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Exploring sustainability disclosures in family firms: a bibliometric analysis

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ABSTRACT

Families own two-thirds of the world's private businesses. It is an organizational model that has succeeded in various sizes, both small and large publicly listed companies. This study aims to explore the developments in sustainability reporting for family firms. The current study employs bibliometric analysis to examine family firms' sustainability literature's conceptual structure and influential aspects. Our study recruited 131 research documents from 2004 to 2021 based on our inclusion criteria. The findings from the conceptual analysis, the co-occurrence network of keywords analysis yields three clusters: CSR disclosures and corporate governance in family firms of emerging economics (red cluster), while red and green clusters focus on environmental performance, earnings management, and corporate governance in family firms. Our study has also highlighted the influential aspects of sustainability in family firms' literature. Our findings have significant implications for researchers and policy-makers. Our findings could be helpful to both family businesses and sustainability researchers. The study contributes to the business literature by illuminating the new research directions in sustainability reporting by family firms using bibliometric techniques.

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1. Introduction

Corporate social responsibility (CSR) disclosure is characterized as communicating an organization's social and environmental activities to its stakeholders (Arslan et al., 2022; Gamerschlag et al., 2011; Gavana et al., 2018; Liu et al., 2022; Raimi et al., 2022). Prior research has sought to show the beneficial effects of CSR disclosure on several aspects of business, such as corporate market value, firm performance, and the cost of capital (Carini et al., 2017; Gillan et al., 2021; Hysa et al., 2020; Khan

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et al., 2021; Lee, 2020; Popescu et al., 2022). Previous research has considered the relationship between CSR disclosure and the cost of equity capital (Dahiya & Singh, 2021; Kwabi et al., 2022; Li & Liu, 2018; Tseng & Demirkan, 2021). For example, Dhaliwal et al. (2011) identified that increasing voluntary environmental disclosure lowers a firm's cost of equity capital, while Richardson and Welker (2001) determined that increasing voluntary CSR disclosure increases a firm's cost of capital. Previous empirical research on the importance of CSR reporting in terms of market value as calculated by its stock price or market reaction has also produced mixed results. Moreover, as the value of CSR has increased, so has the demand for transparency Simnett et al. (2009); Zhang et al. (2022); and Shanyu (2022), with businesses investing money and time to provide details regarding their environmental and social results via annual reports or through specialized CSR report card (Gamerschlag et al., 2011; Liu et al., 2022). The literature on CSR reporting has exploded in recent years, coinciding with the rise in CSR activities, on the premise that this means the organization is responsible for its actions (Perrini, 2005). Many studies have examined the role of ownership structures, such as state-owned firms (Bilal et al., 2022; Deshui et al., 2022; Komal et al., 2021; Tan et al., 2020; Zhang et al., 2022), privately-owned firms (Alfalih, 2022; Liu et al., 2022; Süsi & Jaakson, 2020), and family-owned businesses (Ahmad et al., 2020; Chen & Liu, 2022; Farooq et al., 2022). Our study aims to review the CSR studies on family-owned businesses through bibliometric analysis.

While family businesses are one of the most common types of business and play an influential role locally and globally, it is not fully evident in the literature how family businesses differ from non-family businesses in terms of their impact on CSR disclosures. A plethora of research, Abbas et al. (2022); Campopiano and De Massis (2015); Kolsi and Attayah (2018); Nekhili et al. (2017); and Araya-Castillo et al. (2022) have heightened the firms' CSR behaviours and characteristics for family-owned businesses to determine whether these firms act differently than non-family business firms. Family businesses are one of the pillars of the global business community. Consequently, scholars have provided many definitions¹ for family businesses from different angles (Poza, 2013; Rajan et al., 2023). CSR in family businesses gained the attention of researchers in recent years (Chen & Liu, 2022; De Massis et al., 2012). Specifically, Chen et al. (2008) comparative study between family and non-family companies regarding voluntary disclosures suggested that there are fundamental differences between voluntary disclosures for both types of business. Based on this determination, Nekhili et al. (2017) found that family firms provided less information related to their CSR activities than non-family firms. The prior CSR literature in family firms contributed in different contexts, as Ma (2023); Guo (2022); Mariani et al. (2021) and Su et al. (2022) in China, Randolph et al. (2022) and Kilincarslan (2021) in Turkey, Cabeza-García et al. (2017) in Spain, Martínez-Ferrero et al. (2018) in Italy, Nekhili et al. (2017) in France, Iyer and Lulseged (2013) in the USA, and Biswas et al. (2019) in Bangladesh. However, the prior studies are inconclusive. Therefore, our study contributes to this contemporary literature on CSR in family firms for analyzing the past progress on this topic and the setting future research agenda in this domain.

The current study extends the business literature by shedding light on CSR disclosure (sustainability reporting) in family businesses using a bibliometric analysis of 131

research records from 2004-2021. Thus, providing a cumulative value to the literature regarding the importance of sustainability disclosure in family-owned firms by identifying the core topics in sustainability publications. These findings have significant implications for researchers and policymakers. For instance, the results may be helpful to both family-owned businesses, and CSR researchers since the findings provide insights into the causal chain between family control, CSR disclosure, and firm social and economic results. In addition, since the research focuses on CSR disclosure, it will enable stakeholders to determine how an organization's social, economic, and environmental activities engage specific interest groups.

The remainder of the study is structured as follows: [Section 2](#) introduces the bibliometric analysis procedures of the study. [Section 3](#) provides the scheme of study. [Section 4](#) describes the composition of bibliometric data. [Section 5](#) presents the bibliometric analysis and visualization of the study. [Section 6](#) concludes the study with limitations and further research.

2. Bibliometric analysis procedures

This study was conducted in five stages to establish a bibliometric workflow, a process identified by Zupic and Čater (2015) to ensure the comprehensiveness and accuracy of the analysis. [Figure 1](#) depicts the bibliometric analysis of sustainability disclosures in family firms.

