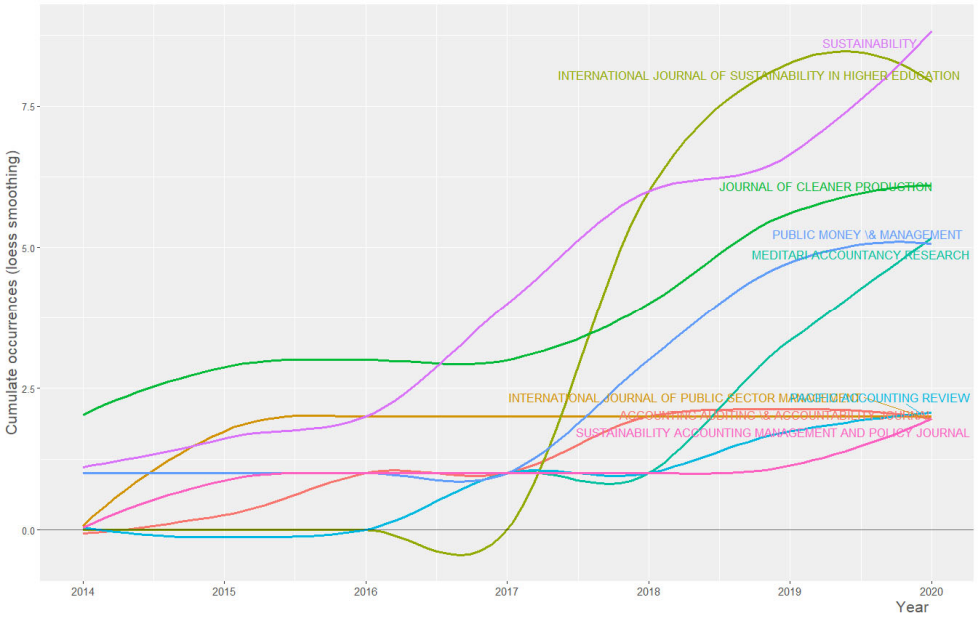

Figure 2. Journal dynamics.

Moreover, the very diverse nature of journals is noteworthy and is interested in publishing papers approaching sustainability reporting in the public sector (see Table 6). An analysis of the WoS categories to which the journals belong, considering that a multidisciplinary journal may appear in more than one category, reveals that the principal one is 'Green and Sustainable Science and Technology', with almost a quarter of papers published. It was expected since this category encompasses journals focused directly on the general topic of sustainability (Sustainability, International Journal of Sustainability in Higher Education, Journal of Cleaner Production, Sustainability Accounting Management and Policy Journal, and Sustainable Development). As for the rest of the WoS categories encountered, there is a relatively balanced distribution among them. It confirms that sustainability reporting in the public sector became a research topic that raised interest in all categories, apart from 'Public Administration'.

Table 6. Most frequent categories of Web of Science (WoS) in the researched topic.

WoS Category	Frequency	%
Green and Sustainable Science and Technology	27	23.89
Business, Finance	18	15.93
Environmental Sciences	16	14.16
Environmental Studies	15	13.27
Public Administration	15	13.27
Management	12	10.63
Education and Educational Research	10	8.85

To identify the influential sources on the sustainability reporting literature in the public realm, we presented the most cited journals within the literature analyzed. As

Table 7 presents, these were mainly from high-quality journals, with the breadth of publishing scholarship in this field being diverse.

Table 7. Most cited journals.

Journals	Category	Citations
Journal of Cleaner Production	Env Sc	303
Accounting Auditing & Accountability Journal	Bus, Fin	126
International Journal of Sustainability in Higher Education	Edu	107
Accounting Forum	Bus, Fin	94
Journal of Business Ethics	Bus, Eth	94
Public Money & Management	Publ Adm	92
Public Management Review	Manag/Publ Adm	84
Journal of Intellectual Capital	Manag/Bus	76
Accounting Organizations & Society	Bus, Fin	69
Meditari Accountancy Research	-	61
Sustainability	Env St	60
Sustainability Accounting Management and Policy Journal	Env St/Manag/Bus, Fin	51

Bus (Business); Bus, Fin (Business, Finance); Edu (Education and Educational Research); Env Sc (Environmental Sciences); Env St (Environmental Studies); Eth (Ethics); Manag (Management); Publ Adm (Public Administration).

The leading cited journal is, by far, the Journal of Cleaner Production, aimed at helping societies become more sustainable. It offers broad coverage of various international trans-disciplinary perspectives on environmental and sustainability research and practice. However, Table 7 also suggests that, besides sources directly focused on sustainability issues included in environmental categories (Sustainability, Sustainability Accounting Management and Policy Journal), journals from various fields of business, finance, management or public administration emerged in the topmost cited sources. It once more highlights the widespread interest in approaching sustainability reporting. Besides, within the top five journals, there are two from educational studies (International Journal of Sustainability in Higher Education), respectively, ethics (Journal of Business Ethics), which reveals the importance of higher education and ethical issues in promoting sustainability reporting in the public sector. Finally, when comparing Table 5 (top journals within the samples analyzed) with Table 7 (most cited sources), we identified eight matches between them, which better underlines their contribution to this research stream.

In conclusion, even though the topic approached is a narrow one, as it focuses on a specific reporting (sustainability) in a particular realm (public sector), there was a strong interest in approaching the subject from journals that are not dedicated to any of these, meaning that sustainability reporting in the public sector became an issue of great importance.

(b) Authors

To analyze the leading scholars that contributed to the sustainability reporting literature in the public sector, we looked into the number of documents published and citations (see Table 8). 172 authors gave their contribution to this field (2.26 authors per paper). Most of the papers (more than 85%) are the product of co-authorship, and almost half of the multi-authored ones (42.42%) are the result of cooperation between scholars from different countries. The highest frequency of collaboration (four papers) was encountered between Italy and Australia. Moreover, it appears that there is a high degree of diversity when it comes to the authors' nationality, as they come from 21 countries.

However, the relevant literature is concentrated in a few countries and among a few authors.

Table 8. Most productive authors.

Author	Papers	Citations	H-Index	Period		Country
Navarro Galera	5	44	1	2014	2017	Spain
Farneti	4	37	3	2014	2019	Italy
Greiling	3	65	2	2014	2015	Austria
Sassen	3	13	2	2018	2019	Germany
An	2	16	2	2017	2020	China
Andrades Pena	2	11	1	2017	2020	Spain
Brusca	2	29	2	2018	2019	Portugal
Ceulemans	2	90	2	2015	2017	Belgium
Davey	2	16	2	2017	2020	New Zeeland
De Villiers	2	28	2	2018	2019	New Zeeland
Dumay	2	7	1	2014	2020	Australia
Grueb	2	29	1	2014	2015	Austria
Guthrie	2	61	2	2017	2019	Australia
Harun	2	16	2	2017	2020	Australia

Thus, most leading scholars are geographically from Europe (e.g., Spain, Austria, Italy, Germany, Portugal, and Belgium) or Oceania (Australia and New Zeeland). The dominant authors that contributed to the sustainability reporting literature in the public sector are Navarro Galera and Farneti (five and four papers, respectively), representing Spain and Italy, countries already recognized for their interest in non-financial reporting [17]. Concerning the author's impact, Farneti remains on top as the single researcher with the highest H-Index, while Ceulemans encountered the highest number of total citations.

Finally, the top authors' production over time (see Figure 3) reflects the breadth, quality and other potential scholars, thus providing insight for future research. It reveals that, even though, in the beginning, there were several occasional interests in this topic, the relevance increased over time. Moreover, the attention to the issue remained constant, especially between 2017 and 2020, thus highlighting their increasingly active role in promoting sustainable reporting in a particular realm, namely the public sector.

