Received: 23 December 2021 | Revised: 7 June 2022 | Accepted: 24 June 2022

DOI: 10.1002/csr.2346

Corporate Social Responsibility and Environmental Management

WILEY

REVIEW ARTICLE

A bibliometric performance analysis of publication productivity in the corporate social responsibility field: Outcomes of SciVal analytics

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Abstract

Corporate social responsibility (CSR) research in academia has been increasing over time, especially in recent years. Thus, the evaluation of relative research productivity is becoming increasingly relevant due to the current importance of this topic. The paper aims to investigate research productivity in the CSR field by performing a bibliometric analysis. An iterative search strategy was used to firstly identify productive CSR authors and then examine their productivity over a 5-year period (2015–2020) using the SciVal tool by Elsevier. Drawing on the results from different bibliometric analyses, the study investigates quantitative and qualitative publication performance at the country (macro), institutional (meso) and individual (micro) levels. This study is the first bibliometric analysis on CSR that is not related to a specific journal and has a multi-level nature by providing the groundwork in determining the knowledge structure of CSR.

KEYWORDS

bibliometric review, CSR studies, individual publication productivity, research productivity, SciVal tool

1 | INTRODUCTION

Corporate Social Responsibility (CSR) research in international business research fields has increased over time, especially in recent years (Fernández-Gago et al., 2020; Yuan et al., 2020; Zhao et al., 2018). In addition, there is a corresponding increase in CSR-related journals (Wu et al., 2021) and a growing number of scholars that deal with the topic. To explore the evolution of such topics and to quantitatively and qualitatively assess global academic productivity in specific areas, bibliometric research is used (Baas et al., 2020; Broadus, 1987; Ellegaard & Wallin, 2015; Pritchard, 1969). Bibliometric research is an important tool for following the development and patterns of various scientific subjects (Martens et al., 2016; Martín-Martín et al., 2018) and for evaluating the relation between the research input and the quantity and quality/impact of the research output (Ebadi & Schiffauerova, 2016; King, 1987). Bibliometric research is stimulated by the improved electronic accessibility of repositories of academic publications through a growing number of databases (e.g., Scopus, Web of Science, Google Scholar or Research Gate) (Li et al., 2010). If we consider bibliometrics applied to the CSR field, a great diversity of variables and topics arise (Danilovic et al., 2015; Meseguer-Sánchez et al., 2021), but they are not without problems (de Bakker et al., 2006). In a "*publish-or-perish atmosphere*" (de Bakker et al., 2006, p. 11), research on productivity is getting ever more important. Such research depends on metrics that measure variables, which are supposed to define *academic excellence* (Cardoso

et al., 2021). According to Aboagy et al. (2021, p. 3284), research academics are evaluated "*by their contribution to knowledge and ideas through research performance*." Therefore, metrics such as publication count, citation rates and impact factor are used as key performance indicators for different purposes such as obtaining research grants, funding or career progression, determining promotion of authors or ranking of research departments and institutions (Campbell et al., 2010; Ebadi & Schiffauerova, 2015b; Ellegaard & Wallin, 2015). For example, citation counts are frequently used "*to support research evaluations and to help compare the relative merits of individual researchers or research groups*" (Thelwall & Kousha, 2017, p. 1125).

Performance analysis in bibliometric studies accounts for the contributions of research constituents, whereas science mapping focuses on the relationships between research constituents and allows for an evaluation of author and institutional productivity (Donthu et al., 2021; Durieux & Gevenois, 2010).

In this scenario, the evaluation of CSR research productivity is becoming increasingly relevant due to the current importance of this topic (Gillan et al., 2021; Martínez-Ferrero & Frías-Aceituno, 2015; Meseguer-Sánchez et al., 2021; Pisani et al., 2017). However, productivity in the CSR field at the country (macro), institutional (meso) and individual (micro) levels has received little academic attention and, thus, represents a research gap that this study aims to fill.

To fully understand CSR research impact by author(s), an all-inclusive analysis is required and should take publications in all peer-reviewed journals into consideration. Therefore, with this study we aimed to investigate the research impact of CSR researchers and to examine the research output of countries and institutions globally. The nature of this investigation was thus exploratory due to the lack of previous research in this area. As a result, we did not test any hypotheses and did not interpret the results by applying any theoretical bases. As far as we know, this study is the first bibliometric analysis on CSR from a micro, meso and macro perspective not related to a specific journal. Indeed, for example, the recent bibliometric reviews in the journal *Business Strategy and the Environment* (Farrukh et al., 2020; Kabongo, 2020; Kumar et al., 2021) described the authors and teams, institutions, countries, context (industry and method) and content (themes) of business strategy and environmental research, included the CSR field. Similar research on the most cited papers and the most prominent countries, universities and authors has been published in *Corporate Social Responsibility and Environmental Management*.

Therefore, our basic motivating question in this research is this: "*What is the research productivity at the macro, meso and micro levels in the CSR field?*"

To achieve our goals, we gathered data from the SciVal tool that is used to conduct a bibliometric analysis, and the array of publications for analysis was obtained from the Scopus database (https://www.scopus.com). Similar to the methodology followed by others (Dobos et al., 2022), we assumed that the data obtained from the SciVal software would allow us to establish the most productive researchers at different levels of analysis. We also made an additional analysis with the help of VOSviewer software.

By answering our research question this study contributes to both academia and practice. For academia, we contribute on the usefulness of bibliometric indicators of the effects of publication activity (Wildgaard et al., 2014). In addition, our paper can help to identify the authors who publish most in a given area and promote new collaborations or affect the network of already established collaborations between co-authors. For practice, a proliferation of ideas is now being presented by the academic community on CSR, and since managers and practitioners need access to reliable scientific evidence to make informed decisions, our paper can give them an overview of research productivity.

In addition, our paper can incentivize both sides to collaborate in order to reduce research–practice gaps (Podgorodnichenko et al., 2021).

The reminder of the paper is structured as follows. We first explain the materials and methodology used for this particular study and then present the results of bibliometric analysis. We conclude with a summary of key takeaways and discuss the implications of the results, also proposing some lines for future research.