3. Scheme of study

In the current study, we seek to contribute to two questions under discussion in the literature and provide insights on the sustainability disclosures of family firms. First,

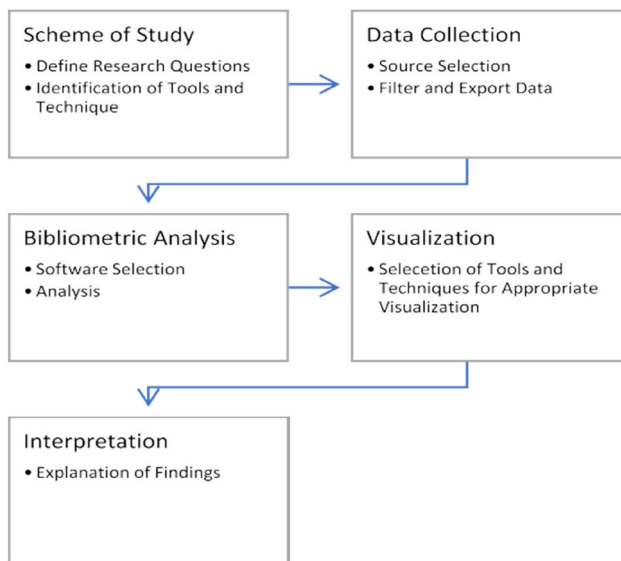


Figure 1. Bibliometric analysis procedure.
Source: Authors compilation.

we explore the selected studies' key research topics and trends to formulate the agenda for future research. Second, we explore the influential aspects of sustainability disclosure in family firms.

For the first research question about conceptual structure, key research topics and trends are derived from the keyword analysis by employing the co-occurrence map, thematic map, and thematic evolution. For keywords analysis, *keywords plus a category generated by the online system are used*. This category explains the study's information structure and aids in identifying and connecting various research areas (Gamerschlag et al., 2011).

This paper uses descriptive analysis to address question 2 and identify key sources (e.g., journals), prominent authors, top countries, papers, and main institutions within the sustainability disclosure literature on family firms. Specifically, we used source impact, total citations, and net publications per year to identify key sources and prominent authors in the selected studies. In addition, we also used Bradford's Law to classify the primary sources into three zones. Zone 1 is the most productive, Zone 2 is moderately active, and Zone 3 is low production Simnett et al. (2009). Based on the frequency of publications and total citations of the selected publications on sustainability disclosures in family firms, we identify the top countries and their affiliations.

4. Data collection

Bibliometric data is divided into two parts. The first section involves choosing a database from which articles are extracted and reviewed. For this process, various databases, such as Scopus, Web of Science, and Dimensions, were identified, using a search query for each collection to obtain holistic data. We have used Scopus due to the wide range of data from top-tier journals to newly emerging journals coverage. The final search query in Scopus is TITLE-ABS-KEY 'corporate social responsibility' OR CSR OR sustainability AND TITLE family* OR 'family firm*' AND LIMIT-TO (LANGUAGE, English). Most related articles linked to CSR disclosure in family firms are retrieved. We restrict our search query to only journal articles and articles written in English for efficient research. The benefit of using a single language for bibliometric research is that it provides various resources for comparing keywords, article sources, and affiliations. Twenty papers were non-English language. Furthermore, we manually analyzed the documents, and fifty articles were also eliminated because they did not meet the study's objectives. Our final sample consists of 131 articles.

5. Bibliometric analysis and visualization

The application of statistical methods to books, articles, and any media communication is defined as bibliometric analysis (Chelli et al., 2014). Biblioshiny is a tool R-package which enables non-coders to undertake a complete bibliometric analysis by selecting various options from predetermined categories such as sources, records, writers, conceptual structure, social structure, and intellectual structure. We prefer biblioshiny over the other bibliometric analysis packages, such as VosViewer and SciMAT, as it offers more extensive features such as conceptual structure and thematic analysis. Researchers

can retrieve findings from biblioshiny in several formats, such as tables and graphs (Chelli et al., 2018). For influential aspects, descriptive analysis was conducted by employing frequency distribution, Bradford's Law, global citation, and h-index research tools available via the biblioshiny interface. We used a keyword analysis with science mapping techniques of the conceptual structure by keywords plus and authors' keywords as input data to identify the key topics and themes by co-occurrence network, thematic map, and thematic evolution.

Table 1 depicts the descriptive features of sustainability publications in family-owned firms, which are critical to comprehend before proceeding with the research. We assessed 131 documents from 67 academic journals. These journals all use a total of 171 keywords, as well as 357 author keywords. We reviewed and assessed the sustainability literature from 2004 to 2021. The articles were composed by a total of 328 researchers, with 13 articles written by a single author. The collaboration index revealed a significant level of collaboration in sustainability publications, with a 2.67 collaboration index. The paper-per-author ratio is 0.399, which indicates that, on average, a published paper is co-developed by approximately three authors.

Figure 2 illustrates the annual performance. We find that from 2004 research publications started on this topic. There were few papers before 2012, and we did not find any papers from 2006 to 2009. However, over time, it gradually increased and was distinguished by methods selectively focused on the organization and management of family businesses. During the 2004-2011 timeframe, there was a greater emphasis by researchers on the long-term viability and succession of family businesses. In the sample studied, from 2011–2016, there was an increasing trend in production, which illustrates the continued development resulting in a substantial

Table 1. Descriptive features of sustainability publications.

Description	Results
MAIN INFORMATION ABOUT THE DATA	
Timespan	2004:2021
Sources (Journals, Books, etc.)	67
Documents	131
Average years from publication	3
Average citations per document	20.76
Average citations per year per doc	3.991
References	10279
DOCUMENT TYPES	
Article	126
Review	5
DOCUMENT CONTENTS	
Keywords Plus (ID)	171
Author's Keywords (DE)	357
AUTHORS	
Authors	328
Author Appearances	379
Authors of single-authored documents	13
Authors of multi-authored documents	315
AUTHORS COLLABORATION	
Single-authored documents	13
Documents per Author	0.399
Authors per Document	2.5
Co-Authors per Documents	2.89
Collaboration Index	2.67

Source: Authors compilation.