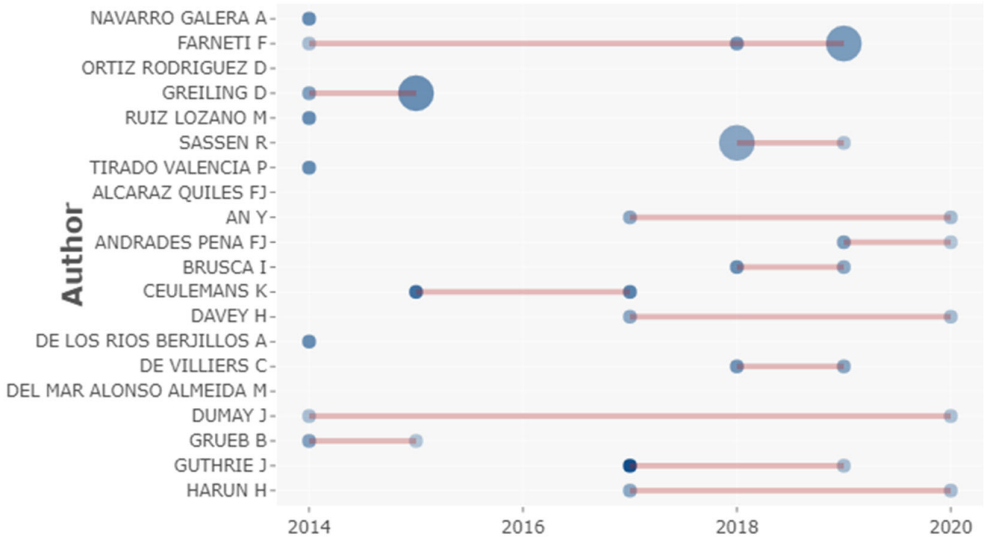

Figure 3. Top authors' production over time.

To sum up, despite the unsteady trend of research in this particular realm, marked in the beginning by several occasional studies, its relevance increased over time due to the widespread interest in approaching this topic, especially in European countries, followed by Australia and New-Zeeland, and the support of various journals from the economic fields, not just from those directly focused on sustainability issues.

(c) Papers

The analysis of the leading papers in the sustainability reporting literature focused on the public sector is based on the number of citations per year (see Table 9), as it reveals the papers' impact, most accurately considering the amount of time to receive quotes [28]. Evidence demonstrates that the most cited article is of Del Mar Alonso-Almeida et al. [30] regarding the diffusion of sustainability reporting in universities dating back to 2015. At the same time, this is the first paper in the 'citations per year' ranking. Within the most cited articles, journals from the top ones are predominant (Tables 5 and 7). Thus, the four most cited papers were published by the Journal of Cleaner Production, which is the most cited and third most productive journal. Even though older articles are often better known and consolidated in the literature, among the top five most cited papers prevails over the newer ones (published in 2017 and 2019). It confirms that there is an emerging research agenda in the public sector approaching sustainability reporting [17].

Table 9. Most cited papers.

Paper	Journal	No. of Citation	
		Total	Yearly
Del Mar Alonso-Almeida (2015) [1,4]	Journal of Cleaner Production *	88	12.57
Guthrie (2017) [2]	Meditari Accountancy Research	58	11.60
Ceulemans (2015) [1,4]	Sustainability *	58	8.28
Domingues (2017) [1]	Journal of Environmental Management *	32	6.40
Yanez (2019) [1,4]	Journal of Cleaner Production *	19	6.33
Veltri (2015) [2,4]	Journal of Intellectual Capital **	42	6.00
Navarro Galera (2014) [1,3]	Journal of Cleaner Production *	44	5.50
Brusca (2018) [1,2,4]	Journal of Cleaner Production *	21	5.25
Alcaraz-Quiles (2015) [1,3]	International Review of Administrative Sciences ***	36	5.14
Greiling (2015) [1]	International Journal of Public Sector Management	36	5.14

[1] sustainability reporting; [2] <IR> reporting; [3] local governments; [4] universities, * Env Sc (Environmental Sciences); Env St (Environmental Studies); ** Manag (Management)/Bus (Business); *** Publ Adm (Public Administration).

Moreover, it can be seen that, although there are numerous specialist journals in the public sector, the most cited papers have mainly been published in sources belonging to the 'environmental sciences/studies' categories, while those published in the 'public administration' journals occupied the last two positions. This phenomenon emphasizes the growing consideration in approaching the subject from journals that are not specialized in a particular realm, meaning that sustainability reporting in the public sector is an issue of great importance.

Finally, highly cited papers were by far dominated by studies covering sustainability and integrated reporting research topics. Most of them focused on a facet of the public sector, mainly higher education and local government.

(d) Top journals, authors and keywords relations

To analyze the connections between the most important scientific fields, we visualize them using Three Field Plots. These allowed us to simultaneously analyze the main items from the selected fields (journals, authors, papers' keywords, cited journals) and to interpret how they are related, based on a Sankey diagram. It depicts the relevant items by differently colored rectangles that are proportional to the value of relations aroused between them [20].

Figure 4 shows the representative scholars in sustainability reporting, the frequently explored areas in the public sector and where they are most published, by visualizing the relations between authors (left side), the paper's keywords (middle side) and journals (right side). The analysis reveals that, besides sustainability reporting, which was by far the most approached, it was the central topic of this study, and the authors also paid attention to specific reports defined by <IR> [5,7,13] or GRI frameworks [8,30–34]. Most of their scientific work was disseminated by top productive sources (Sustainability, International Journal of Sustainability in Higher Education, Journal of Cleaner Production and Meditary Accountancy Research). Moreover, particular issues related to sustainability have also been approached, such as accountability [5,8,15,35] and disclosure [12,13,36], mostly published in public thematic journals (Public Money and Management, International Journal of Public Sector Management, Public Performance and Management Review). Besides, there was a high focus on studying the topic in a particular public sector area, namely higher education, since universities were, by far, frequently approached [8,15,30,31,37–39].

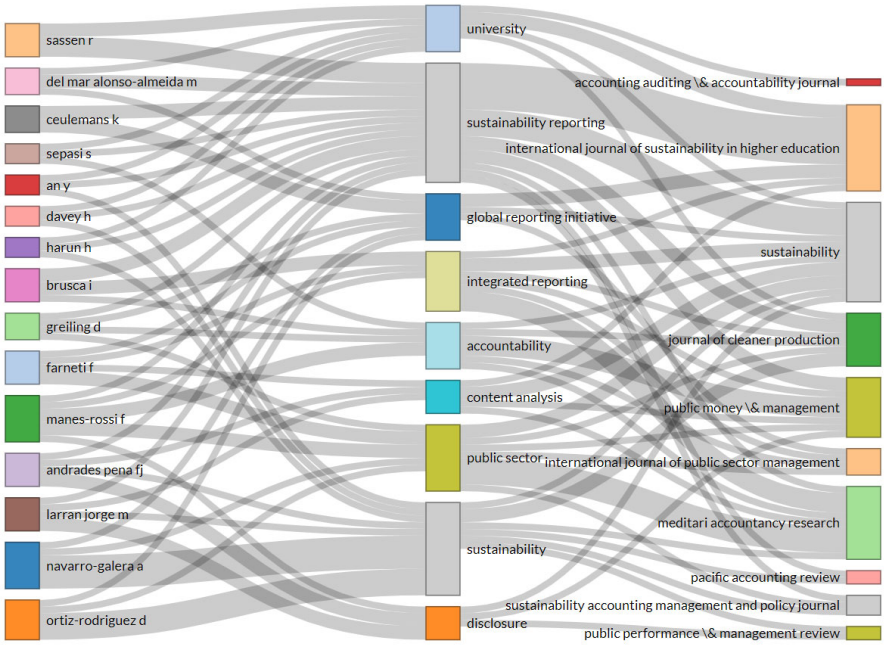

Figure 4. Three field plot: 'authors—keywords—journals' relations.

Besides, we analyzed the structure of top publishing sources (such as journals and cited journals) in developing knowledge on the main topics of sustainability reporting in the public sector. Figure 5 shows the relations between papers' keywords (left side), journals (middle side) and cited journals (right side). This analysis reveals frequent and stronger connections between the publishing and cited journals, some of them belonging to both sides (International Journal of Sustainability in Higher Education, Journal of Cleaner Production, Accounting Auditing and Accountability Journal, Public Money and Management).