2 | MATERIALS AND METHODS

To conduct bibliometric performance analysis, we followed the logical scheme proposed by Donthu et al. (2021). In this scheme, authors provide the steps for conducting bibliometric analysis along with the general guidelines to be followed. As shown in Figure 1, our study starts with the definition of the aim and scope of the bibliometric analysis, defining the borders of our topic research. We then explain the choice of specific techniques to better meet the aim and the scope of our analysis, followed by an explanation of the data gathered to perform the bibliometric analysis. The quantitative analysis itself provides critical insights from the analyzed data.

2.1 | Step 1: Definition of the aims and scope of the bibliometric study

We chose to conduct the bibliometric analysis at three different degrees, by distinguishing productivity, citations and collaboration at

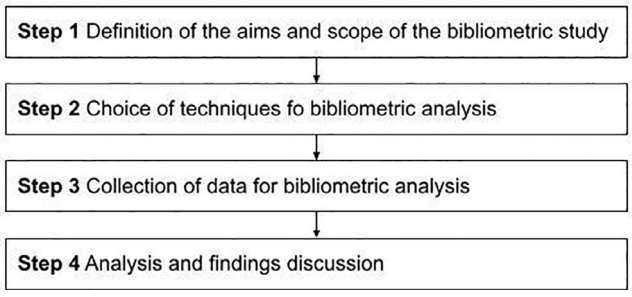

FIGURE 1 Steps of analysis

the macro, meso and micro levels. At the macro level, we analyze the way in which publications and citations are distributed among different countries, in order to understand where CSR became a hot topic. We therefore go into depth on the meso level, analyzing which institutions are more specialized on CSR studies. Finally, we focus on the individual level by analyzing authors who contribute the most to the field.

2.2 | Step 2: Choice of techniques for bibliometric analysis

The key procedures commonly implemented in bibliometric studies are a performance analysis (Peters & van Raan, 1991; White & McCain, 1998) and so-called science mapping (Börner et al., 2003; Noyons et al., 1999). In our study we decided to conduct a performance analysis that aims at evaluating the productivity and the popularity of the different actors on the basis of bibliographic data (Aria et al., 2020).

2.3 | Step 3: Collection of data for bibliometric analysis

The main issues of this step consist of selecting the database suitable for the research aims and fetching the data. To identify productive CSR authors, we used a systematic search of "SciVal" (Elsevier). The major advantage that SciVal has over other metrics and reporting tools is the sheer amount of available data (Dresbeck, 2015). SciVal is a database with a set of independent modules. It comprises three independent units: *overview*, which provides a layout of the research performance of the organization according to parameters such as outcomes, collaboration and impact in a field; *benchmarking*, which compares organizations based on their achievement metrics, highlighting the weaknesses and strengths of such establishments; and *collaboration analysis*, which identifies and scrutinizes ongoing, probable and suitable collaboration opportunities. For capturing all types of scientific papers on the subject, we established a 2015–2021 time frame. This interval was dictated by the most recent time frame available within the SciVal tool when the analysis was performed. The publications are clustered into topics, such as "Topic Cluster TC.56—Corporate Social Responsibility; Corporate Governance; Firms" (*Data retrieval: May 24, 2021*),[1] based upon a direct citation analysis. Topic clusters are formed by aggregating topics with similar research interests to form a broader, higher-level area of research. These topic clusters can be used to get a broader understanding of the research being done by a country, institution (or group) or researcher (or group), before drilling into more granular topics (Tu et al., 2021). As noted by Zanotto and Carvalho (2021), topics are clustered within SciVal based upon direct citation analysis using document reference lists (a document can belong to only one topic), and as newly published documents are indexed, they are added to topics using their reference lists. Thus, this makes topics dynamic, and most topic areas will increase in size over time (Zanotto & Carvalho, 2021).

[1]This topic cluster is made up of 134 topics.

TABLE 1 Overview of the performance parameters

Indicator	Measured entity characteristic	Definition
Scholarly output	Productivity	The number of indexed in Scopus publications
Field-weighted citation impact	Scientific impact	The number of citations received by an entity's publications compared with the average number of citations received by all other similar publications in the data universe
Citations	Scientific impact	The number of citations received by an entity's publications
Citations per publication	Scientific impact	The average citation impact of the publications as the number of an average received citations
Publications in top journal percentiles (top 10% by CiteScore percentile)	Scientific impact	The number of publications are in the top 1, 5, 10 or 25% of the most-cited journals indexed by Scopus
Academic–corporate collaboration (%)	The degree of collaboration between academic and corporate affiliations	Proportion of co-authored publications across the academic and corporate, or industrial sectors
International collaboration (%)	The degree of collaboration between international coauthors	Proportion of internationally co-authored publications

2.4 | Step 4: Analysis and findings discussion

Myriad measures for performance analysis exist. Approximately, 100 numerical parameters have been proposed in the past two decades (Zanotto & Carvalho, 2021) that compute the number of publications and citation parameters (Waltman, 2016; Wildgaard et al., 2014).

The majority of SciVal's metrics can be classified within six groups (SciVal Research Metrics Guidebook, 2018), and a metric may be part of more than one group:

- Productivity metrics give information on the volume of output of an entity
- Citation impact metrics indicate the influence of an entity's output, as indicated by various types of citation counts;
- Collaboration metrics provide information on the research partnerships of an entity;
- Disciplinarily metrics give information on the spread of topics within an entity's publications
- Snowball metrics are defined and endorsed by research-intensive universities as providing important insight into institutional strategies; and
- "Power metrics" are those whose value tends to increase as the size of an entity.