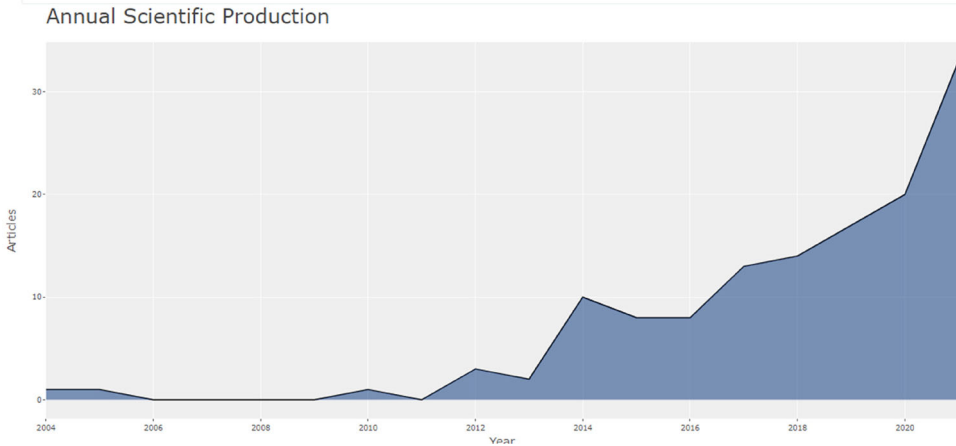


Figure 2. Annual scientific production.
Source: Authors compilation.

increase. The subjects discussed during this highly productive time were numerous. However, the most recurring theme was family business succession. From 2016 forward, the growth in the production of sustainability disclosure literature related to family-owned firms continued to increase exponentially with a steep upward trend, as noted in Figure 2. Since 2020, the production is now considered consistent.

Figure 3 provides a three-dimensional overview of sustainability publications, with a keyword plus on the left, affiliations on the right, and countries of interest in the

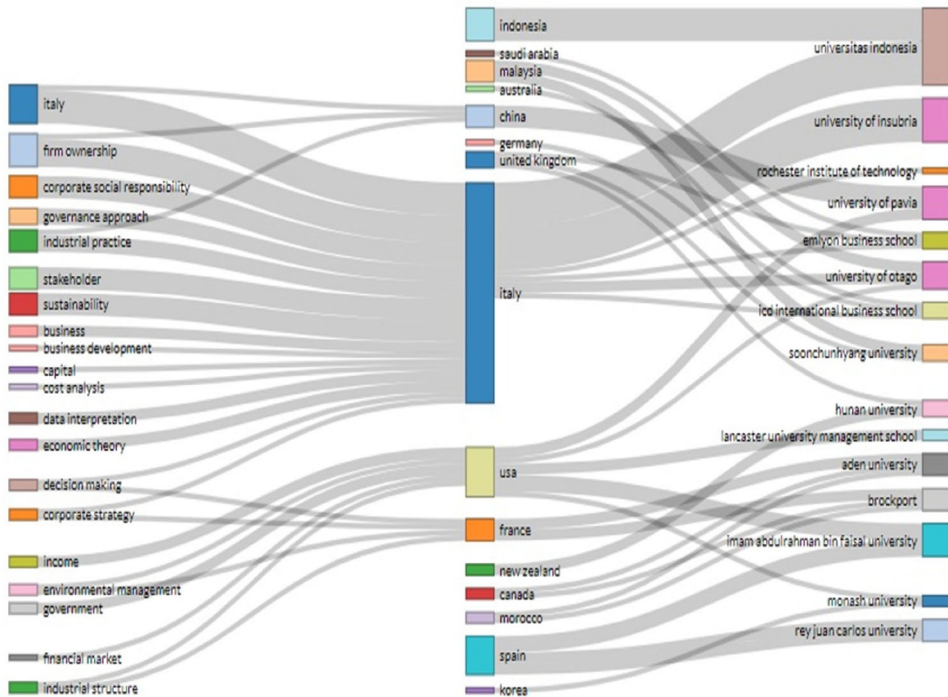


Figure 3. Three-fold analysis of sustainability literature.
Source: Authors compilation.

centre. As seen in Figure 3, Italy's collaboration with most of the top affiliations on issues linked to sustainability and transparency in family firms (Gavana et al., 2017b, 2018; Shanyu, 2022). While the United States (Iyer & Lulseged, 2013), Spain (Déniz & Suárez, 2005), and China (Li & Liu, 2018; Liu et al., 2022; Ma, 2023; Zhang et al., 2022) have made significant contributions to CSR disclosures in family firms.

5.1. Core words

The most common terms used within the sustainability disclosures in family firms literature are noted in Table 2. keywords are divided into four sections: keywords plus, authors' keywords, keywords from the abstract, and keywords from the title. Table 2, panel a shows the most frequent ten words in the Scopus system generated (keywords plus). The most frequent keywords in this category are *CSR (24 times)*, *Sustainability (13 times)*, and *Family Firms (7 times)* confirms the appropriateness of our selected studies as they reflect sustainability in family firms. Panel b presents the most common authors' reported top ten keywords. Similarly, we observed that our selected studies top authors' keywords *CSR (104 times)*, *Family Firms (57 times)* and *Family Business (36 times)* are in line with our topic sustainability in family firms. Panel c portrays the top ten most repeated words from the abstract of the selected studies. We have observed that *Family (598 times)*, *CSR (442 times)*, and *Firms (393 times)* again confirm the topic of this study. In the same way, panel d presents the top ten most repeated words from the title of the selected studies. We have observed that *Family (125 times)*, *Corporate (84 times)*, and *Social (83 times)* again confirm the topic of this study, the corporate social responsibility in family firms.