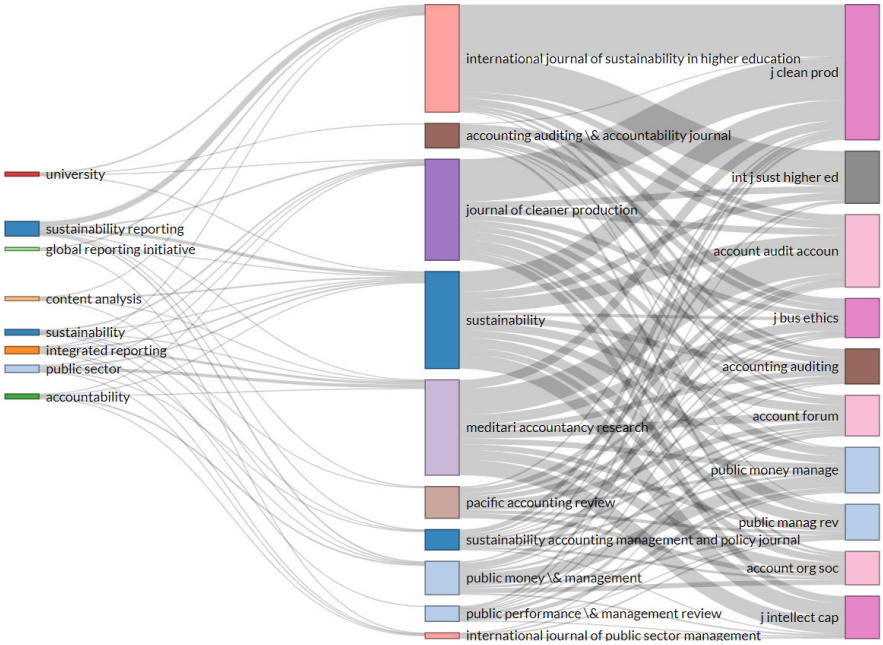

Figure 5. Three field plot: 'keywords—journals—cited journals' relations.

3.3. Network Analysis

We firstly analyzed the most frequently used words and keywords and their dynamics across our timespan, which allowed us to visualize the trend topics thematically related in this field. Afterwards, we deepened our research by clustering the most commonly used keywords. Thus, we analyzed the co-occurrence networks developed, mapped them thematically and visualized the conceptual structure through the topic dendrogram. Finally, we approached the intellectual structure as well, by performing the co-citation analysis, including historiographic parameters.

(a) Words and keywords analysis

"WordCloud" highlights the most common words in the researched literature through their dimension in the image, which represents the magnitude of the recurrence of the same words within the sample papers [4,25]. As Figure 6 shows, the keywords of this bibliometric study are "public sector", "sustainability" and "integrated reporting", located in the map center. Subsequently, words such as "global reporting initiative", "accountability", and "content analysis" were also recurring in most papers.

Figure 6. Word cloud.

To further study the themes addressed in this research field, an analysis of the most frequent words related to the sampled papers was carried out (see Table 10). In line with prior literature [20,23], the authors' keywords, as well as words in the abstracts and titles were considered to be representative terms for the themes studied. The analysis was based on the number of relevant wording occurrences in the papers under consideration. While the key-topics of the publications analyzed were issues related to sustainability reporting in the public sector, the total occurrences of author keywords were much fewer than the number of articles due to the wide variety of reporting formats used by authors. However, at first glance, we can see that, among the frameworks approached, closely related to sustainability reporting, there are both <IR> and GRI, while focus was equally directed towards both universities and local governments. Moreover, it is worth mentioning that the last terms among the top 10 are 'transparency' and 'disclosure', which reveal that studies were trying to shed light on the emerging reporting trend in the public sector, looking for the potential to promote accountability and transparency. Thus, it suggests that the literature responded to the need to acknowledge public organizations' role in advancing non-financial reporting [9].

Table 10. Most frequent words.

Keywords	No.	Words in Abstracts	No.	Words in Titles	No.
sustainability reporting	29	sustainability	309	reporting	55
public sector	16	reporting	269	sustainability	53
integrated reporting	15	public	149	public	24
content analysis	10	study	104	integrated	16
sustainability	10	universities	89	sector	15
accountability	8	local	73	local	14
global reporting initiative	7	social	68	universities	13
university	6	reports	62	analysis	12
local government	5	analysis	53	education	10
transparency, disclosure	5	disclosure	51	transparency, disclosure	8

Based on the bibliometric analysis, a graph relating to the dynamic growth of the keywords most commonly used by the authors was reconstructed (Figure 7), showing the co-occurrence of their frequency per year. We chose the keywords since they are used by authors, editors and publishers to signal important themes in articles [40], and their analysis is focused on small amounts of material in considerable depth [41].

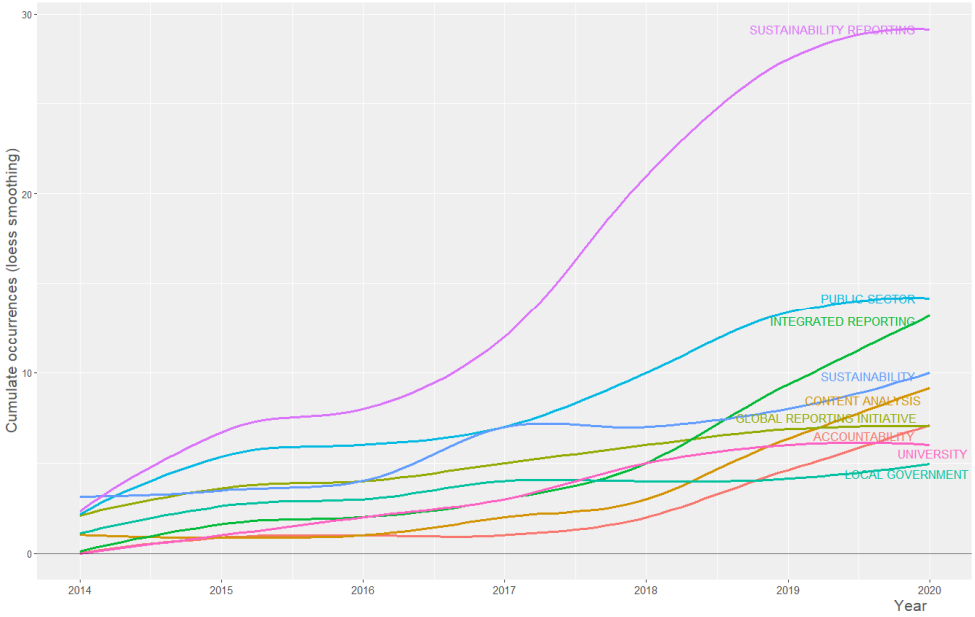

Figure 7. Word dynamics.

It is interesting to note that the term 'sustainability reporting' recorded significant growth in recent years. It is explained by the latest initiatives in this field (e.g., the adoption of the SDGs, the national transposition of the Directive 95/2014/EU) that intensified scholars' interest, too. Moreover, it can be noticed a shift in researchers' interest between GRI and <IR> as a framework for sustainability reporting. Besides, their focus oscillated between local governments and universities as public sector organizations. These results are consistent with prior scholars' doubts regarding the appropriateness of using GRI standards, as the supplement for the public sector does not fulfil the reporting duties, thus recalling the concept of integrated thinking [17]. Besides, they acknowledged the potential of higher education institutions as a "force for change" to stimulate sustainable development and reporting [3].

More insights on how sustainability reporting in the public sector has attracted growing interest and research focus are provided by the evolution of the top-trend topics over the last few years [22]. As it can be seen, the central topic of the sampled papers is sustainability and its related reporting, analyzed along time either generally in the public sector, or particularly in local governments, and more recently, focused on higher education. Figure 8 also highlights the change in the trend of the reporting issues across the period analyzed. However, even though the researchers' approaches of sustainability reporting evolved along with the continuous development of the related voluntary frameworks (e.g., GRI, <IR>), they still leave room for future studies on the first mandatory regulation of non-financial information disclosure (Directive 95/2014/EU).

