

A SYSTEMATIC REVIEW OF THE LITERATURE AND BIBLIOMETRIC ANALYSIS OF GOVERNANCE OF FAMILY FIRMS

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Abstract. Governance in family firms can profoundly influence corporate behavior and performance. Recently, family firm governance (FFG) has attracted extensive attention as increasing empirical research has been published. However, few studies have attempted to map the global research on this growing field. In this paper, a comprehensive literature review and bibliometric analysis are conducted to provide an overview of the FFG. A total of 626 relevant studies from the Web of Sciences Core Collection database between 1998 and 2020 are analyzed. First, based on a literature review by identifying the classification of FFG and topics related to family governance, an overall conceptual structure is proposed. Second, the performance and influence of journals, authors and papers are analyzed by descriptive bibliometric analysis. Finally, with assistance from the CiteSpace and VoS viewer tools, the co-authorship, co-occurrence and co-citation network are presented to display the social and intellectual structure and find the hotspots. The findings of this study help to objectively understand the evolution of FFG and to capture potential research directions.

Keywords: family firms governance, family business, family firms, bibliometric analysis, literature review, science mapping.

JEL Classification: M100, M210.

Introduction

Family firms make a great contribution to the growth of wealth of economies worldwide. Two-thirds of all globally operating companies are estimated to be family companies (Martinez-Sanchis et al., 2019). Family Firm Governance (FFG), as a key determinant of corporate behavior and performance, has attracted growing attention from scholars. FFG mechanisms consist of formal (e.g., board of directors, family constitutions) and informal (e.g., family values, social norms) rules, practices and processes that originate from within or outside of family firms (Chrisman et al., 2018). Effective FFGs can balance and align the interests of

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their stakeholders, promote the rationalization of the ownership structure and ensure the inheritance of corporate property between family descendants, so as to maintain the competitive advantage of family enterprises (Chiner, 2011).

Since the first article discussing FFG mechanisms was published in *Harvard Business Review* in 1998 (Magretta, 1998), governance in family firms had drawn wide attention from the academic community, and a growing number of empirical studies had appeared in the past two decades (Qin et al., 2021). The main topics related to family business governance including firm performance (Aldamen et al., 2020), succession planning (Cucculelli & Micucci, 2008), board size (Jaskiewicz & Klein, 2007), gender, social networking relationships (Acquaah, 2012) and human resource structure (Sanchez-Marin et al., 2019). Faced with numerous empirical investigations concerning FFG, it is necessary to identify the current status and explore the development trends of this field. Several scholars preliminarily summarized related findings with reviews of the literature. Chrisman et al. (2018) integrated 6 articles and 4 commentaries on formal and informal governance mechanisms in family firms and found that family governance can profoundly influence firm performance. Cortes and Botero (2016) summarized governance in family firms from Ibero-American countries that devoted to understanding structures and processes associated with business and ownership systems. Pindado and Requejo (2015) covered more than 350 articles published in 37 top finance and management journals to analyze FFG system from performance, ownership structures and governance devices. Suess (2014) proposed a conceptual model by identifying 8 factors related to family governance from 19 articles published in 9 different journals.

However, although these reviews of the literature analyzed some of the empirical articles related to family governance and drew some representative conclusions, there are still several limitations. First, the last published relevant literature review was in 2018 (Chrisman et al., 2018), which did not cover the recent findings of the FFG. Second, previous literature reviews only analyzed a small number of articles (less than 360), mainly from a certain region or some influential journals. As a result, the conclusions may be relatively limited. Third, all of the related literature reviews did not use bibliometric tools, so the analysis results were not comprehensive enough. To be specific, these papers mainly focus on the qualitative analysis of the governance structure and impact factors of family businesses, but no scholars use bibliometric tools like CitSpace and VoS viewer to conduct a quantitative and visual analysis of keyword co-occurrence, author co-authorship, or co-citation network.