Table 2. Most frequent words.

(a) Keywords plus		(b) Authors' Keywords	
Words	Freq.	Words	FSreq.
CSR	24	CSR	104
Sustainability	13	Family Firms	57
Family Firms	7	Family Business	36
Environmental Economics	6	Family Ownership	31
Firm Size	6	Sustainability	19
Stakeholder	6	CSR Disclosure	16
Business	5	Socio-Emotional Wealth	16
Business Development	5	Corporate Governance	15
Environmental Management	5	Environmental Performance	15
Firm Ownership	5	Firm Performance	13
(c) Abstract		(d) Title	
Words	Freq.	Words	Freq.
Family	598	Family	125
CSR	442	Corporate	84
Firms	393	Social	83
Social	233	Responsibility	76
Corporate	182	Firms	54
Responsibility	171	CSR	30
Study	139	Ownership	21
Performance	113	Business	16
Research	104	Evidence	14
Ownership	91	Role	14

Source: Authors compilation.

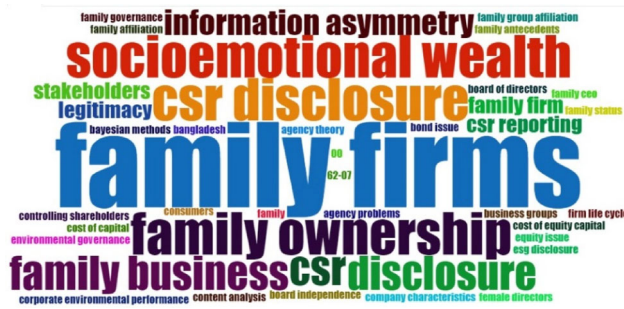


Figure 4. Word cloud.
Source: Authors compilation.

In [Figure 4](#), the word cloud is generated from the keyword plus. Words that often appear in the literature have a high frequency. In the literature on sustainability disclosure, family firms are the most common and significant among all the keywords identified by the system. The literature also identified several other keywords, including family owners, socioemotional income, and CSR disclosure, which may indicate why so much research is conducted on CSR disclosure. Companies invest a lot of time and resources into sharing knowledge about their social, economic and environmental policies because this enables them to build moral capital (Gamerschlag et al., 2011; Hussain et al., 2023). The family business shown in [Figure 4](#) as a keyword represents many of the nation’s companies. Other keywords: *Cost of Capital*, *Information Asymmetry*, and *Stakeholders’ Legitimacy*, are all identified. All keywords identified within the literature are displayed in [Figure 4](#).

5.2. Conceptual framework

This section uses word relationships to help us understand different themes (keyword plus). The study begins by proposing a co-occurrence network that helps us assess

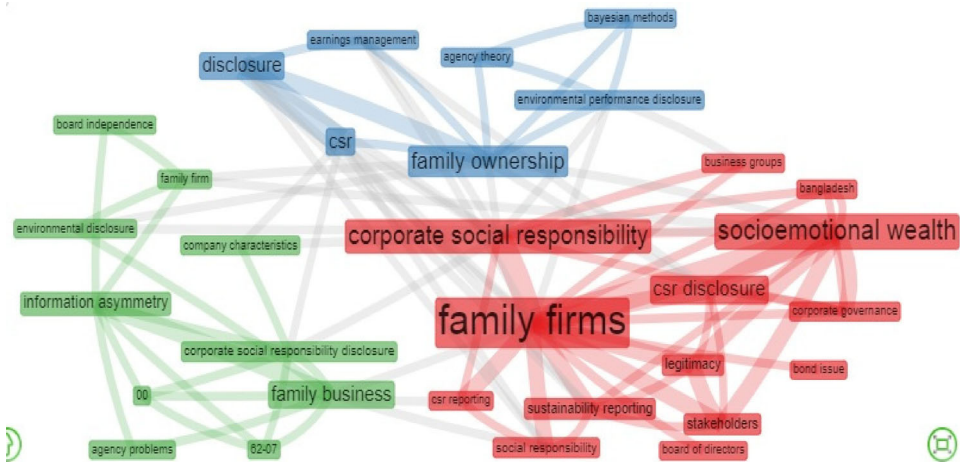


Figure 5. Co-occurrence network.
Source: Authors compilation.

Table 3. Keywords in each cluster.

Keywords	Clusters
Business group, Bangladesh, CSR disclosure, CSR, family firms, corporate governance, CSR reporting, sustainable reporting, bond issue, board of directors, social responsibility, legitimacy.	Red
Family ownership, disclosure, CSR, earnings management, agency theory, environmental performance disclosure.	Blue
Corporate social responsibility disclosure, company characteristics, agency problems, board independence, family firm, information asymmetry, family business, environmental disclosure.	Green

Source: Authors compilation.

several sustainability disclosure topics in family-owned businesses over time. We evaluated the centrality and density of the network by putting these word networks on a bi-dimensional matrix called a thematic map.

Figure 5 shows the co-occurrence network of the keyword plus. The co-occurrence network of keywords reveals that four streams of sustainability literature in CSR disclosure are reported in Table 3. The red cluster focuses on CSR disclosures and corporate governance in family firms of emerging economies such as Bangladesh (Biswas et al., 2019; Block & Wagner, 2014; Campopiano et al., 2019; Chiang & Liu, 2015; Fonseca & Carnicelli, 2021; Lamb et al., 2017; Le Breton-Miller & Miller, 2016; Schafer & Goldschmidt, 2010). This cluster is the most dominating, with a high centrality, in line with recent corporate governance literature (Ezeani et al., 2022; Ezeani et al., 2021; Usman et al., 2022). In contrast, the blue and green clusters are thematically related and emphasise research on environmental performance, earnings management, and corporate governance in family firms (Anwar & Ahmed, 2020; Britzelmaier et al., 2015; Cordeiro et al., 2021; Gavana et al., 2017a; Mulyani & Solin, 2019; Rivo-López et al., 2021).