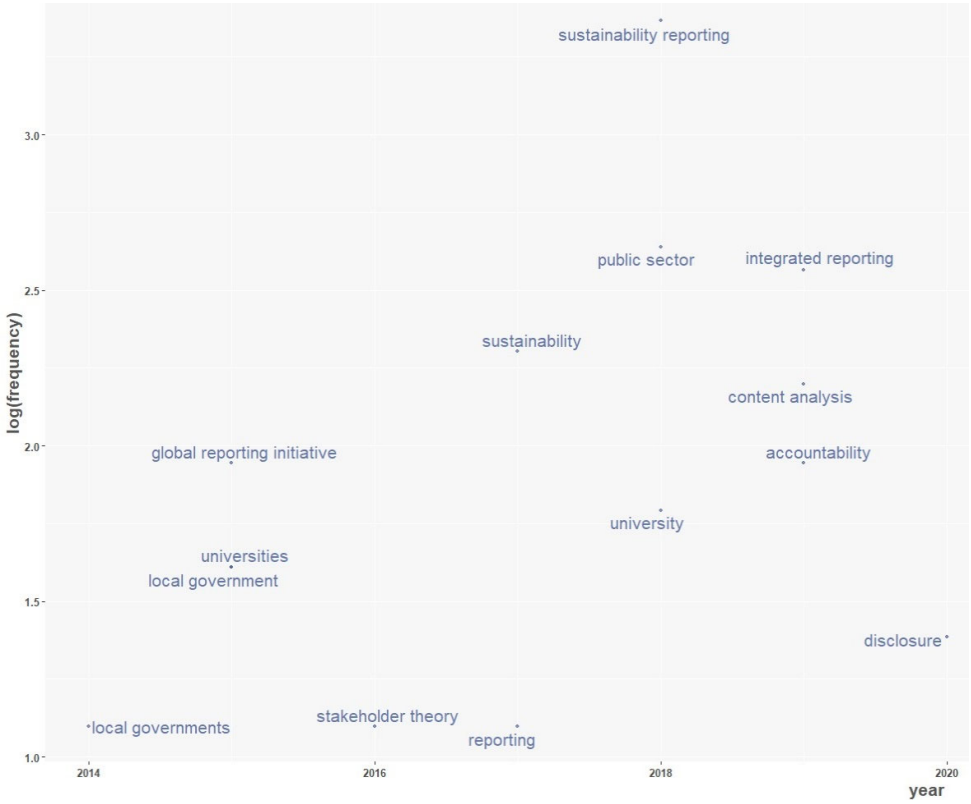

Figure 8. Trend topics.

(b) Co-keywords analysis

To visualize the research hotspots in sustainability reporting literature in the public sector, we employed a co-occurrence network analysis of authors' keywords (see Figure 9). This method was useful to identify the relationships between concepts in a research field, thus observing how the science developed towards specific themes [20,21,23–25].

Figure 9. Keyword co-occurrence network.

The size of the labels in Figure 9 represent their relative importance and correspond to the number of occurrences of the keywords calculated using the degree of centrality measure; thus, the larger ones mean connections to more papers.

The keyword co-occurrence network emphasizes the close interrelations among the topics covered in this review, highlighting how the perspective of 'sustainability reporting' and 'integrated reporting' refers to the general notion of 'sustainability in the public sector' and its related organizations, and vice versa, thus broadening the concept of 'sustainability reporting in the public sector'.

To better observe the relationships between keywords produced by hierarchical clustering, we presented the topic dendrogram, as depicted in Figure 10.

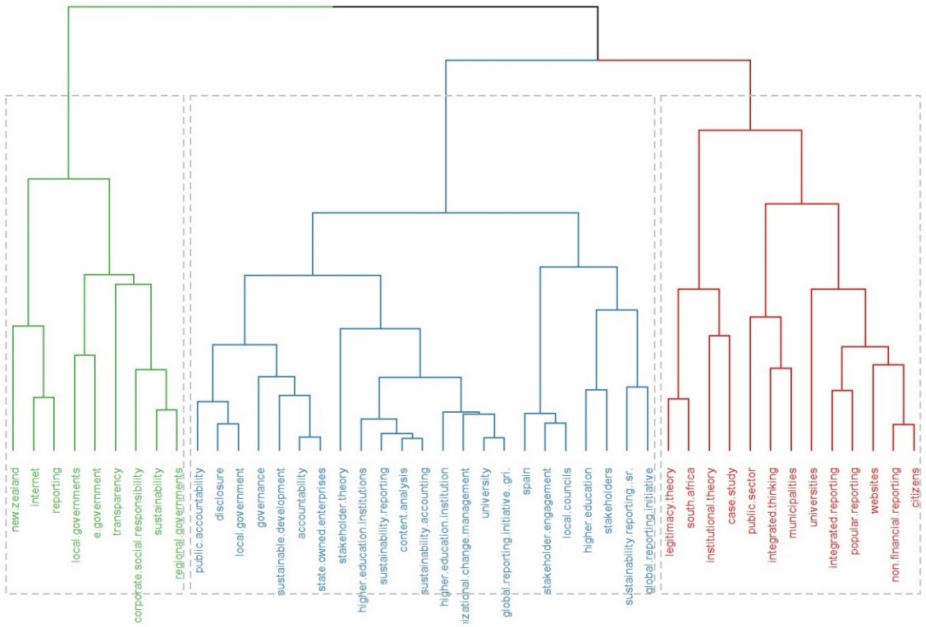

Figure 10. Topic dendrogram.

Topic dendrogram is useful to provide more insights into how themes were assigned to clusters by calculating the height of the various concepts that are connected [4,22]. The diagram shows the three lines of analysis represented by the relevant keywords and themes presented above. It confirms that the flow of literature in the public sector focused on sustainability reporting, mainly following the GRI Standards (first cluster, central), integrated reporting (second cluster, right-sided cluster) and other means of public sector reports (e.g., web-reporting, non-financial reporting) (third cluster, left-sided cluster).

1st cluster—sustainability reporting

This stream of research includes studies focused on the analyzed topic in several organizations of the public sector, such as universities [5,15,31,36,37,42–45], local governments [32,46–49], hospitals [12,50,51] and state-owned enterprises [7,13,52,53], using GRI standards and/or <IR> framework. The heterogeneity of these entities and the reporting guidelines approached suggests how academics have tried to identify contributions to sustainability reporting in the public sector from different perspectives. The widely used GRI framework [15,36,44,54] confirms the relevance of these guidelines in supporting sustainability disclosure of public entities interested in enhancing accountability, despite their generalist approach, maybe "too managerial" [28]. Even though organizational changes might have played a relevant role in the reporting choice [49,55], the absence of mandatory requirements supporting the preparation of

sustainability reports was often noticed [11,56]. It is consistent with previous literature [17], confirming the need that emerges for guidelines and standards specifically developed to cover the distinctive features of public institutions.

2. nd cluster—integrated reporting (<IR>)

Within this research stream, the dominant theme is <IR>, which has gained prominent relevance in the public sector in the latest years, as a new communication tool able to convey financial and non-financial information in a single report [10]. Besides, adopting <IR> seems to improve sustainability reporting [7,53] and support decision-makings [57] by providing a clearer picture of how an organization manages its value-creation process [53]. Even though <IR> has stimulated internal changes and promotes accountability and transparency [57], it still requires integrated thinking [58]. As an alternative accountability mechanism, popular reports gained notoriety in the public sector in recent years [59–61] since these are not only meant to increase the level of transparency and accountability of public sector organizations, but also to help non-accounting experts understand traditional reports [61].

The bulk of the papers within this cluster are focused on universities [5,42,45,61] 2015), thus confirming the theoretical viewpoint [3] stating that <IR> can support higher education institutions to better develop their strategies around the value-creation process.

To shed light on the relevance of <IR> as an emerging reporting trend in the public sector, most scholars conducted in-deep and holistic case studies [7,45,50,53,58] to get insights into the challenges and benefits arising from its adoption. These results are consistent with previous literature [6] since <IR> received the most attention from researchers and public organizations alike, thus being suitable to replace or incorporate sustainability reporting.

3rd cluster—other public sector's reports

It is characterized by the presence of topics typically related to transparency and disclosure, thus approaching various other types of reporting, such as Internet reports [12,32,33,38,46–48], stand-alone sustainability reports [43,54] or popular reports [59–61]. Web-page disclosure has recently become an innovative reporting tool, an instrument of transparency for sustainability information [48], which confirms the lack of specific law requirements supporting the preparation of sustainability reporting [11,56]. This stream of studies mostly focused on various levels of government: central [58], regional [33] and local [32,46–49].