Bibliometric analysis, as a complement to traditional qualitative literature review, is an effective way to describe, evaluate and monitor a given subject or a specific journal using quantitative mathematical and statistical approaches (Tartaglione et al., 2019). It can not only analyze the output and impact of articles, journals, authors, institutions and countries (Noyons et al., 1999) but also identify the mapping of the intellectual and conceptual structure of a journal or research field by analyzing co-citations, co-authorship and co-occurrence network with the help of visualization tools (Merigo et al., 2018). As a result, it provides a useful way to overcome the limits of traditional literature reviews, which may lack rigor and be susceptible to bias by researchers (Rialti et al., 2019; Wang et al., 2022). At present, bibliometric methods have been widely used in various categories, such as the development of journals (Wang et al., 2020), research trend detection (Dabic et al., 2020), research topic clustering

(Kraus et al., 2014), author and institution cooperative analysis (van Leeuwen et al., 2016) and so on. Moreover, some scholars have applied these methods to analyze family business issues and related topics covering family business succession, entrepreneurship, the role of women in a family economy, family firms and sustainability. However, until now, no one has conducted a bibliometric analysis on family business governance.

Therefore, this paper aims to employ a systematic review to identify the key research areas, current status and future directions of FFG. To the best of the author's knowledge, it is the first to systematically and comprehensively analyze the current situation and future trend of FFG by combining bibliometric methods and literature review. The contributions are listed in the following aspects:

1. A systematic review of the literature is provided to describe the definition and classification of FFG and to explore the association between FFG and other issues related to family governance in the previous literature. As a result, a conceptual structure model is proposed to help researchers better understand the overall structure of FFG.
2. Descriptive bibliometric analysis is presented to show the knowledge structure of governance in family firms. In particular, the structure of the publication and citation of the papers, the most influential journals and categories, the most productive and cited authors and the highly cited papers are analyzed. Such information allows FFG researchers to quickly capture the main topics and research trends, journals and authors in the evolution of family business governance.
3. With the help of CiteSpace and VoS viewer tools, science mapping analysis is presented, including a co-authorship, co-occurrence and co-citation networks. It provides later researchers more informed understanding of the development of FFG and where FFG expertise can be found.

The structure of this paper is as follows. Section 1 provides a review of the literature on previous FFG research. In Section 2, the methods and data sources for bibliometric analysis are introduced. Section 3 illustrates some general observations of FFG using some widely accepted bibliometric indicators. Section 4 further analyzes the results of the co-authorship network, co-citation network and keyword co-occurrence network. Section 5 presents the discussions of FFG. Finally, the conclusions are summarized.

1. Review of the literature

1.1. The definition and classification of FFG

FFG, also can be regarded as family business governance, is a system of processes, practices and structures that are put in place at the highest level of the business, family and ownership (Suess, 2014). It consists of formal and informal mechanisms that can emanate from inside or outside of the company to control firm behavior in a way that balances and aligns the interests of its stakeholders (Chrisman et al., 2018). That is to say, FFG can be divided into two dimensions: Whether FFG is formal and where the mechanisms originate. On the one hand, governance in family firms can be formal or informal. Formal FFG is codified by policies, laws, regulations and rules, while informal FFG is indicated by pressures for conformance

or accommodation to the norms and values. On the other hand, FFG can be divided into internal governance mechanisms and external governance mechanisms. Internal governance mechanisms are the most commonly studied object among FFG, and many people carry out research on business, ownership and family subsystems (Su & Lee, 2013). External governance mechanisms from outside the company are also important for standardizing firm behaviors (Park & Shin, 2016). In any social and economic background, internal and external governance mechanisms coexist and can influence each other (Jo & Harjoto, 2011).

Magretta (1998) proposed that the family governance mechanisms consisted of family Council, family assembly, family constitution and board of directors in 1998. Subsequently, many researchers studied the classification of FFG. Some of them classified FFG from business, family and ownership aspects (Suess, 2014), while others categorized it by formal/informal governance mechanisms or inside/outside governance mechanisms (Chrisman et al., 2018; Mazzelli et al., 2018). This paper summarizes the common classifications of FFG from previous literature, shown in Figure 1. There are four quadrants (aspects) and 15 forms, and the first quadrant means the formal internal governance mechanisms, including family offices (Welsh et al., 2013), family constitutions (Rodriguez-Garcia & Menendez-Requejo, 2020), family foundations (Lungeanu & Ward, 2012), board of directors (Bammens et al., 2008), CEO and managements (G. Chen et al., 2021). The second one represents the formal external governance mechanisms, such as legal and regulatory regimes (Haw et al., 2010), policies (Singal & Gerde, 2015) and code of conduct (Singal & Gerde, 2015). The third means the informal external governance mechanisms, including social norms (Carney, 2005), cultural values (Dinh & Calabro, 2019), political connections (Gao et al., 2019) as well as other family firms’ behaviors (Mazzelli et al., 2018). The fourth indicates the informal internal governance mechanisms, covering family values (Aldamen et al., 2020), social networks within the family