TABLE 2 Publications by year

YEAR	No. publications
2021	4415
2020	11,718
2019	10,417
2018	9365
2017	7924
2016	6775
2015	6414

In line with our scope, the identification of productivity (and scientific impact) was based on the most used parameters (Avanesova & Shamliyan, 2018; Craig et al., 2021; Purkayastha et al., 2019), listed in

FIGURE 2 Geographic distribution of scholarly output by country

FIGURE 3 Geographic distribution of scholarly output by institutions in US and Europe [Colour figure can be viewed at wileyonlinelibrary.com]

TABLE 3 Top 25 countries by scientific impact indicators

Citation count		Citations per publication		Field-weighted citation impact		Publications in top 10% journal percentiles by CiteScore percentile (%)	
United States	293.313	Hong Kong	25.1	Libyan Arab J.	2.4	Singapore	43.8
United Kingdom	104.576	Singapore	22.1	Georgia	1.99	Netherlands	43.1
Australia	69.586	Switzerland	18.7	Denmark	1.93	Switzerland	42
Canada	54.912	Canada	18.4	Hong Kong	1.73	Hong Kong	41
China	51.982	Netherlands	18.1	Singapore	1.73	Georgia	38.9
Spain	44.095	United States	16.6	Netherlands	1.68	Costa Rica	37.5
Italy	35.914	Belgium	16.1	Switzerland	1.67	Canada	36.3
Germany	34.684	United Kingdom	14.6	Lebanon	1.63	Denmark	34.2
Hong Kong	32.771	Australia	13.9	United Kingdom	1.6	United States	34.1
Netherlands	25.965	Denmark	13.8	Italy	1.6	United Kingdom	33.4
France	24.910	Lebanon	13.8	Canada	1.55	Belgium	31.9
South Korea	18.423	Spain	13.7	Pakistan	1.52	Iceland	31.6
Malaysia	16.605	Mauritius	13.3	Yemen	1.43	Austria	31.1
New Zealand	15.859	New Zealand	13.2	Uganda	1.43	Luxembourg	31.1
Taiwan	15.338	Austria	12.8	Norway	1.42	Finland	30.5
Singapore	14.985	Finland	12.7	Belgium	1.41	Italy	30.3
Switzerland	12.616	Norway	12.6	Australia	1.4	Sweden	30.2
India	11.658	Sweden	12.6	New Zealand	1.38	Norway	30.1
Sweden	10.470	Italy	12.3	Austria	1.38	France	29.8
Portugal	10.380	Germany	12.2	Egypt	1.38	Cyprus	28.6
Belgium	10.010	France	12	Sweden	1.36	Israel	28.2
Finland	8.997	Luxembourg	12	United States	1.35	Ireland	27.2
Brazil	8.552	Greece	12	France	1.35	Spain	27
Denmark	8.184	Macao	11.5	Spain	1.33	Germany	26.3
Greece	7.476	Cyprus	11	Cyprus	1.33	Australia	24.7

Table 1. The analyses are developed through the use of Microsoft Excel and VOSviewer software (Van Eck & Waltman, 2010).

3 | RESULTS

From 2015 to 2021, a total of 57,028 research papers were produced in the field of CSR (Table 2), with a citation count of 306,910 total citations received by publications of the selected entities and 13,658 collaborations that extend to international, national and institutional co-authorship.

Looking at the geographic distribution of scholarly output (Figure 2), with more than 17,000 publications, the United States is the most productive country, accounting for 19% of total publications.

Scientific productivity is highly concentrated in the US, but researchers in China and the UK have also published an increasing

TABLE 4 Top 15 institutions by scientific impact indicators

Institution	Country/region	Citation count
Harvard University	United States	12,673
National Bureau of Economic Research	United States	12,217
University of Pennsylvania	United States	10,905
Indiana University Bloomington	United States	10,189
City University of Hong Kong	Hong Kong	9845
University of New South Wales	Australia	8578
Chinese University of Hong Kong	Hong Kong	8443
University of Washington	United States	8069
University of Michigan, Ann Arbor	United States	7795
University of Southern California	United States	7754
Pennsylvania State University	United States	7661
Hong Kong Polytechnic University	Hong Kong	7591
University of Toronto	Canada	7399
University of Georgia	United States	7380
New York University	United States	6616
Institution	**Country/region**	**Citations per publication**
National Bureau of Economic Research	United States	53.6
Indiana University Bloomington	United States	39.2
University of Southern California	United States	38.4
Harvard University	United States	37.7
University of Pennsylvania	United States	37
Chinese University of Hong Kong	Hong Kong	36.7
University of Washington	United States	35.2
University of Michigan, Ann Arbor	United States	34.6
City University of Hong Kong	Hong Kong	32.1
University of Georgia	United States	31.8
Nanyang Technological University	Singapore	30.2
Stanford University	United States	29.8
University of Texas at Dallas	United States	29.8
University of South Carolina	United States	29.1
Boston College	United States	28.3
Institution	**Country/region**	**Field-weighted citation impact**
National Bureau of Economic Research	United States	3.36
Indiana University Bloomington	United States	2.67
Harvard University	United States	2.6
University of Southern California	United States	2.6
University of Washington	United States	2.52
Stanford University	United States	2.51
University of Pennsylvania	United States	2.46
Copenhagen Business School	Denmark	2.42
University of Michigan, Ann Arbor	United States	2.38
Boston College	United States	2.37
City, University of London	United Kingdom	2.24
University of Georgia	United States	2.17
The London School of Economics and Political Science	United Kingdom	2.16
York University Toronto	Canada	2.1
Chinese University of Hong Kong	Hong Kong	2.08
Institution	**Country/region**	**Top 10% journal percentiles by CiteScore percentile (%)**
National Bureau of Economic Research	United States	75.5
University of Southern California	United States	63.9
University of Pennsylvania	United States	63.4
Harvard University	United States	61.3
University of Texas at Dallas	United States	61
University of Washington	United States	59.7
University of Texas at Austin	United States	59.4
Boston College	United States	57.7
Stanford University	United States	57.6
Arizona State University	United States	56.4
University of Michigan, Ann Arbor	United States	55.8
Indiana University Bloomington	United States	54.9
University of Toronto	Canada	53.5
University of Illinois at Urbana-Champaign	United States	52.8
New York University	United States	51.2

(Continues)

number of works in the field during the last decade. Focusing on the scholarly output by institutions in US, the state of Texas includes the highest number of universities with credited works published in

TABLE 5 Top 15 countries by collaboration indicators

Ranking	International collaboration (%)		Academic-corporate collaboration (%)	
1	Yemen	91.2	Costa Rica	10
2	Libyan Arab J.	87.2	Brunei	5
3	Georgia	81	Malta	3.8
4	Singapore	79.2	Bulgaria	3.5
5	Uruguay	77.8	Germany	2.7
6	Hong Kong	77.4	Netherlands	2.7
7	Macao	76.8	Finland	2.7
8	Cuba	76.5	Turkey	2.3
9	Luxembourg	72	Chile	2.2
10	Azerbaijan	70	Croatia	2.2
11	Brunei D.	70	Tanzania	2.2
12	Costa Rica	70	France	2
13	Venezuela	69	Luxembourg	2
14	Qatar	64.7	Switzerland	1.9
15	Belgium	64.4	Serbia	1.7

the CSR field, including four academic institutions (Figure 3). In Europe, the UK shows the highest scholarly output on CSR topics, accounting for 68% of the European universities conducting studies in this domain. Attention on CSR issues can be seen particularly by renowned institutions such as the University of Cambridge, University of Oxford, Cardiff University, and University of London (Figure 2). Holland and Italy follow in the ranking, although at a certain distance.