Another relevant contribution within this research direction has been provided by the assessment of the transparency ensured by these types of sustainability reports, specifically through environmental disclosures [11,39,48,62–64] and social disclosures [7,11,48], as well as by testing their potential determinants [11,32,46,48]. The variety of ways used for disclosing sustainability information is consistent with the latest debates on various forms of reporting [35] generated by the absence of explicit guidelines and high institutional pressure. Besides, it confirms the opinion that that the choice of an entity might be the result of trends, rather than the understanding of the actual information needs of stakeholders [61].

Moreover, it is worth mentioning the widespread use of content analysis to explore this area of socio-economic, political and/or cultural dimensions' role played in disclosure. It was also the most used research method within the first cluster, thus following previous literature reviews in the same field [6,17].

Finally, the sustainability reporting in the public sector, regardless of the particular area approached or the choice of a reporting format, was mainly explained through the accountability concept [5,8,35,58,61,65] and specific theories, namely stakeholder [11,37,66], legitimacy [11,12,51,52,62] and institutional theory [12,51]. These results are consistent with prior literature [6,17], concluding that sustainability reporting evolved

under high institutional pressure driven by both the desire to answer stakeholders' demand for greater accountability and transparency, and the willingness to meet their expectations for increasing legitimacy and reputation.

The above co-word analysis method was usually further explored to identify themes within a particular area of research, the relationships between these themes, their degree of centrality to a broader area, and the extent to which they are internally structured [22–24]. Thus, we grouped the most commonly used keywords of the sampled papers by applying a clustering algorithm on the keyword network to highlight different themes, finally displayed in the thematic map (see Figure 11). To emphasize the growth of the theme in the whole field of science and its relevance [22], the scale is proportional to the cumulative input of each keyword, whereas the mapping considers both the importance of the topic in the research field (centrality) and the subject's development (density).

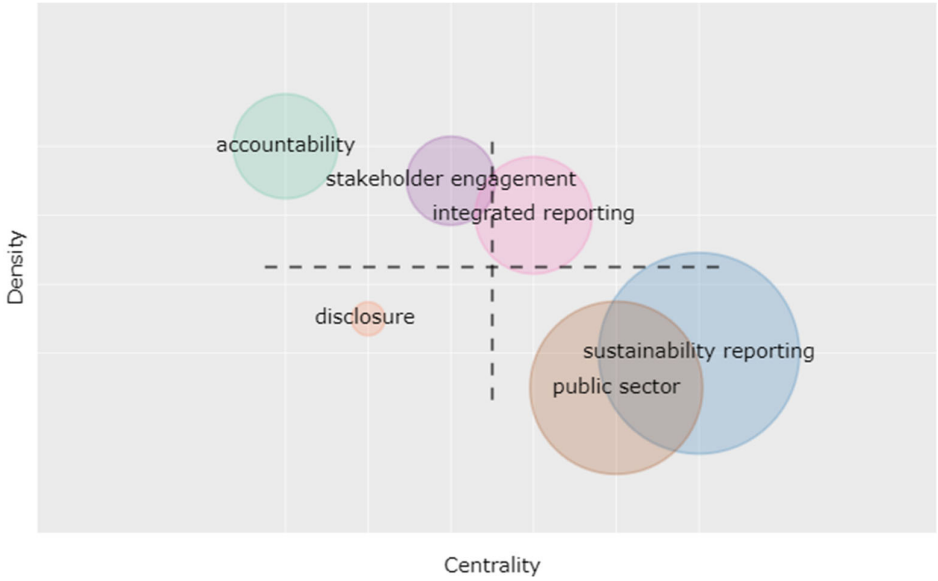

Figure 11. Thematic map.

Therefore, the recurring, transversal themes (lower right quadrant) were, as expected, 'sustainability reporting' and 'public sector', being the most relevant to the knowledge area considered. 'Sustainability reporting' aggregates themes linked to 'global reporting initiative' (7), 'universities' (11) and 'higher education' (8), while the internal composition of 'public sector' mixes diverse themes like those highlighting general issues of 'sustainability' (10) and 'transparency' in reporting (10) together with 'local government' (8). All these transversal themes grouped according to their centrality and density support the first cluster formed emphasizing the main stream of research on sustainability reporting that approached various public entities and focused mostly on GRI standards.

'Integrated reporting' became highly developed within the researched realm and acknowledged as 'motor theme' (upper right quadrant), having strong ties to other concepts in the sustainability research field. It validates the second cluster created since <IR> recently gained noticeable relevance in the public sector as communication tool able to combine both financial and non-financial disclosure in a single report.

As for 'stakeholder engagement' and 'accountability', they were frequently encountered, but usually isolated (upper left quadrant) and aggregate themes linked to 'sustainability accounting' and 'non-financial reporting'. It relates these topics to the analysis of the new Directive 95/2014/EU as a call for stakeholders to implement measures to enhance accountability and increase the transparency of non-financial reporting. Moreover, it is worth mentioning that 'disclosure' is still an emerging theme in

the public sector literature (lower left quadrant) addressing sustainability reporting, mostly linked with the 'state-owned enterprises' theme, that recently had to follow the new Directive's requirements. Accordingly, the isolated, emerging themes (left-sided quadrants) reveal that the non-financial reporting following Directive 95/2014/EU is still in its early stages of implementation, which is why it did not yet gain sufficient relevance to the field studied. By their nature, both isolated and emerging themes seem to support the third cluster characterized by research topics typically related to transparency and disclosure approached through various other types of reporting that confirm the dearth of specific law requirements. In this vein, further studies on the first mandatory regulation of non-financial information disclosure (Directive 95/2014/EU) are encouraged.

Consequently, the conceptual structure analysis suggests a wide variety of sustainability reporting formats encountered in the public sector to meet stakeholders' needs. Besides, their evolution over time confirms that most choices derived from trends rather than a response to the stakeholders' needs [61]. Thus, it encourages the future research avenues already suggested, by digging deeper into the overlaps or inconsistencies among information disclosed throughout various reporting formats [6], promoting an accountability-driven accounting change focused on their relevance, timeliness and usefulness [65], and exceeding their boundaries to reach an integrated thinking culture [17].

(c) Co-citation analysis

The intellectual structure is developed by a historical direct citation network (see Figure 12) that deploys a chronological map of the most relevant scholars' research on this topic and traces its year-by-year historical development, based on various strands of connection. Nodes represented by cited papers and edges underlying direct citations were plotted on an oriented graph according to the publication years, placed on the horizontal axis [22,24].

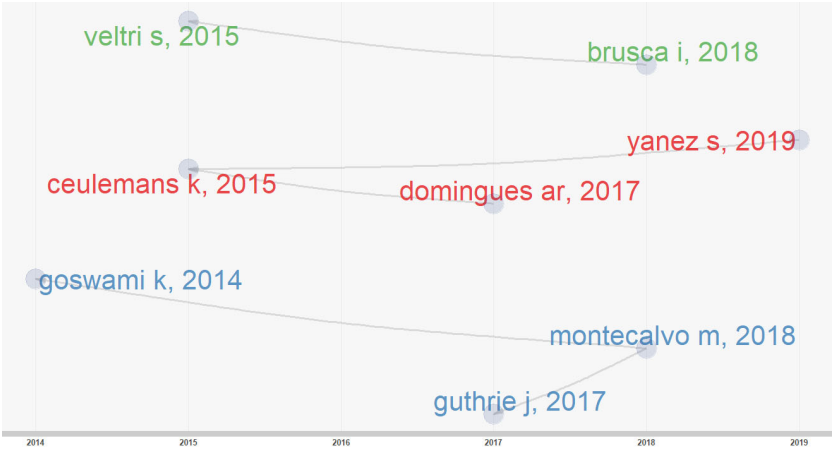

Figure 12. Historical direct citation.

While the papers depicted on the map show sustainability in the public sector topicality according to a different perspective, the mapping relevance goes beyond its visualization. Thus, it highlights not just the authors' names, but rather the topics approached. Therefore, three research pathways emerged that toughened the results of the conceptual structure.

(1) The first path is around the authors [31,55,67]. It was identifiable with the knowledge that traced the main foundations of the 'sustainability reporting' theme that explored the interconnections between the reporting process and organizational change management for sustainability and put the basis of institutional changes in

educational dimensions. Accordingly, the sustainability report is an essential and dynamic tool for the holistic and strategic vision of higher education institutions [31] meant to improve sustainability aspects through global management planning [67].