5.3. Thematic map

Our study has identified some relevant study themes to understand the findings better. To evaluate the significance and creation of the research theme, we grouped the established themes into a strategic diagram. The thematic map based on density (y-axis) and centrality (x-axis) is shown in Figure 6. The value of the chosen theme is measured by centrality, and the growth of the chosen theme is measured by density. The graph is split into four themes. Table 4 is made up of the clusters depicted in Figure 6.

The *basic or transversal themes* are found in the lower right corner of the thematic map. These themes have a low density but are vital for reviewing the literature on sustainability in family firms. In our analysis, we observed that basic themes focused on CSR disclosures and corporate governance issues in the family firms, especially in the institutional environment of China, which is criticised for the government's political influence due to many state-owned firms (Combs et al., 2020; Du, 2015). These basic themes are studied extensively in our selected studies. Likewise, the upper left section reflects high density; however, low centrality *niche* themes are also well-developed and isolated. Our findings indicate that CSR performance in family firms considers the moderating role of the female in top management team (Biswas et al.,

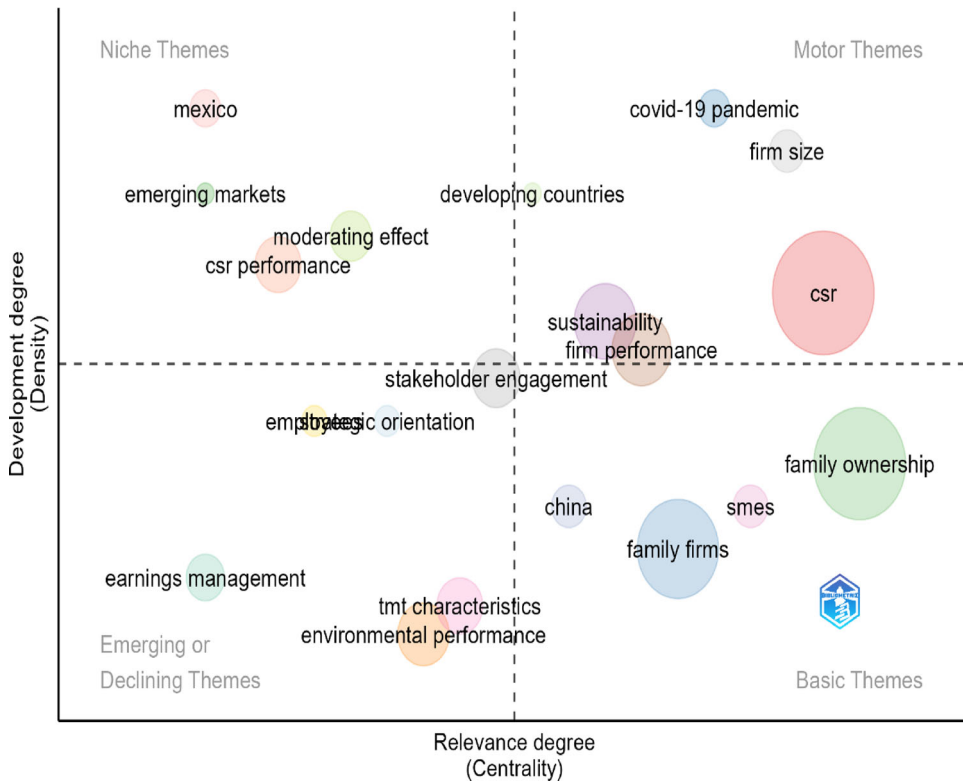


Figure 6. Thematic map.
Source: Authors compilation.

2022); CEO age (Meier & Schier, 2021); family involvement (Anwar & Ahmed, 2020; Cordeiro et al., 2023; Cordeiro et al., 2020; Hajawiyah et al., 2019; Nirmala et al., 2020; Yeon et al., 2021); and entrepreneurial orientation (Hernández-Perlines & Ibarra Cisneros, 2017) in emerging and developed countries.

Finally, motor themes represent high density and centrality in the upper right corner. The motor themes of our study revealed the research on determinants of sustainability disclosures in family firms, such as CSR assurance (Chen & Cheng, 2020) and (Martinez-Ferrero et al., 2017), R&D (Yeon et al., 2021), Social Capital (Nirmala et al., 2020), and the COVID-19 pandemic (Rivo-López et al., 2021). These determinants also have room for more contributions in different contexts.

5.4 Thematic evolution

Figure 7 portrays the evolution of sustainability literature in family firms over time. The history of themes and how they evolved is depicted using authors' keywords. Thematic progression is achieved with three segments of time. Section 1 report on 2004-2017, section 2 reports on 2018-2020, and Segment 3 represented the publications in 2021-2022. Corporate social responsibility disclosures and stakeholder engagement were hot topics from 2004 to 2017 in family firms and businesses. The second segment, from 2018 to 2020, covers socio-emotional wealth and sustainability issues in

Table 4. Themes and keywords in thematic map.

Theme	Cluster representation	Keywords in cluster
Basic Theme	Sustainability disclosures and corporate governance in family firms	Family Ownership CSR Disclosure Socio-Emotional Wealth Corporate Governance Agency Theory Stewardship Theory Institutional Environment Institutional Ownership Bayesian Analysis Companies Legitimacy Family Firms Political connections SMEs China
Emerging Themes	Environmental performance and role of top leaders in family firms	Environmental Performance TMT Characteristics Earnings Management Employees Strategic Orientation Stakeholder Engagement
Motor Theme	Determinants of sustainability disclosures in family firms	CSR Family Business Social Performance Board Characteristics Corporate Philanthropy Content Analysis CSR Assurance Germany India R&D Social Capital Values Firm Performance Sustainability Firm Size COVID-19 Pandemic Developing Countries
Niche Theme	CSR performance in family firms	CSR performance Chaebol firms Moderating effects PLS Emerging Markets Mexico

Source: Authors compilation.