Going into depth on the performance analysis, it emerges that countries with higher productivity and greater citation counts do not hold the same positions in terms of citations per publication and field-weighted citation impact. Comparisons of the ranking of the three selected metrics from SciVal show that other countries stand out in these respects. In particular, among the five top countries in both indicators, only Canada shows both quantitative and qualitative performance of their research activity in the CSR field. Academics from regions and countries such as Hong Kong, Singapore, Switzerland, the Netherlands, Libya, Georgia and Denmark can be considered influential on the topic, even with small productivity. This result is confirmed by the number of publications on the topic published in the top journal (Table 3).

TABLE 6 Top 15 institutions by collaboration indicators

Ranking	Institution	Country	International collaboration (%)	Institution	Country	Academic-corporate collaboration (%)
1	Singapore Management University	Singapore	83.6	Erasmus University Rotterdam	Netherlands	4.3
2	Nanyang Technological University	Singapore	82.2	University of Pennsylvania	United States	3.1
3	Chinese University of Hong Kong	Hong Kong	82.2	Sun Yat-Sen University	China	2.4
4	City University of Hong Kong	Hong Kong	76.5	University of Washington	United States	2.2
5	University of Toronto	Canada	70.2	Tilburg University	Netherlands	2.1
6	Hong Kong Polytechnic University	Hong Kong	68.2	University of Southampton	United Kingdom	2.1
7	The University of Auckland	New Zealand	64.4	Korea University	South Korea	2
8	Erasmus University Rotterdam	Netherlands	63.9	University of Technology Sydney	Australia	2
9	Tilburg University	Netherlands	63.9	University of Birmingham	United Kingdom	1.8
10	York University Toronto	Canada	62.6	National Bureau of Economic Research	United States	1.8
11	Shanghai University of Finance and Economics	China	60.8	University of Sydney	Australia	1.8
12	University of Southampton	United Kingdom	59.5	University of Michigan, Ann Arbor	United States	1.8
13	University of Groningen	Netherlands	59.5	Harvard University	United States	1.8
14	Lancaster University	United Kingdom	59.1	University of New South Wales	Australia	1.7
15	University of Melbourne	Australia	58.9	New York University	United States	1.7

However, as noted by some authors, research takes place in a work environment (Aboagye et al., 2021) that may limit or stimulate the development of knowledge. Usually, the academic affiliations facilitate initiatives and opportunities, establishing contacts between colleagues (Paci et al., 2021). Therefore, it is important to also measure the productivity of institutions.

At the meso level, we have taken a look at institutional performance, by using the same metrics. It is not surprising that US institutions cover the first places in terms of citation counts. Academics from Harvard University, the National Bureau of Economic Research, the University of Pennsylvania and Indiana University Bloomington are the most productive in terms of quantity and quality. However, it is worth noting that despite US universities being the most productive, other institutions appear to be more influential on CSR scientific productivity. With regard to the field-weighted citation impact, researchers from Stanford University and the Copenhagen Business School provide a strong contribution to the research area. Concerning the top 10% percentile score, researchers from the US government's National Bureau of Economic Research account also for the superior editorial collocation of scientific publications (Table 4).

With regards to international openness, it appears that people who come from less developed countries are more prone to collaborate with foreign co-authors. Academic–corporate collaboration is also very frequent for academics from Germany, the Netherlands, and Finland (Table 5).

Looking in detail at the meso level, it appears that the institutions with higher rates of international collaboration are those based in Singapore and Hong Kong. Comparing these results with the analysis at the macro level shows slightly different rankings, because

TABLE 7 Overview of top 20 researchers by scholarly output

Author	Affiliation	Country/ region	Scholarly output	Citation count	Field-weighted citation impact	Citations per publication	Publ. In top 10% journal perc. By CiteScore perc. (%)
García-Sánchez, Isabel María	Universidad de Salamanca	Spain	76	2616	3.35	34.4	63.5
Hussainey, Khaled	University of Portsmouth	United Kingdom	74	1553	1.78	21	2.9
Dumay, John	Unknown institution	—	73	3505	6.48	48	61.4
Habib, Ahsan	Massey University	New Zealand	72	1002	1.45	13.9	6
Salehi, Mahdi	Ferdowsi University of Mashhad	Iran	69	232	0.74	3.4	1.7
Lobo, Gerald J.	University of Houston	United States	62	1420	1.6	22.9	49.2
Ntim, Collins G.	University of Southampton	United Kingdom	59	1768	4	30	32.8
Hasan, Iftekhar	University of Sydney	Australia	58	1182	1.54	20.4	19.6
Jiraporn, Pornsit	Pennsylvania State University	United States	53	994	1.12	18.8	5.9
Jabbour, Charbel Josè; Chiappetta	Université de Montpellier	France	50	2087	3.35	41.7	42.9
Lima Rodrigues, Lúcia	University of Minho	Portugal	50	595	1.15	11.9	30
Renneboog, Luc D.R.	Tilburg University	Netherlands	48	1129	2.05	23.5	37.5
Boiral, Olivier	Université Laval	Canada	48	2494	3.8	52	80.9
Kim, Jeong Bon	City University of Hong Kong	Hong Kong	47	2424	2.66	51.6	27.7
Zattoni, Alessandro	LUISS	Italy	47	1012	5.1	21.5	87.5
Chan, Kam C.	Western Kentucky University	United States	47	657	1.53	14	12.8
Villiers, Charl De	University of Pretoria	South Africa	46	2196	4.34	47.7	36.6
Vasarhelyi, Miklos Antal	The State University of New Jersey	United States	45	1109	5.29	24.6	34.1
Farooq, Omar	ADA University	Azerbaijan	45	167	0.4	3.7	4.7
Schaltegger, Stefan C.	Leuphana University of Lüneburg	Germany	44	1699	3.9	38.6	62.9

academics from the less developed world who used to work in foreign institutions present a higher inclination to collaborate. In contrast, international collaboration fits at both the macro and meso levels because it is more evident in the Near East countries (Yemen) and in institutions located in Asia (Singapore, Hong Kong) (Table 6).