(2) The second path is around the authors [5,45], who deepen this particular area of the public sector by exploring the development of sustainability reporting. From the analysis of this cluster, it emerges that the principal theme is <IR>, with strong a emphasis on higher education institutions. Even though at first disclosing information on value-creation process aroused difficulties in providing relevant information in a concise, consistent and comparable format [45], <IR> gradually gained well-deserved importance as a managerial and accountability tool in the sustainable development process of the public sector [7,53,57]. However, in particular areas such as education, universities still face managerial challenges as they need to be linked to their strategic objectives [5]. Likewise, in the healthcare context, <IR> is also perceived as a further burden rather than a support to the decision-making process due to the limited capability of shareholders to perceive possible benefits [12,50,51].

(3) Another recurring path, delineated by References [49,53,68], approached sustainability disclosure and transparency as a central topic. From the beginning, the absence of any mandatory requirements may lead to the use of multiple overlapping guidelines based on contemporary sustainability philosophies [49]. Within this debate, scholars approached various core issues represented by environmental, social and/or economic disclosure [6] by various means, including online reporting [33,38,47,48] or popular reports [59–61]. In terms of the frameworks approached, even though GRI standards gained their relevance as appropriate guidelines in supporting the sustainability disclosure of institutions interested in enhancing accountability and transparency [15,36,44,54], <IR> seems to provide more balanced disclosures of material aspects of sustainability [53], thus becoming a key-node of this pathway. Within the same research trend, the latest interest of research in the new non-financial reporting Directive 2014/95 that has a great potential to increase environmental, social and governance disclosures amongst European institutions in the public realm too [55] as there was a strong need for mandatory regulation [11].

4. Conclusions

As the public sector has continuously experienced accountability pressure from stakeholders due to their pivotal role in society, an increasing need for sustainability reporting has also emerged. Scholars investigating all kinds of public entities started to pay increasing attention to sustainability issues, and recently, to the variety of reporting and disclosure tools adopted, as these evolved as well.

In this context, a study to explore the state of the art in sustainability reporting was opportune to address the challenges and pathways of research in the particular realm of public entities. Unlike prior studies that had a similar goal, which either conducted a structured literature review on non-financial reporting formats [17] or were focused exclusively on social and environmental accounting [6], this paper aimed to provide a comprehensive picture of knowledge in sustainability reporting in the public sector.

In this vein, this study presents the scientific landscape based on bibliometric analysis. It provides either descriptive data and trends or conceptual and intellectual structure analysis of the topic studied. Through this approach, we not only filled in the literature gap in the researched field, but we have also reduced the intrinsic subjectivity of narrative or systematic reviews by using bibliometric analysis [24]. It enabled us to perform a transparent and accurate review process based on the statistical measurements (e.g., papers, authors, journals, and citations) and science mapping.

Our contribution to the development of the researched field studied is two-folded. Firstly, by revealing the evolution of the concept of sustainability reporting in the public

sector and presenting the most influential journals, the most prolific authors and the leading papers in this area, we not only identified how the research trends have changed over the years, but we have also opened up possible lines for future research directions. Secondly, mapping the networks on the conceptual and intellectual structure of the field and research community provided valuable insights into the most recurring themes and collaborative processes, thus showing how the topic was developing.

In sum, the descriptive analysis reveals that despite the latest increasing interest in promoting sustainable development and reporting, research in this field that focuses on the particular realm of public institutions is still at an early stage, showing a fluctuating increase. The unsteady trend recalls further work to explore new or in-depth existing research paths. The scientific landscape was mainly shaped by authors from Europe (e.g., Italy and Spain) and Oceania (e.g., Australia and New Zealand). They published their work not only in journals directly focused on sustainability issues but also in other economic fields (business, finance, management or public administration), as well as in educational studies and ethics' categories. It emphasizes the widespread interest in approaching sustainability reporting and highlights the importance of higher education and ethical issues in promoting sustainability reporting in the public sector. The top authors' production over time reveals the breadth, quality, potential and active role in promoting sustainable reporting in the public sector. Even though, in the beginning, there were several occasional interests in this topic, the relevance increased over time. Recently, the attention on the issue remained constant, especially between 2017 and 2020. Besides, considering the affiliations of researchers, Spain and Italy provided the dominant authors that contributed to the sustainability reporting literature in the public sector, countries well-known for their interest in non-financial reporting [17]. These results are consistent with the topmost cited papers, highlighting that the newer ones (published in 2017 and 2019) are dominant, even though older articles should be better known and consolidated in the literature. These studies mainly covered sustainability and integrated reporting as research topics, and most of them focused on a particular facet of the public sector (e.g., higher education and local government). As for the publisher, even though there is a predominance of journals from the top ones, surprisingly, there was a strong interest in approaching the subject from journals that are not dedicated to this particular realm, meaning that sustainability reporting in the public sector became an issue of great importance.

The network analysis provides more interesting and useful insights that open up avenues for future research. Generally, the literature responded well to the need to enhance the understanding of the public institutions' role in advancing non-financial reporting and evolved along with the continuous development of the related voluntary frameworks (e.g., GRI, <IR>). In this assent, further studies approaching the first mandatory regulation of non-financial information disclosure (Directive 95/2014/EU) are encouraged.

The conceptual structure highlights three research directions (clusters), represented by the relevant keywords and themes identified, focusing on 'sustainability reporting' (mainly following the GRI Standards), 'integrated reporting' and 'other means of public sector reports' (e.g., web-reporting and non-financial reporting). Moreover, the thematic map confirms that the first two directions were the most relevant to the knowledge area (known as 'transversal' and 'motor' themes) and encourages future studies on the 'isolated', 'emerging' themes, such as the non-financial reporting under the Directive 95/2014/EU, which did not gain sufficient relevance in the field studied.

The intellectual structure depicts the strands of connection between the most relevant scholars' research on this topic, leading to three research pathways that support and toughen the conceptual structure's outcomes. Thus, the first pathway corresponds to the foundations of the theme of 'sustainability reporting', while the second one highlights its progress towards the principal theme of 'integrated reporting', with strong emphasises on higher education institutions. The other recurring path delineates the

research having 'sustainability disclosure and transparency' as a central theme, encompassing various core issues represented by environmental, social and/or economic disclosed various means, including online reporting or popular reports.

All the results mentioned above have theoretical and practical implications. These are relevant for academics interested in further challenging debates concerning sustainability reporting in the public sector. In this vein, we encourage future research the addresses the quality, usefulness and impact of information disclosed that is able to lead to the development of an appropriate reporting framework for the public realm, as well as in-depth examinations on the drivers of sustainability reporting and how they might influence the setting and accomplishment of goals. Besides, paper's results are also useful for policymakers to better support sustainability initiatives and organizations currently engaged in this process.