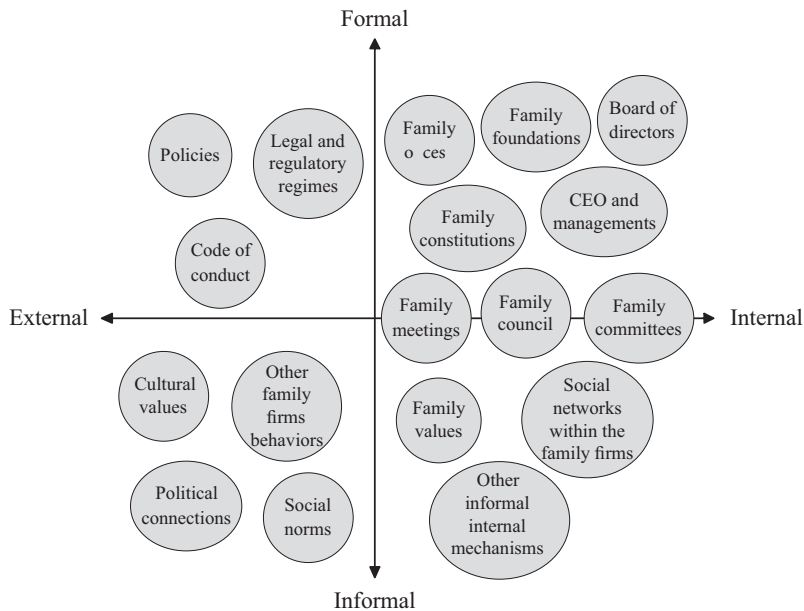


Figure 1. The classification of FFG

firms and other informal internal mechanisms. It is worth noting that family meetings, family councils and family committees can be either formal or informal internal governance mechanisms (Gonzalez-Cruz et al., 2020).

Among all of the forms of the FFG, the four most prevalent FFG forms are family meetings, family councils, family constitutions and the board of directors. Family meetings are the simplest and most common form of family governance mechanisms, which are formal or informal assemblies of family members to discuss family business issues. Family councils play a crucial role in FFG, as their primary function is gathering a group of family members and discussing matters concerning the family’s involvement in the business (Gnan et al., 2015). Both family meetings and family councils are different in different companies according to their meeting frequency, membership policies and the topics covered (Suess, 2014). Family constitution also refers to family protocol, family creed, or family agreement (Berent-Braun & Uhlaner, 2012), which is the code of conduct that family members must follow. It is a normative agreement that includes a set of rules and procedures to govern family business relationships and is signed and ratified with the collaboration of a large group of family members to reduce the potential conflict within the business family (Arteaga & Menendez-Requejo, 2017). The board of directors is usually elected by the shareholders at an annual general meeting, which has legal authority and responsibility for the direction and performance of the business (Gallo & Kenyon-Rouvinez, 2005). The board has the main functions of monitoring managerial behaviors and providing resources and expertise to top managers (Bammens et al., 2011).

1.2. The association between FFG and other related topics

By reviewing and analyzing theoretical and empirical studies related to governance in family firms, this article constructs an overall conceptual structure of FFG. As shown in Figure 2,