A list of the 20 highest-impact authors within the study period is shown in Table 7. Authors are arranged in descending order based on their total impact (Gauffriau et al., 2008). The order of authors' productivity clearly changes based on the metric used to quantify productivity; thus the most productive author—the Spaniard Garcia-Sanchez—is not the most cited.

Going into depth on individual metrics, a list of the highest-impact authors within the period in different geographic locations, namely Europe and the US, is presented in Table 8.

In Europe, Unerman Jeffrey from Lancaster University (UK) has the highest citation count in the topic (1179), with the highest field-

TABLE 8 Top 5 European and US researchers by scientific impact indicators

EUROPE				*UNITED STATES*		
Author	**Affiliation**	**Country/ region**	**Citation count**	**Author**	**Affiliation**	**Citation count**
Unerman, J.	Lancaster University	UK	1179	Dhaliwal, D. S.	University of Arizona	3032
Bebbington, J.	Lancaster University	UK	724	Guedhami, O.	University of South Carolina	2500
Aguilera, R. V.	Ramon Llull University	Spain	1093	Serafeim, G.	Harvard University	2499
Zattoni, A.	LUISS	Italy	1012	Jo, H.	Santa Clara University	2288
Aragon-Correa, J. A.	University of Granada	Spain	632	Agus Harjoto, M.	Pepperdine University	1824
Author	**Affiliation**	**Country/ region**	**Citations per publication**	**Author**	**Affiliation**	**Citations per publication**
Edmans, A.	London Business School	UK	107.3	Serafeim, G.	Harvard University	138.8
Paillé, P.	NEOMA Business School	France	68.5	Dhaliwal, D. S.	University of Arizona	108.3
Michelon, G.	University of Bristol	UK	64	Graham, J. R.	Duke University	92.6
Unerman, J.	Lancaster University	UK	62.1	Jo, H.	Santa Clara University	88
Aguilera, R. V.	Ramon Llull University	Spain	52	DeFond, M. L.	University of Southern California	87.5
Author	**Affiliation**	**Country/ region**	**Field-weighted citation impact**	**Author**	**Affiliation**	**Field-weighted citation impact**
Unerman, J.	Lancaster University	UK	8.02	Kumar, P.	University of Houston	6.11
Bebbington, J.	Lancaster University	UK	6.72	Serafeim, G.	Harvard University	6.05
Aguilera, R. V.	Ramon Llull University	Spain	5.74	Vasarhelyi, M. A.	Rutgers - The State University of NJ	5.29
Zattoni, A.	LUISS	Italy	5.1	Graham, J. R.	Duke University	4.76
Aragon-Correa, J. A.	University of Granada	Spain	4.86	DeFond, M. L.	University of Southern California	4.64
Author	**Affiliation**	**Country/ region**	**Publications in top 10% journal (%)**	**Author**	**Affiliation**	**Publications in top 10% journal (%)**
Edmans, A.	London Business School	UK	88.9	Boivie, S.	Texas A&M University	100
Zattoni, A.	LUISS	Italy	87.5	Krause, R.A.	Texas Christian University	100
Busch, T.	University of Hamburg	Germany	87.5	Kumar, P.	University of Houston	94.4
Scholtens, B.	University of St Andrews	UK	85	van Essen, M. V.	University of South Carolina	93.3
Gond, J.P.	City, University of London	UK	84.2	Phillips, G. M.	Dartmouth College	85.7

weighted citation impact (8.02), even if his research was not published in a top-10% journal, where Alex Edmans from the London Business School (UK) excel (88.9%). Of note, this scholar also surpassed Unerman in the citations per publication (respectively, 107.3 and 62.1). In the US, different scholars stand out depending on the considered criterion. In particular, Dan S. Dhaliwal from the University of Arizona had the highest citation count in the topic (3032); George Serafeim from Harvard University had the greatest number of citations per publication (138.8); and Praveen Kumar from the University of Houston had the highest field-weighted citation impact (6.11). Finally, the studies of Steve Boivie from Texas A&M University and those of Ryan Krause from Texas Christian University were published in top-10% journals (100%).

With regards to international openness, American and Asian scholars demonstrate a full willingness to collaborate with foreign co-authors. Table 9 shows the researchers with the highest scores (100%), such as Pittman (Canada), Fung (US), Lim (Singapore), Chintrakarn (Thailand) and Tsang (Hong Kong). The scenario changes in relation to the academic–corporate collaboration. In this case, in fact, European scholars stand out. We are referring to Kärri (Finland) (25%), Cricelli (Italy) (18.8%), Crifo (France) (17.6%), and Grimaldi (Italy) (15.8%), as Table 9 shows.

The researchers who are more inclined to international collaboration do not always correspond with the most productive in terms of output or citations. We focus in depth on collaboration activities of the 20 most cited authors using VOSviewer (http://www.vosviewer.com), that allows us to analyze bibliometric networks (Van Eck & Waltman, 2010). On this basis, the first analysis performed was the co-authorship analysis, by inserting the SCOPUS file of publications of the top 20 authors selected by using a ORCID code over the same time span as the Scival research. The minimum number of countries per documents considered is 5. Of the 35 countries, 17 meet the threshold. Items are then grouped into clusters. A cluster is a set of items included in a map. An item may belong to only one cluster. Conventionally, in VOSviewer, clusters are labeled using cluster numbers and colors. Each point in the item density visualization has a color that indicates the density of items at that point. By default, colors range from blue (lowest score) to yellow (highest score).