Finally, like all research, our study has limitations coming from the search protocol and the analysis performed. Firstly, the sampled documents analyzed were limited to WoS-indexed articles. These selection criteria might have caused us to exclude relevant publications and consequently influenced the results, as the dataset did not include books, chapters and proceeding papers. However, this choice has been previously used and justified as ensuring the highest quality standards for research, greater accuracy and a lower degree of subjectivity [6,20]. Secondly, as we mainly focused on dataset descriptions and trends (e.g., relevant sources, subject areas, authors' data, citations), as well as the conceptual and intellectual structures, there are some aspects of the bibliometric analysis that were not examined, such as the social structure (e.g., collaboration network and world map). However, as the present study aimed to identify the trends in knowledge development in sustainability reporting in the public sector and patterns in its structure, both the sample choose and the extent of bibliometric analysis performed succeeded in accomplishing this objective.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data are available on request.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Rosato, P.F.; Caputo, A.; Valente, D.; Pizzi, S. 2030 Agenda and sustainable business models in tourism: A bibliometric analysis. *Ecol. Indic.* **2021**, *121*, 106978, doi:10.1016/j.ecolind.2020.106978.
2. Brundtland, G.H. *Our Common Future*; Elsevier: Amsterdam, The Netherlands, 1991; pp. 29–31.
3. Adams, C.A. Debate: Integrated reporting and accounting for sustainable development across generations by universities. *Public Money Manag.* **2018**, *38*, 332–334, doi:10.1080/09540962.2018.1477580.
4. Di Vaio, A.; Syriopoulos, T.; Alvino, F.; Palladino, R. "Integrated thinking and reporting" towards sustainable business models: A concise bibliometric analysis. *Meditari Account. Res.* **2020**, doi:10.1108/medar-12-2019-0641.
5. Brusca, I.; Labrador, M.; Larran, M. The challenge of sustainability and integrated reporting at universities: A case study. *J. Clean. Prod.* **2018**, *188*, 347–354, doi:10.1016/j.jclepro.2018.03.292.
6. Fusco, F.; Ricci, P. What is the stock of the situation? A bibliometric analysis on social and environmental accounting research in public sector. *Int. J. Public Sect. Manag.* **2019**, *32*, 21–41, doi:10.1108/ijpsm-05-2017-0134.
7. Farneti, F.; Casonato, F.; Montecalvo, M.; De Villiers, C. The influence of integrated reporting and stakeholder information needs on the disclosure of social information in a state-owned enterprise. *Meditari Account. Res.* **2019**, *27*, 556–579, doi:10.1108/medar-01-2019-0436.
8. Greiling, D.; Traxler, A.A.; Stötzer, S. Sustainability reporting in the Austrian, German and Swiss public sector. *Int. J. Public Sect. Manag.* **2015**, *28*, 404–428, doi:10.1108/ijpsm-04-2015-0064.
9. Kaur, A.; Lodhia, S.K. Sustainability accounting, accountability and reporting in the public sector. *Meditari Account. Res.* **2019**, *27*, 498–504, doi:10.1108/medar-08-2019-510.
10. Argento, D.; Culasso, F.; Truant, E. From Sustainability to Integrated Reporting: The Legitimizing Role of the CSR Manager. *Organ. Environ.* **2018**, *32*, 484–507, doi:10.1177/1086026618769487.

11. Farneti, F.; Guthrie, J.; Canetto, M. Social reports of an Italian provincial government: A longitudinal analysis. *Meditari Account. Res.* **2019**, *27*, 580–612, doi:10.1108/medar-11-2018-0397.
12. Peña, F.J.A.; Jorge, M.L.; Reyes, M.J.M.D.L.; Cejas, M.Y.C. Influential Variables of Sustainability Disclosures by Spanish Public Hospitals. *Public Perform. Manag. Rev.* **2020**, *43*, 1390–1412, doi:10.1080/15309576.2020.1765816.
13. Manes-Rossi, F.; Nicolò, G.; Tudor, A.T.; Zanellato, G. Drivers of integrated reporting by state-owned enterprises in Europe: A longitudinal analysis. *Meditari Account. Res.* **2020**, doi:10.1108/medar-07-2019-0532.
14. Guthrie, J.; Ball, A.; Farneti, F. Advancing Sustainable Management of Public and Not For Profit Organizations. *Public Manag. Rev.* **2010**, *12*, 449–459, doi:10.1080/14719037.2010.496254.
15. Sepasi, S.; Braendle, U.; Rahdari, A.H. Comprehensive sustainability reporting in higher education institutions. *Soc. Responsib. J.* **2019**, *15*, 155–170, doi:10.1108/srj-01-2018-0009.
16. Hassan, S.-U.; Haddawy, P.; Zhu, J. A bibliometric study of the world's research activity in sustainable development and its sub-areas using scientific literature. *Science* **2014**, *99*, 549–579, doi:10.1007/s11192-013-1193-3.
17. Manes-Rossi, F.; Nicolò, G.; Argento, D. Non-financial reporting formats in public sector organizations: A structured literature review. *J. Public Budg. Account. Financ. Manag.* **2020**, *32*, 639–669, doi:10.1108/jpbafm-03-2020-0037.
18. Bartolacci, F.; Caputo, A.; Soverchia, M. Sustainability and financial performance of small and medium sized enterprises: A bibliometric and systematic literature review. *Bus. Strat. Environ.* **2019**, *29*, 1297–1309, doi:10.1002/bse.2434.
19. Pizzi, S.; Caputo, A.; Corvino, A.; Venturelli, A. Management research and the UN sustainable development goals (SDGs): A bibliometric investigation and systematic review. *J. Clean. Prod.* **2020**, *276*, 124033, doi:10.1016/j.jclepro.2020.124033.
20. Janik, A.; Ryszko, A.; Szafraniec, M. Scientific Landscape of Smart and Sustainable Cities Literature: A Bibliometric Analysis. *Sustain.* **2020**, *12*, 779, doi:10.3390/su12030779.
21. Suriyankietkaew, S.; Petison, P. A Retrospective and Foresight: Bibliometric Review of International Research on Strategic Management for Sustainability, 1991–2019. *Sustainability* **2019**, *12*, 91, doi:10.3390/su12010091.
22. Secinaro, S.; Calandra, D.; Petricean, D.; Chmet, F. Social Finance and Banking Research as a Driver for Sustainable Development: A Bibliometric Analysis. *Sustainability* **2020**, *13*, 330, doi:10.3390/su13010330.
23. Nájera-Sánchez, J.J. A Systematic Review of Sustainable Banking through a Co-Word Analysis. *Sustainability* **2019**, *12*, 278, doi:10.3390/su12010278.
24. Della Corte, V.; Del Gaudio, G.; Sepe, F.; Sciarelli, F. Sustainable Tourism in the Open Innovation Realm: A Bibliometric Analysis. *Sustainability* **2019**, *11*, 6114, doi:10.3390/su11216114.
25. Di Vaio, A.; Palladino, R.; Hassan, R.; Alvino, F. Human resources disclosure in the EU Directive 2014/95/EU perspective: A systematic literature review. *J. Clean. Prod.* **2020**, *257*, 120509, doi:10.1016/j.jclepro.2020.120509.
26. Aria, M.; Cuccurullo, C. bibliometrix: An R-tool for comprehensive science mapping analysis. *J. Inf.* **2017**, *11*, 959–975, doi:10.1016/j.joi.2017.08.007.
27. Zupic, I.; Čater, T. Bibliometric methods in management and organization. *Organ. Res. Methods* **2014**, *18*, 429–472, doi:10.1177/1094428114562629.
28. Dumay, J.; Guthrie, J.; Farneti, F. Gri Sustainability Reporting Guidelines for Public and Third Sector Organizations. *Public Manag. Rev.* **2010**, *12*, 531–548, doi:10.1080/14719037.2010.496266.
29. García-Sánchez, I.-M.; Frías-Aceituno, J.-V.; Rodríguez-Domínguez, L. Determinants of corporate social disclosure in Spanish local governments. *J. Clean. Prod.* **2013**, *39*, 60–72, doi:10.1016/j.jclepro.2012.08.037.
30. Alonso-Almeida, M.D.M.; Marimon, F.; Casani, F.; Rodriguez-Pomeda, J. Diffusion of sustainability reporting in universities: Current situation and future perspectives. *J. Clean. Prod.* **2015**, *106*, 144–154, doi:10.1016/j.jclepro.2014.02.008.
31. Ceulemans, K.; Lozano, R.; Alonso-Almeida, M.D.M. Sustainability Reporting in Higher Education: Interconnecting the Reporting Process and Organisational Change Management for Sustainability. *Sustainability* **2015**, *7*, 8881–8903, doi:10.3390/su7078881.
32. Navarro-Galera, A.; Ruiz-Lozano, M.; Tirado-Valencia, P.; Ríos-Berjillos, A.D.L. Promoting Sustainability Transparency in European Local Governments: An Empirical Analysis Based on Administrative Cultures. *Sustainability* **2017**, *9*, 432, doi:10.3390/su9030432.
33. Navarro-Galera, A.; Alcaraz-Quiles, F.J.; Ortiz-Rodríguez, D. Online dissemination of information on sustainability in regional governments. Effects of technological factors. *Gov. Inf. Q.* **2016**, *33*, 53–66, doi:10.1016/j.giq.2015.12.003.
34. Ortiz-Rodríguez, D.; Navarro-Galera, A.; Alcaraz-Quiles, F.J. The Influence of Administrative Culture on Sustainability Transparency in European Local Governments. *Adm. Soc.* **2015**, *50*, 555–594, doi:10.1177/0095399715616838.
35. Manes-Rossi, F. New development: Alternative reporting formats: A panacea for accountability dilemmas? *Public Money Manag.* **2019**, *39*, 528–531, doi:10.1080/09540962.2019.1578540.
36. Jorge, M.L.; Peña, F.J.A.; Madueño, J.H. An analysis of university sustainability reports from the GRI database: An examination of influential variables. *J. Environ. Plan. Manag.* **2018**, *62*, 1019–1044, doi:10.1080/09640568.2018.1457952.
37. Sassen, R.; Dienes, D.; Wedemeier, J. Characteristics of UK higher education institutions that disclose sustainability reports. *Int. J. Sustain. High. Educ.* **2018**, *19*, 1279–1298, doi:10.1108/ijshe-03-2018-0042.
38. An, Y.; Davey, H.; Harun, H.; Jin, Z.; Qiao, X.; Yu, Q. Online sustainability reporting at universities: The case of Hong Kong. *Sustain. Account. Manag. Policy J.* **2019**, *11*, 887–901, doi:10.1108/sampj-06-2018-0161.
39. An, Y.; Davey, H.; Harun, H. Sustainability Reporting at a New Zealand Public University: A Longitudinal Analysis. *Sustain.* **2017**, *9*, 1529, doi:10.3390/su9091529.