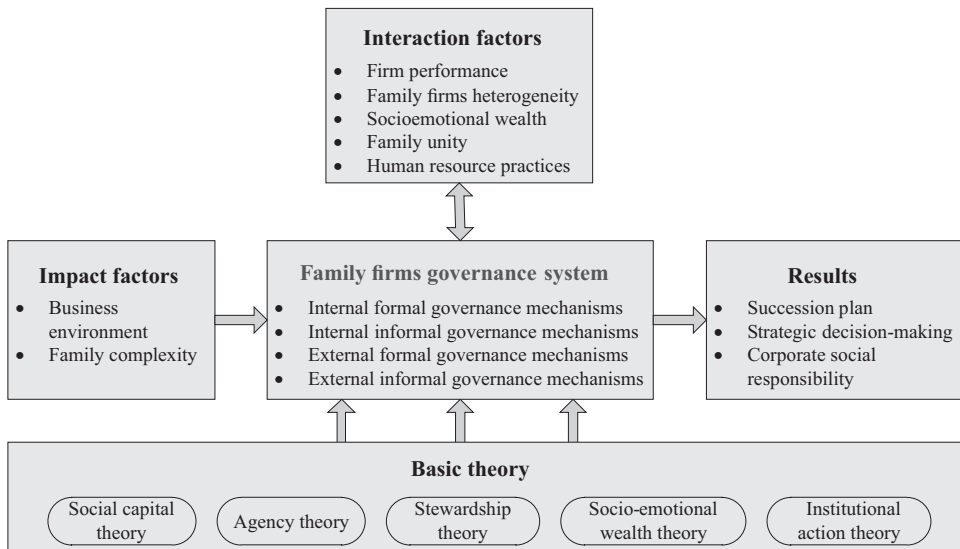


Figure 2. The overall conceptual structure of FFG

based on the classification of FFG system in Section 1.1, we introduce FFG-related topics from basic theory, impact factors, interaction factors and results.

In the FFG research field, the basic theory includes agency theory (Nordqvist et al., 2014), stewardship theory (Lin & Wang, 2021), socio-emotional wealth theory (Lin & Wang, 2021), social capital theory (Alonso et al., 2020) and institutional action theory (Sievinen et al., 2020). Based on these theories, researchers have carried out a wide range of empirical studies on a host of family business-related issues, such as firm performance, strategic decision-making, succession plan, family unity and so on. Suess (2014) reviewed some of the family governance-related topics in 2014, but there have been many new studies in recent years. This article further summarizes the related issues of FFG and divides these issues into three categories, namely impact factors, interaction factors and results. Impact factors refer to changes in these variables that will cause a difference in the governance structure of the family business. Similarly, results represent that the variation of the FFG structure may lead to different outcomes. Interaction factors are the issues that interact with FFG and influence each other, which cannot simply be regarded as impact factors or results. Take firm performance as an example; superior firm performance will have a positive impact on family business governance structures, while corporate governance practices like regular internal family meetings and effective board of directors will in turn affect company performance.

According to the previous literature, impact factors include business environment and family complexity. Interaction factors cover firm performance, family firms’ heterogeneity, socioemotional wealth, family unity and human resource practices. Results include succession plans, strategic decision-making and corporate social responsibility. Their connection to FFG is analyzed in Table 1.

Table 1. The factors associated with FFG

Classifications	Related Factors and Their Connection to FFG
Impact factors	<p><i>Business environment</i></p> <p>The external environment of family businesses like politics, law, culture, institution, technology and resource environment is changeable and the internal and external FFG mechanisms will adjust when facing different business challenges and opportunities (Dinh & Calabro, 2019). At different times, they are affected by corporate law, alternative financing options and inheritance law (Lubinski, 2011). Dinh and Calabro (2019) proposed that outside institutions can induce and enforce Asian family firms to choose different governance mechanisms. Therefore, an understanding of the external environment will help family businesses perform better in their governance structures.</p>
	<p><i>Family complexity</i></p> <p>Compared with younger family businesses, older ones are more inclined to use formal governance mechanisms such as family councils and constitutions. The more mature and complex the family business (e.g., increased business age, large family size, several family generations, the wider range of agency), the richer the form and content of family governance will be (Fahed-Sreih & Djoundourian, 2006).</p>