The co-authorship analysis of countries reflects the collaboration relationship between countries in the CSR field. Groups of countries with higher association strength between each other are separated in clusters, and the larger nodes represent the most productive countries in this research domain. The four clusters that the software has identified are discernible in Figure 4 through different colors (assigned by default within VOSviewer). The red cluster embraces the highest number of collaborators: Spain as the lead country, followed by Brazil, France, Italy, the Netherlands and Portugal. In the yellow cluster, the US and China cooperate with each other and with Taiwan in the CSR topic. The green cluster is dominated by the UK and includes Egypt, Libyan Arab Jamahiriya, New Zealand, and the United Arab Emirates as its main partners. A residual cluster is the blue one that comprises

TABLE 9 Top 10 researches by collaboration indicators

Author	Affiliation	Country/region	Academic-corporate collaboration (%)
Kärri, Timo	Lappeenranta University of Technology	Finland	25
Cricelli, Livio	University of Naples Federico II	Italy	18.8
Crifo, Patricia	École polytechnique	France	17.6
Grimaldi, Michele	University of Cassino and Southern Lazio	Italy	15.8
Mendes-Da-Silva, Wesley	Fundação Getúlio Vargas	Brazil	11.1
Thomson, Ian H.	University of Birmingham	United Kingdom	8
Hussain, H. I.	Taylor's University Malaysia	Malaysia	6.7
Renneboog, Luc D.R.	Tilburg University	Netherlands	6.2
Ettredge, Michael L.	Unknown institution	—	6.2
Kakabadse, Nada Korac	University of Reading	United Kingdom	6.2
Author	**Affiliation**	**Country/region**	**International collaboration (%)**
Pittman, Jeffrey A.	Memorial University of Newfoundland	Canada	100
Fung, Hung Gay	University of Missouri at St. Louis	United States	100
Lim, Chee Yeow	Singapore Management University	Singapore	100
Chintrakarn, Pandej	Mahidol University	Thailand	100
Tsang, Albert	Hong Kong Polytechnic University	Hong Kong	100
Chan, Kam C.	Western Kentucky University	United States	97.9
Chen, Yangyang	City University of Hong Kong	Hong Kong	95
Craig, R. J.	Durham University	United Kingdom	94.9
Veeraraghavan, Madhu	T.A. Pai Management Institute	India	94.7
Sial, Muhammad Safdar	COMSATS University Islamabad	Pakistan	94.7

Australia, Finland, and Hong Kong. In addition, Figure 4 shows the thickness and length of links between nodes, representing the cooperative relationship at the macro level. In this regard, the stronger association between nodes emerges between the US and China, who take charge of the CSR issues because they represent major industrial powers worldwide. Focusing on the length of links, the green cluster is strongly distant from the countries grouped in the other clusters.

To take the analysis a touch further, the themes mostly dealt with by the most productive researchers have been analyzed to understand where the most impactful knowledge has been focused. Thus, we performed a co-occurrence analysis of keywords of publication of selected authors in the same time span.

Working with keywords, the occurrences' attribute indicates the number of documents in which a keyword occurs, in other words, the combinations of keywords that appear most frequently in the selected publication. The minimum number of occurrences of a keyword that was considered is 5. We also inserted a thesaurus file to aggregate synonymous items.

The network map provides a visualization of the keywords' co-occurrence (Figure 5). This map distinguishes areas of different research

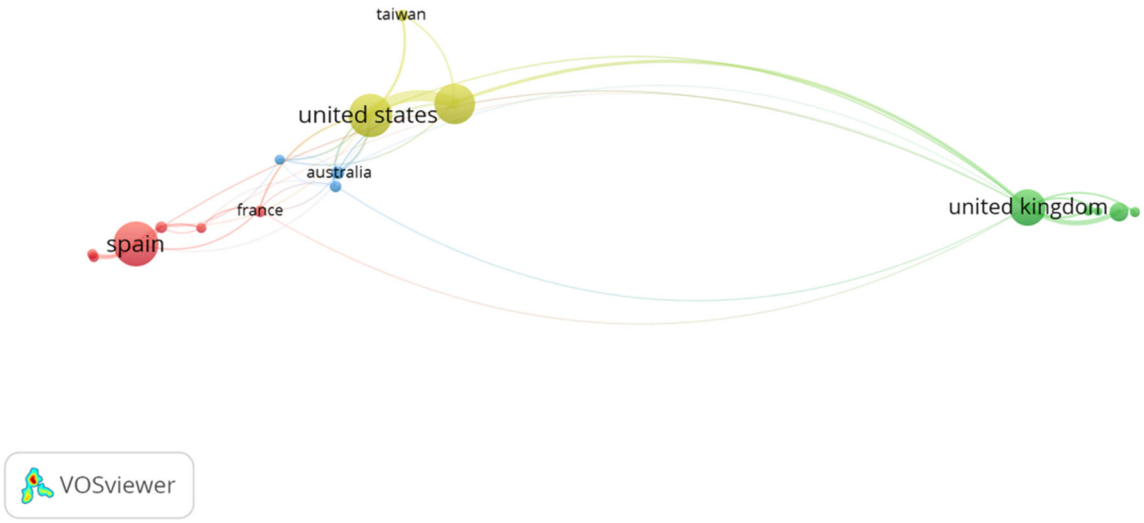

FIGURE 4 Co-authorship analysis by country (VOSViewer) [Colour figure can be viewed at wileyonlinelibrary.com]