40. Lombardi, R.; Secundo, G. The digital transformation of corporate reporting—A systematic literature review and avenues for future research. *Meditari Account. Res.* **2020**, doi:10.1108/medar-04-2020-0870.
41. Silverman, D. *Doing Qualitative Research: A Practical Handbook*; SAGE Publications Ltd: London, UK 2013.
42. Mauro, S.G.; Cinquini, L.; Simonini, E.; Tenucci, A. Moving from Social and Sustainability Reporting to Integrated Reporting: Exploring the Potential of Italian Public-Funded Universities' Reports. *Sustainability* **2020**, *12*, 3172, doi:10.3390/su12083172.
43. Gamage, P.; Sciulli, N. Sustainability Reporting by Australian Universities. *Aust. J. Public Adm.* **2016**, *76*, 187–203, doi:10.1111/1467-8500.12215.
44. Romolini, A.; Fissi, S.; Gori, E. Quality disclosure in sustainability reporting: Evidence from universities. *Transylv. Rev. Adm. Sci.* **2015**, *11*, 196–218.
45. Veltri, S.; Silvestri, A. The Free State University integrated reporting: A critical consideration. *J. Intellect. Cap.* **2015**, *16*, 443–462, doi:10.1108/jic-06-2014-0077.
46. Hossain, M. Sustainability reporting by Australian local government authorities. *Local Gov. Stud.* **2018**, *44*, 577–600, doi:10.1080/03003930.2018.1471397.
47. Galera, A.N.; Berjillos, A.D.L.R.; Lozano, M.R.; Valencia, P.T. Transparency of sustainability information in local governments: English-speaking and Nordic cross-country analysis. *J. Clean. Prod.* **2014**, *64*, 495–504, doi:10.1016/j.jclepro.2013.07.038.
48. Alcarazquiles, F.J.; Navarro-Galera, A.; Ortiz-Rodríguez, D. Factors determining online sustainability reporting by local governments. *Int. Rev. Adm. Sci.* **2014**, *81*, 79–109, doi:10.1177/0020852314541564.
49. Goswami, K.; Lodhia, S. Sustainability disclosure patterns of South Australian local councils: A case study. *Public Money Manag.* **2014**, *34*, 273–280, doi:10.1080/09540962.2014.920200.
50. Cavicchi, C.; Oppi, C.; Vagnoni, E. On the feasibility of integrated reporting in healthcare: A context analysis starting from a management commentary. *J. Manag. Gov.* **2019**, *23*, 345–371, doi:10.1007/s10997-019-09456-2.
51. Marasca, S.; Montanini, L.; D'Andrea, A.; Cerioni, E. The how and why of integrated reporting in a public health care organization: The stakeholders' perspective. *Bus. Strat. Environ.* **2020**, *29*, 1714–1722, doi:10.1002/bse.2463.
52. Nicolo, G.; Zanellato, G.; Manes-Rossi, F.; Tiron-Tudor, A. Corporate reporting metamorphosis: Empirical findings from state-owned enterprises. *Public Money Manag.* **2021**, *41*, 138–147, doi:10.1080/09540962.2020.1719633.
53. Montecalvo, M.; Farneti, F.; De Villiers, C. The potential of integrated reporting to enhance sustainability reporting in the public sector. *Public Money Manag.* **2018**, *38*, 365–374, doi:10.1080/09540962.2018.1477675.
54. Bice, S.; Coates, H. University sustainability reporting: Taking stock of transparency. *Tert. Educ. Manag.* **2015**, *22*, 1–18, doi:10.1080/13583883.2015.1115545.
55. Domingues, A.R.; Lozano, R.; Ceulemans, K.; Ramos, T.B. Sustainability reporting in public sector organisations: Exploring the relation between the reporting process and organisational change management for sustainability. *J. Environ. Manag.* **2017**, *192*, 292–301, doi:10.1016/j.jenvman.2017.01.074.
56. Giacomini, D.; Rocca, L.; Carini, C.; Mazzoleni, M. Overcoming the Barriers to the Diffusion of Sustainability Reporting in Italian LGOs: Better Stick or Carrot? *Sustainability* **2018**, *10*, 131, doi:10.3390/su10010131.
57. Tirado-Valencia, P.; Cordobés-Madueño, M.; Ruiz-Lozano, M.; De Vicente-Lama, M. Integrated thinking in the reporting of public sector enterprises: A proposal of contents. *Meditari Account. Res.* **2019**, *28*, 435–453, doi:10.1108/medar-03-2019-0458.
58. Caruana, J.; Grech, I. Tweaking public sector reporting with integrated reporting (IR) concepts. *Public Money Manag.* **2019**, *39*, 409–417, doi:10.1080/09540962.2019.1583911.
59. Manes-Rossi, F.; Aversano, N.; Polcini, P.T. Popular reporting: Learning from the US experience. *J. Public Budg. Account. Financ. Manag.* **2019**, *32*, 92–113, doi:10.1108/jpbafm-01-2019-0013.
60. Cohen, S.; Karatzimas, S. Tracing the future of reporting in the public sector: Introducing integrated popular reporting. *Int. J. Public Sect. Manag.* **2015**, *28*, 449–460, doi:10.1108/ijpsm-11-2014-0140.
61. Biondi, L.; Bracci, E. Sustainability, Popular and Integrated Reporting in the Public Sector: A Fad and Fashion Perspective. *Sustainability* **2018**, *10*, 3112, doi:10.3390/su10093112.
62. Othman, R.; Nath, N.; Laswad, F. Sustainability Reporting by New Zealand's Local Governments. *Aust. Account. Rev.* **2017**, *27*, 315–328, doi:10.1111/auar.12153.
63. Othman, R.; Laswad, F.; Nath, N. Local councils' environmental sustainability reporting: Who really counts? *Pac. Account. Rev.* **2017**, *29*, 469–489, doi:10.1108/par-11-2016-0108.
64. Moggi, S. Social and environmental reports at universities: A Habermasian view on their evolution. *Account. Forum* **2019**, *43*, 283–326, doi:10.1080/01559982.2019.1579293.
65. La Torre, M.; Sabelfeld, S.; Blomkvist, M.; Dumay, J. Rebuilding trust: Sustainability and non-financial reporting and the European Union regulation. *Meditari Account. Res.* **2020**, *28*, 701–725, doi:10.1108/medar-06-2020-0914.
66. Kaur, A.; Lodhia, S. Stakeholder engagement in sustainability accounting and reporting. *Account. Audit. Account. J.* **2018**, *31*, 338–368, doi:10.1108/aaaj-12-2014-1901.
67. Yáñez, S.; Uruburu, Á.; Moreno, A.; Lumbreras, J. The sustainability report as an essential tool for the holistic and strategic vision of higher education institutions. *J. Clean. Prod.* **2019**, *207*, 57–66, doi:10.1016/j.jclepro.2018.09.171.
68. Guthrie, J.; Manes-Rossi, F.; Orelli, R.L. Integrated reporting and integrated thinking in Italian public sector organisations. *Meditari Account. Res.* **2017**, *25*, 553–573, doi:10.1108/medar-06-2017-0155.