Continued Table 1

Classifications	Related Factors and Their Connection to FFG
Interaction Factors	<p><i>Firm Performance</i> There is no doubt that FFG practices have a notable impact on business performance; however, whether this impact is positive or negative is still controversial. For example, Aldamen et al. (2020) proposed that better corporate governance can contribute to better accounting and market performance during the global financial crisis, while some studies have also found that family governance has no significant effect or negative impact on performance (Chang & Shim, 2015; Jiang & Peng, 2011). Tower et al. (2007) assumed that superior firm performance could impact dividend payout policy, distribution of shares among family members, or the appointment of family members. Overall, corporate performance and family business governance have a bidirectional character.</p>
	<p><i>Family Firm Heterogeneity</i> On the one hand, family business is heterogeneous due to the difference in the extent and mode of internal FFG, such as family involvement in management and ownership (Michiels et al., 2015). On the other hand, Daspit et al. (2018) suggested that FFG was a primary source of family business heterogeneity. Therefore, there is an interaction between FFG and family heterogeneity.</p>
	<p><i>Socioemotional wealth</i> Socioemotional Wealth refers to nonfinancial aspects of the firm that meet the family's affective needs, like the family's welfare and emotional attachments (Gomez-Mejia et al., 2011). It plays an important role in the governance process; firm managers are more inclined to make decisions to reduce the loss of social-emotional wealth when dealing with governance issues (Bauweraerts & Colot, 2016).</p>
	<p><i>Family unity</i> An important goal of family governance is to consolidate family unity and reduce conflicts. To reduce the anger and jealousy among family members, clear values and standards are needed, preferably written standards (e.g. family constitution) that are conducive to abilities, qualifications and merits. Brenes et al. (2011) believed that mechanisms such as family committees and family agreements can help improve family cohesion.</p>
	<p><i>Human resource practices</i> For one thing, human resource professionalization, such as the establishment of advisory committees and the participation of nonfamily professionals, can contribute to standardizing family business governance and improving corporate performance. On the other hand, internal and external governance systems play an important role in human resource activities. The balance between family governance supervision and collaboration mechanisms can affect employee extra-role behavior in family firms (Eddleston et al., 2018). Obviously, there exists a bidirectional relationship between human resource practices and FFG.</p>
Results	<p><i>Succession plan</i> Family governance plays a vital role in business succession planning. Umans et al. (2020) indicated that succession planning in family firms was influenced by family governance and business practices. Yeh and Liao (2020) found that firms with higher levels of ownership and management involvement in controlling families were more likely to carry out family succession. Therefore, it can be found that FFG can promote the succession planning process.</p>

End of Table 1

Classifications	Related Factors and Their Connection to FFG
Results	<p><i>Strategic Decision-Making</i> Miller et al. (2013) proposed that informal governance rules applied to a family firm’s decision-making process can play many roles. Tasavori et al. (2018) advised that family members and board members could contribute to strategic decision-making in emerging market family firms. Additionally, Evert et al. (2018) suggested that the interaction of ownership and family involvement in management and board of directors would affect the initial entry into the international market. In general, heterogeneous governance structures will have an impact on strategic behavior.</p>
	<p><i>Corporate social responsibility (CSR)</i> Effective governance in family firms would have a good performance in corporate social responsibility. Through empirical research, Lopez-Gonzalez et al. (2019) demonstrated that a high presence of family members in the management team and the board of directors could contribute to the socially responsible behavior of family firms. The choice of CSR is positively related to internal and external firm governance mechanisms, including board independence, board leadership and institutional ownership (Jo & Harjoto, 2011). Although few studies implied that the impact of FFG was weak on CSR choices, which may be affected by different governance factors and measure processes (Li, 2015).</p>

2. Methodology and data source

2.1. Methodology

Based on the literature review and the proposed overall conceptual structure of FFG, this document further uses bibliometric methods with visualization tools to analyze the current situation and future trends of FFG. Bibliometric analysis is an effective method to conduct quantitative research in specific fields or journals using statistical techniques (Alvarez-Betancourt & Garcia-Silvente, 2014). The widely accepted techniques for this analysis include bibliometric indicators and science mapping (Laengle et al., 2021). Therefore, this study first gives descriptive bibliometric analysis by using some influential indicators, and then carries out a science mapping analysis with the support of bibliometric visualization tools. The selected bibliometric indicators include the total number of publications (TP), the total number of citations (TC), the average number of citations (AC) and the journal impact factors (IF). All are widely accepted and recognized bibliometric indicators for performance analysis, which allow us to evaluate the influence and productivity of articles, journals, authors, institutions and countries (B. Li & Xu, 2022; Pan et al., 2018).