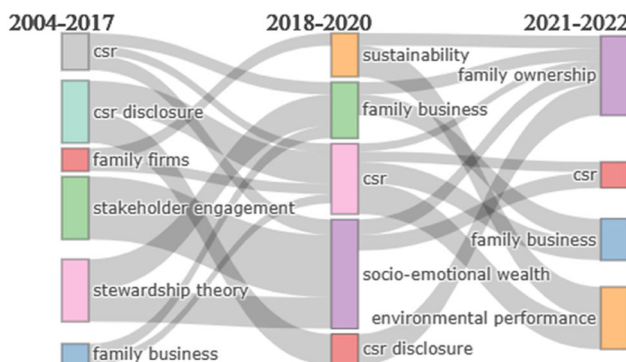


Figure 7. Thematic evolution.

Source: Authors compilation.

Table 5. Journal rankings according to Bradford law.

Source	Rank	Freq	Cum Freq	Zone
SUSTAINABILITY (SWITZERLAND)	1	15	15	Zone 1
JOURNAL OF BUSINESS ETHICS	2	9	24	Zone 1
CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT	3	8	32	Zone 1
BUSINESS STRATEGY AND THE ENVIRONMENT	4	6	38	Zone 1
SOCIAL RESPONSIBILITY JOURNAL	5	6	44	Zone 1
JOURNAL OF FAMILY BUSINESS MANAGEMENT	6	5	49	Zone 2
JOURNAL OF FAMILY BUSINESS STRATEGY	7	5	54	Zone 2
JOURNAL OF BUSINESS RESEARCH	8	4	58	Zone 2
ASIAN BUSINESS AND MANAGEMENT	9	3	61	Zone 2
FAMILY BUSINESS REVIEW	10	3	64	Zone 2

Source: Authors compilation.

family firms, which are hot topics in the second segment of thematic evolution. In line with the emerging themes of the thematic map, research moves to environmental performance in family firms in recent years (2021-2022). Thus, the way forward in this literature is to contribute more towards carbon emission reductions and other environmental initiatives of the governments and companies in family firms.

5.4. Influencing factors of sustainability publications

5.4.1. Core journals

The Bradford Law employed to find the key journals that publish sustainability literature in family firms. Table 5 displays the Bradford law-based journal rankings.

As identified in Table 5, Bradford Law classifies journals into three zones. Zone 1 provides the most important sources for sustainability disclosure articles. This is the

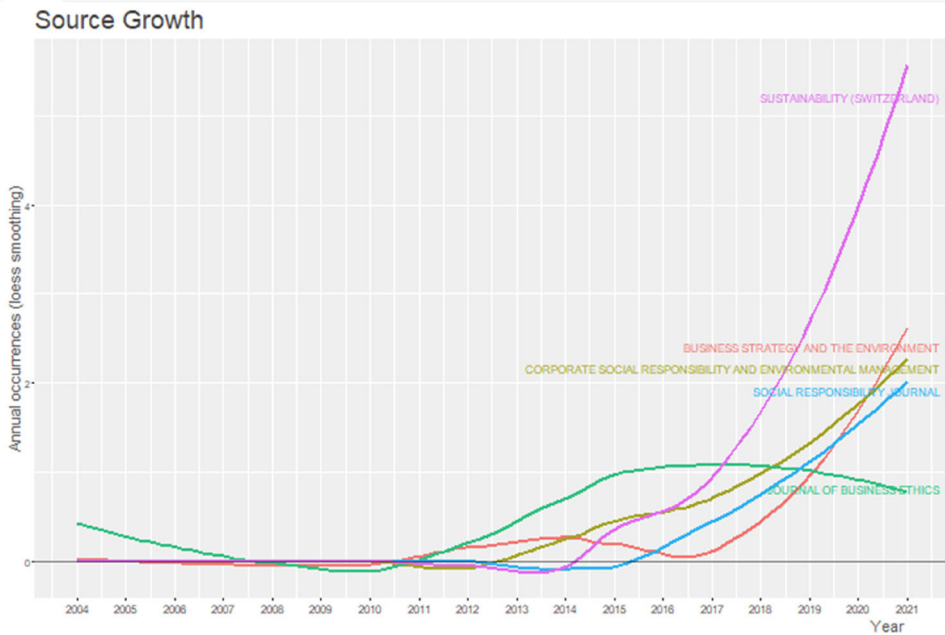


Figure 8. Source growth.

Source: Authors compilation.

nuclear region, which represents journals with many publications. We discovered that five journals, out of a total of 67, fall into core zone 1, with the remaining journals falling into zones 2 and 3. The main publication outlets for sustainability literature in family-owned firms are ‘Sustainability (Switzerland)’, ‘Journal of Business Ethics’, and ‘Corporate Social Responsibility and Environmental Management.’

Figure 8 depicts the increase in the number of publications by each top journal. Since 2017, the number of publications by ‘Business Strategy and the Environment’ has increased significantly. It is the most important source of sustainability literature in family-owned firms. The Social Responsibility Journal and Sustainability (Switzerland) have an increasing trend in publications from 2016 to 2020. Both journals are considered a must-read for scholars and policymakers with a mandate related to sustainability disclosure.

5.4.2. Top papers in the field

The top papers in sustainability publications in family firms are highlighted in this section. Table 6 identifies the ten most widely cited publications worldwide. Number 1 is the article written by Cruz et al. (2014) with 205 citations. Cruz et al. (2014) compared family-owned and non-family-owned firms concerning sustainability spending and concluded that family-owned firms are socially responsible because of socioemotional wealth bias toward external stakeholders but are irresponsible to internal stakeholders because of heavy external spending. Thus, family-owned firms are socially responsible and irresponsible at the same time.

Déniz and Suárez (2005) published the second most cited article on sustainability in the family business in Spain, with 191 citations. Déniz and Suárez (2005) also identified the same positive and negative social aspects of family businesses in Spain. Campopiano and De Massis (2015) is the third paper that examined the impact of 130 families’ participation in charitable works within small and medium-family firms

Table 6. Most globally cited articles.