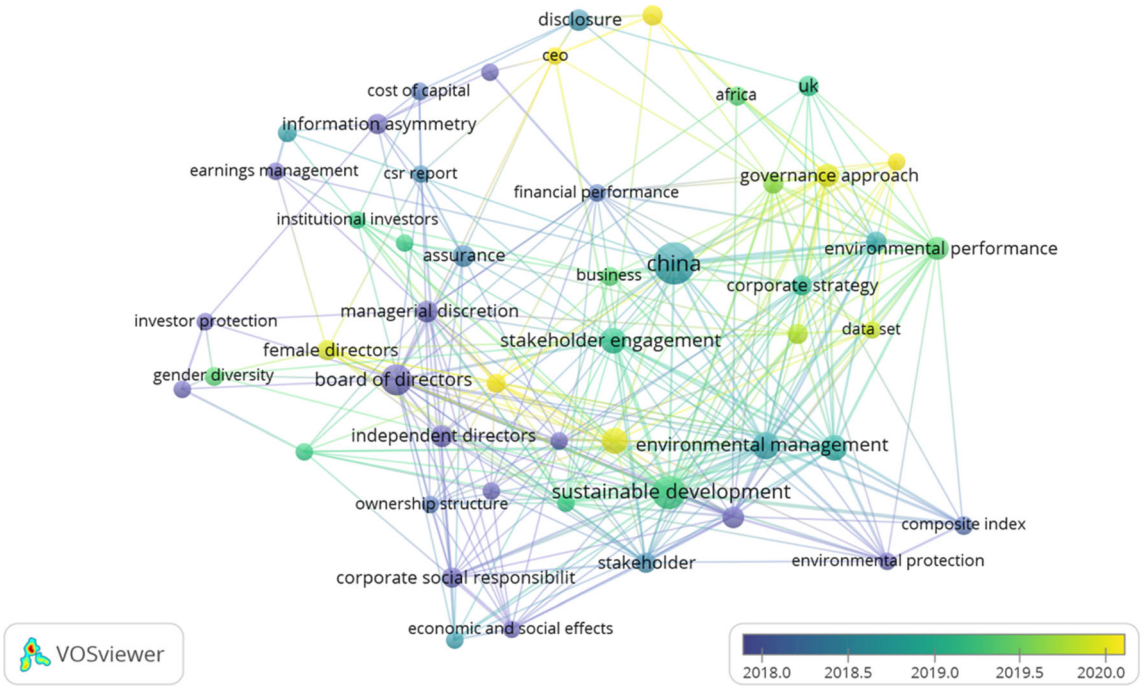

FIGURE 5 Co-occurrence analysis (VOSViewer) [Colour figure can be viewed at wileyonlinelibrary.com]

intensity by color. Research intensity represents the average publication year, from 2018 to 2020. Areas of higher research intensity in recent years are displayed in yellow, while areas of older publication years are displayed in blue. From this perspective, it emerges that the hottest themes considered are Covid-19, female directors and CEOs.

With regard to the first theme, scholars are primarily questioning how to deal with CSR during the pandemic (i.e. Raimo et al., 2021), while studies on gender diversity (the topic of research of Isabel María García-Sánchez, the top researcher by scholarly output) demonstrate the positive impact of female directors on voluntary socially responsible disclosure (Amorelli & García-Sánchez, 2020).

The oldest topics related to CSR and corporate governance analyzed by selected authors are the board of directors (Cucari et al., 2018), investor protection (Chih et al., 2008) and information asymmetry, among others.

4 | DISCUSSION

This section summarizes the findings of the bibliometric analysis in the CSR field according to the metrics employed.

Regarding the metric of research productivity in CSR, there is geographic concentration in mature economies, particularly in the US, at the macro level. This reflects the view that CSR is seen as a source of differentiation and the generation of new competitive advantages in mature markets (Bernal-Conesa et al., 2017; Marakova et al., 2021). Thus, the paper highlights the need for extending CSR research to other countries, especially in emerging countries in which this topic is gaining increasing attention. In this vein, for instance, the literature clarifies that CSR plays an important role for emerging market multinational enterprises, supporting them in overcoming legitimacy-based disadvantages in the eyes of global stakeholders (Ciasullo et al., 2020; Marano et al., 2017). At the meso level, research productivity in CSR is limited to US universities. This requires further investigations on the role of the resources (i.e., financial, infrastructural, technological) that public and private institutions make available to nurture an incremental quantity of scholarly output. Access to resources provides new research opportunities and thereby exacerbates differences across institutions in terms of research productivity. At the micro level, because Garcia-Sánchez, the most productive author, is Spanish, it is useful for advancements in CSR research to identify contextual and contingency factors harnessing the individual research productivity. Settings and situations, in fact, provide arenas where scholars develop projects affected by institutional features (type and size of institution, departmental climate, funding, laboratory size, etc.) and social aspects, such as workload and time spent (Brew et al., 2016; Edgar & Geare, 2013).

Concerning the metrics of scientific impact on the CSR topic, at the macro level there is geographic distribution across the world. This evidence requires being crossed with previous evidence showing the geographic concentration of research productivity in specific countries. In particular, attention needs to be paid to the identification of the barriers hindering a wider-range production of scholarly output. Research productivity and scientific impact, in fact, should develop at the same pace to significantly enhance the body of knowledge on CSR. At the meso level, scientific impact is attributed to heterogeneous institutions. The widespread quality of CSR publications suggests the strong presence of academic staff having high expertise in the CSR field. This could foster empirical studies aimed at identifying practices of talent attraction, development and retention, that is highly misconstrued in a competitive and demanding environment like the educational sector (Salau et al., 2018). At the micro level, Unerman (UK) and Dhaliwal (US) stand out in the quality of publications in CSR. Thus, it is useful for the advancement of CSR research to detect personal factors harnessing individual research productivity. In this regard, the literature identifies demographic variables including gender, family size and age of children (Stack, 2004), overseas training (Kim et al., 2011), academic capabilities and confidence, and self-efficacy (Quimbo & Sulabo, 2014).