Title	Year	Cited by	DOI
Are Family Firms Really More Socially Responsible?	2014	205	10.1111/etap.12125
Corporate social responsibility and family business in Spain	2005	191	10.1007/s10551-004-3237-3
Corporate Social Responsibility Reporting: A Content Analysis in Family and Non-family Firms	2015	165	10.1007/s10551-014-2174-z
Family business and corporate social responsibility in a sample of Dutch firms	2004	145	10.1108/14626000410537128
The effect of family ownership on different dimensions of corporate social responsibility: Evidence from large US firms	2014	114	10.1002/bse.1798
The Heterogeneity of Family Firms in CSR Engagement: The Role of Values	2014	111	10.1177/0894486514539004
Is Corporate Philanthropy Used as Environmental Misconduct Dressing? Evidence from Chinese Family-Owned Firms	2015	91	10.1007/s10551-014-2163-2
Corporate social responsibility disclosure and market value: Family versus non-family firms	2017	86	10.1016/j.jbusres.2017.04.001
Family firms and practices of sustainability: A contingency view	2016	75	10.1016/j.jfbs.2015.09.001
Family control and corporate social responsibility	2016	70	10.1016/j.jbankfin.2016.08.008

Source: Authors compilation.

in Italy. The results of their study indicated that family participation in charitable works is positively linked with the percentage of ownership in family firms. Uhlaner et al. (2004) is fourth (with 145 citations) among our selected studies that have interviewed 42 small and medium-sized Dutch businesses. They concluded that the generation of the owner; company tenure in the community; community size; company size; and inclusion of the family surname in the business name are important dimensions for social spending. Garcia-Sanchez et al. (2014) is the fifth paper with 114 citations, focused on the popularity of family businesses in recent decades.

The remaining studies on sustainability disclosures in family firms are as follows. For example, Marques et al. (2014) explored the importance of family values in corporate social responsibility engagement by studying 12 Spanish family businesses. Nekhili et al. (2017) have 91 citations, using a sample from listed firms in France, examined the moderating role of family participation in the association between CSR reporting and corporate market value. They determined that family businesses disclose less detail about their CSR responsibilities than non-family businesses. Gavana et al. (2017a) examined the relationship between earnings management and CSR disclosure in family and non-family companies using a sample of Italian companies from 2006-2015. They identified that family companies resort to the use of CSR disclosure to gain attention in the case of their practising earnings management when profits are lower.

Iyer and Lulseged (2013) stated that the primary goal of their study was to examine the relationship between family status and large US corporations' CSR disclosure (sustainability reporting). The authors used the GRI database and Compustat to compile their results. Iyer and Lulseged (2013) found that the company's market value was positively correlated with CSR disclosure in family companies, and in non-family companies, the relationship is negative.

Gavana et al. (2017a) investigated how family control affects the disclosure of their CSR activities. The authors found that family companies are more exposed to the media than non-family companies and tend to pay attention to disclosing sustainability reports, especially when a founder company member is on the corporate board of directors or is a chief executive of the company. Cabeza-García et al. (2017) found that the ownership of family businesses harms the commitment to CSR activities and disclosure of such activities in Spain. However, they also determined that the ownership of the second-largest shareholder in the company may mitigate this effect.

Furthermore, Gavana et al. (2017b) studied how family businesses in Italy used sustainability reports to facilitate access to external financing sources for their businesses. The authors tested the company's attitudes regarding disclosure in the sustainability reports when issuing bonds and shares through a sample of 230 Italian-listed companies. One of the most important results of this study is that a family's control has no effect on disclosure in the case of issuing bonds. However, it has a moderate effect in the case of issuing shares. While, Martínez-Ferrero et al. (2018) used international data to test the effect of family control on information asymmetry established by CSR disclosure. They determined fundamental differences between family and non-family companies in terms of performance, governance, management, and others. Finally, Gavana et al. (2018) tested the impact of CSR disclosure on revenues in family and non-family companies since disclosure requires communication between the company and its

Table 7. The impact of top 10 authors regarding sustainability literature.

Author	H_index	TC	NP	PY start	References
1. Gavana G	4	65	4	2017	(Gavana et al., 2017a, 2017b, 2018)
2. Gottardo P	4	65	4	2017	(Gavana et al., 2017a, 2018, 2019)
3. Moisello AM	4	65	4	2017	(Gavana et al., 2017a, 2017b, 2018)
4. Cuadrado-Ballesteros B	2	62	2	2015	(Cuadrado-Ballesteros et al., 2015; Rodríguez-Ariza et al., 2017)
5. García-Sánchez IM	2	62	2	2015	(Cuadrado-Ballesteros et al., 2015; García-Sánchez et al., 2014)
6. Rodríguez-Ariza L	2	62	2	2015	(Cuadrado-Ballesteros et al., 2015; Martínez-Ferrero et al., 2018; Rodríguez-Ariza et al., 2017)
7. Adhariani D	1	6	2	2019	(Hajawiyah et al., 2019; Nirmala et al., 2020)
8. Biswas Pk	1	3	2	2018	(Biswas et al., 2019; Biswas et al., 2022)
9. Roberts H	1	3	2	2019	(Biswas et al., 2019; Biswas et al., 2022)
10. Whiting Rh	1	3	2	2019	(Biswas et al., 2019; Biswas et al., 2022)

Source: Authors compilation.

Table 8. Top contributing countries.

Country	Authors appear (times)	Total citations	Average article citations
SPAIN	68	1097	52.24
USA	37	280	31.11
ITALY	36	260	21.67
CHINA	27	287	28.70
CANADA	21	160	40.00
FRANCE	18	225	45.00
GERMANY	17	429	61.29
PAKISTAN	14	46	11.50
INDONESIA	13	23	7.67
AUSTRIA	12	23	7.67

Source: Authors compilation.

stakeholders, which aims to support stakeholders' interests and needs. The authors noted a positive effect of such disclosure in family-owned companies, while a negative effect was noted in non-family-owned companies.

5.4.3 Core authors, affiliation, institutions, and countries

The core authors, affiliations, organizations, and countries noted in the CSR disclosures in family firms literature are presented in this section. In this field, ten authors have had a greater influence, and these authors are identified in Table 7. The h-index is used to determine the author's ranking. *Gavana G*, *Gottardo P* and *Moisello AM* are the top three authors in this field with the highest contributions of 4 research papers, respectively, shown in the last column of Table 7. Likewise, the contributions of other authors are reported in Table 7.

Table 8 below displays the top contributing countries in terms of authors' appearances. Spain's authors have the highest contributions in 68 times among our selected studies, and their publications have 1097 citations. The authors from the USA appeared 37 in our selected studies and have 280 citations. The third most contribution is from authors from Italian institutions, with 36 appearances and 260 citations.

Table 9 lists the most important affiliations of authors among our selected studies. The *University of Salamanca* is the most contributing institution, as this affiliation

Table 9. Most relevant affiliations.

Affiliations	Articles
University of Salamanca	13
University of Manitoba	6
University of Otago	6
Government College University	5
Johannes Kepler University Linz	5
Universidad De Salamanca	5
Universitas Indonesia	5
University of Granada	5
Pforzheim University	4
Technical University of Cartagena	4

Source: Authors compilation.

Table 10. The country of the corresponding author.

Country	Articles	Freq	SCP	MCP	MCP ratio
Italy	7	0.3333	5	2	0.286
Spain	3	0.1429	3	0	0
USA	3	0.1429	1	2	0.667
Indonesia	2	0.0952	2	0	0
New Zealand	2	0.0952	2	0	0
China	1	0.0476	0	1	1
France	1	0.0476	0	1	1
Germany	1	0.0476	0	1	1
United Kingdom	1	0.0476	0	1	1

Source: Authors compilation.

appeared 13 times among our selected studies. The *University of Manitoba and the University of Otago* are the second and third-ranked institutions, with six appearances each in the selected studies. The other countries ranked below have five or fewer appearances in this field.

The data for the top ten corresponding author countries are presented in [Table 10](#), with Italy at the top. Authors from Italy have seven publications, 5 of which have authors from single-country (SCP) and 2 of which have authors from multiple countries (MCP). Spain is in second place, with three articles of correspondence, 3 SCP, and 0 MCP. In the United States, there are three publications as corresponding authors, 1 SCP and 2 MCP. With the correspondence of 2 research papers for sustainability disclosure in family firms, Indonesia is in fourth place. With two corresponding research publications, New Zealand is ranked fifth.

6. Conclusions

The current study has systematically analysed the conceptual structure of the sustainability disclosures in family firms literature. Our study the three important findings. First, the co-occurrence network of keywords analysis yields three clusters: CSR disclosures and corporate governance in family firms of emerging economics (red cluster), while red and green clusters focus on environmental performance, earnings management, and corporate governance in family firms. Second, the thematic map shows the following themes: 1) *Emerging or decreasing themes* reflect research on the environmental performance and role of top leaders in family firms; 2) *basic or transversal themes* highlight CSR disclosures and corporate governance issues in the family

firms; 3) *niche* themes are on CSR performance in family firms; 4) *motor themes* show the determinants of sustainability disclosures in family firms research. Finally, thematic evolution shows that from 2018 to 2020, hot issues are socio-emotional wealth and sustainability issues in family firms, while research moves to environmental performance in family firms in recent years (2021-2022).

Our study has also highlighted the influential aspects of sustainability literature in family firms. According to our analysis, *Journal of Business Ethics*, *Sustainability* (Switzerland), and *Corporate Social Responsibility and Environmental Management* are the top three publications with the greatest influence on sustainability literature. Family firms, CSR, and Family Ownership, are most frequently used in names, author keywords, keywords plus, and the abstract. According to the literature, the authors who have the biggest impact on sustainability are Gavana G, Gottardo P, and Moisello AM. The University of Salamanca is the most significant association for publishing literature with sustainability. Authors from Italy have seven publications, 5 of which have authors from single-country (SCP) and 2 of which have authors from multiple countries (MCP).

6.1. Limitations and future research agenda

Our study has several limitations, which suggest directions for future research. First, our study is limited to narrative and bibliometric aspects of sustainability literature in family firms. Thus, we urge the upcoming review study to conduct a meta-analysis of sustainability disclosures and financial outcomes literature on family firms. Second, our study is more useful for academicians and might be ineffective for regulators and policymakers as it only portrays the literature's research trends and influential aspects. A meta-analytical study is more effective for policymakers and regulators (Bilal et al., 2018).

Our findings from the conceptual structure analysis drive several directions for future research. First, the thematic map findings and thematic evolution highlight the current focus on environmental performance in family firms. Therefore, we urge the upcoming studies to contribute more to the environmental aspects of CSR due to the adverse impact of climate change. Carbon reduction commitments of family firms are the key questions of regulators and academicians in view of carbon neutrality and sustainable development goal 13 climate action. Another promising area for analysing the greenwashing of environmental disclosures by family firms. The influential aspects of our study show that there is a lack of collaboration. Future research would have more cross-national collaboration and cross-country research.

Disclosure statement

No potential conflict of interest was reported by the author.

Note

1. We appreciate your suggestion. In the revised manuscript, we have explained: One of the most popular definitions, offered by Chen et al. (2008), defines a family firm as a business

where the original founders of the family still retain key managerial positions, sit on the board of directors, or have the authority to act as shareholders. Poza (2013) claimed that there are more than 21 definitions of family firms, and the following are the main characteristics that define the family firm: 1) ownership control by 1 or 2 family members or partnership of families; 2) family members have a strategic influence on firm's management; 3) firm gain competitive advantage from unique sources of the interaction of family and management; 4) owner aims to operate the family business for an indefinite period.

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