Regarding the metrics of collaboration in CSR, international collaborations at the macro level mainly concern Near East and Asian countries, ranging from Yemen to Singapore. Thus, it could be interesting to conduct studies to delineate national patterns of research collaboration in global contexts. In this sense, intermediate steps could be focused on the identification of criteria for selecting the countries with which to collaborate, as well as the search for the best opportunities to establish and actualize possible collaborations in the digitalization era. At the meso level, international collaborations show an imbalance towards institutions located in developing countries. This can be explained because collaboration with well-established renowned institutions is a "research guarantor" indicator for the international co-authorship of the young institutions in developing nations (Khor & Yu, 2016). At the micro level, there is also a strong presence of scholars coming from developing countries. Their predilection to co-author internationally is due to the increase in the chance to achieve more visibility and citations in prestigious journals (Khor & Yu, 2016). On these bases, our study suggests moving forward by investigating the drivers that affect the international co-authorship of scientific publications focused on CSR. This is a promising future research direction because institutions recognize international collaborations as critically important in the struggle for resources and academic reputation, while scholars consider international collaborations as a prerequisite for establishing a successful and faster individual career path, securing external funding for research, and entering the global scientific community (Kwiek, 2021). Focusing on another area, academic–corporate collaboration is globally widespread but with low scores at both the macro and meso levels. In contrast, academy and industry collaboration is concentered at the micro level. Thus, there is untapped potential to enhance collaboration among institutions/scholars and organizations in the CSR field. As noted by Kieser and Leiner (2012, p. 15), collaborative research is seen "as ensuring alignment of researchers' and practitioners' interests in management research." In this sense, this study suggests investigating the more suitable mechanisms through which the collaborative work of academia and industry could be improved and supported. The contribution of this form of collaboration to the research quality on CSR arises

from matching different perspectives and competencies to co-produce knowledge about a complex phenomenon (Polese et al., 2021). From this point of view, we suggest to journal editor(s) that they include a requirement for published research to include a practitioner as author(s). We maintain that such initiatives would create a win–win situation for academics and practitioners to generate more impact in this field.

Finally, by conducting an analysis of keywords' occurrence, we found that the main lines of research (cluster) are performance assessment, CSR communication, and the role of top management teams in CSR. From these clusters, future lines of research could form, such as the emergence of new sustainable business paradigms (Ciasullo et al., 2019; Ma et al., 2021). In any case, there are some areas that have not been covered yet or that deserve further investigation. For instance, one area is the cultural changes needed for shaping a strong foundation for efficient and effective implementation of sustainability into all levels of business, since "*sustainability integration is inevitably a cultural factor*" (Hristov et al., 2021, p. 14).

5 | CONCLUSION

Bibliometric analysis has been utilized to evaluate global research productivity in different research topics. However, to date there has been no assessment of worldwide research productivity associated with individual researchers in the CSR field. Therefore, the aim of this study was to evaluate the global research productivity of individuals in this specific field. Specifically, we used a range of metrics to report author impact and demonstrated that changes in the metrics used give a different impression of the reported productivity.

The target audience for this study are academics, present and potential authors, and the editors or editorial board of journals that publish in this field. We suggest that authors who have previously conducted research on CSR should collaborate in conducting joint research to encourage more scholars to undertake advanced research on CSR. This would allow both categories of authors to increase their numbers of CSR papers, and it would also increase the diversity of CSR studies. However, as suggested by Kieser et al. (2015), scholars need to investigate how the results of scientific research are utilized in management practice. This is evident within the CSR and sustainability field due to external pressures on academic science to prove its value for society (Ryazanova & Jaskiene, 2022). Our results, highlighting academic–corporate collaboration, could reduce this trade-off and incentivize scholars to expand their view of the research nexus to include the third mission of the university. However, identification of the most productive researchers in this specific field could provide different benefits.

First, those authors who publish the most in each area can be considered as the most prestigious or making the highest academic contribution (Lotka, 1926; Pritchard, 1969), or they are authors who have received more research funding, since the positive relation between funding and the rate of publications has been confirmed previously (Ebadi & Schiffauerova, 2016). In this way, our study contributes to "cultivate a reputation" in an academic field (Whitley, 2000). Second, it helps potential research candidates in decision making regarding institutions and supervisors for their research degrees. Also, from this point of view, some research has found that it is more important for how researchers build their collaboration network than for what publications they produce and whether they are cited (Ebadi & Schiffauerova, 2015a). Consequently, our paper could be useful to select highly prolific research groups, taking into account the differences at the micro, meso and macro levels.

Third, this study could help to promote new collaborations or affect the network of already established collaborations between co-authors. The reasons for collaborations are different, such as access to expertise, to obtain prestige or visibility, to make progress more rapidly, to satisfy curiosity and intellectual interest, or simplicity for fun and pleasure (Beaver, 2001). From this point of view, more research is needed on how to conduct such collaborative research to make it most productive for both sides. In this direction, researchers should enter into collaboration with firms because theory-based knowledge can be complemented by practice-based knowledge (Bartunek, 2007; Van de Ven & Johnson, 2006). Academic–practitioner collaboration allows us to test and verify scientific knowledge and practice on CSR, also writing articles that have a practical value and impact.

Fourth, as suggested by Ellegaard and Wallin (2015), the use of bibliometric methods is obviously driven by a need to evaluate scientific production and make the results available to policymakers, scientists or other stakeholders. Our study could help to improve the "credibility cycle in the literature" (Latour & Woolgar, 1979).

In spite of the contributions by this study to the relevant field, some limitations should be acknowledged. First of all, we did not analyze how the CSR literature set was spread across different journals. Future work could include this analysis to determine the multidisciplinary nature and the stage of maturity of research in the CSR field. Moreover, this study does not provide a picture of the publications that have contributed to contemporary research in the CSR field, which could enlarge the time frame of the analysis. Third, our paper is a quantitative analysis, so qualitative aspects are not considered, which, together with the use of other computer tools from data analysis, might provide slightly different results. Thus, future studies could adopt more mixed-method bibliometric approaches (i.e., co-citation, bibliographic coupling) and attempt to identify more thematic clusters in order to shape an itemized science map of the CSR field. Moreover, our results cannot be generalized to the entire scientific literature on CSR because some search strategies and related decisions might have been reductive. In this direction, the current study's five-year period of productivity as well as its concentration on the top 20 authors might be extended in further studies.

Finally, future works should explore the real-world impact of research beyond academia (Crane & Glozer, 2022), using different types of metrics emerging to measure social impact, such as social network.

ACKNOWLEDGMENT

Open Access Funding provided by Universita degli Studi di Roma La Sapienza within the CRUI-CARE Agreement.

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How to cite this article: Cucari, N., Tutore, I., Montera, R., & Profita, S. (2023). A bibliometric performance analysis of publication productivity in the corporate social responsibility field: Outcomes of SciVal analytics. *Corporate Social Responsibility and Environmental Management*, *30*(1), 1–16. https://doi.org/10.1002/csr.2346