Science mapping is an important research topic in bibliometrics (Cobo et al., 2011). It aims at displaying the conceptual, social, or intellectual structure of a research field, specific disciplines, or scientific domains (Small, 1999). Many bibliometric tools have been used for science mapping analysis in the scholarly community, such as CiteSpace, VoS viewer, BibEexcel and HistCite. And each of them shows different functionalities and limitations (Cobo et al., 2011). In this study, CiteSpace and VoS viewer are chosen to perform a comprehensive and deep analysis of FFG. Both of them are widely used and free software that can handle

data from the Web of Science, Scopus, or PubMed flexibly. VoS viewer has a powerful function in citation, co-authorship, co-occurrence, co-citation and bibliographic coupling analysis by providing 4 views, including label view, density view, cluster density view and scatter view (Modak et al., 2020). CiteSpace is a software tool developed to detect, analyze and visualize patterns and trends in a knowledge domain (Wang et al., 2020). Compared with the VoS viewer, CiteSpace has a more powerful function of data preprocessing and spectral clustering and citation burst detection (C. M. Chen, 2006). Therefore, this paper uses VoS viewer and CiteSpace to complete the science mapping analysis together.

2.2. Data source

In the data collection process, 5 steps are used to derive the most influential researchers and studies on FFG. There are defining the search terms, selecting the databases, determining the search criteria, initial search results and refining the search results.

Step 1: Define the search terms. By considering both the family firms and corporate governance research field, we combined four different search terms, including:

- “family firm *” AND governance;
- “family business *” AND governance;
- “family corporate*” AND governance;
- “family governance”.

Step 2: Select the database. In this paper, we use the Web of Sciences (WoS) Core Collection database to derive the original data. WoS is the oldest and most widely known database in academics and makes many high-quality journals and publications available around the world (Falagas et al., 2008). And most bibliometric studies derived the original information from the WoS Core Collection database (Müller et al., 2018; Torres-Salinas, 2020).

Step 3: Determine the search criteria. To start with, we try to use “topic” to search our terms as some researchers did in the WoS Core Collection database (Alayo et al., 2021; Han et al., 2020), and find that there are more than 2000 publications. But most of them are irrelevant to FFG. For example, one of the articles’ Corporate entrepreneurship in family firms: A family perspective” is selected (Kellermanns & Eddleston, 2006), but its content does not focus on our topic, and the FFG is mentioned only in the list of references. So we finally choose title, abstract and keywords as the search criteria.

Step 4: Initial search results. Using the search “title, abstract, keywords” in the WoS Core Collection database, we select publications covering the search terms mentioned above and get 838 results. All data collections were completed on December 18, 2020.

Step 5: Refine the search results. First, we remove publications that appear more than once. Eliminating these duplications leaves 667 unique publications. Then, the document types are set as article, review or processing paper (except editorial material, book review and chapters of books), and 19 studies are excluded. Finally, we include only English-language publications.

Figure 3 summarizes the data collection process. By defining the search demands in WoS Core Collection database and filtering the unrelated publications, 626 publications related to FFG are obtained for further analysis.

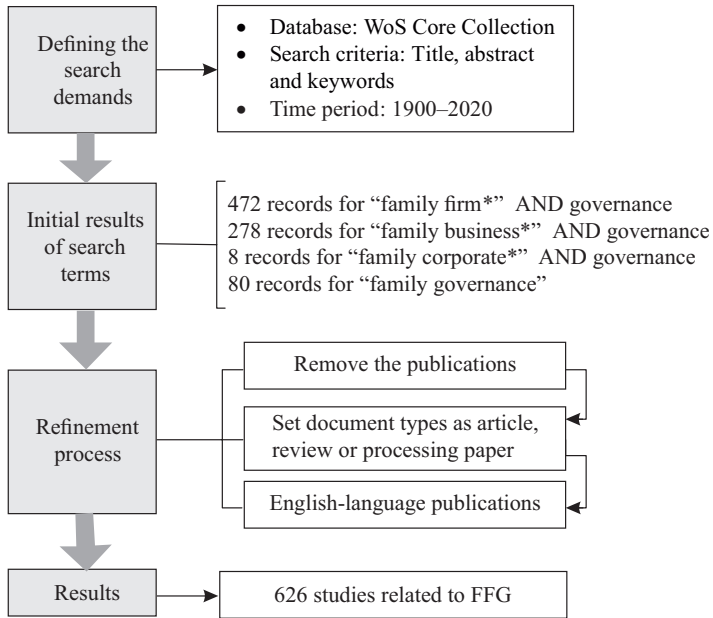


Figure 3. The data collection process

3. Descriptive bibliometric analysis

To offer an overview of FFG research, we performed a descriptive bibliometric analysis using several productivity and impact indicators. In this section, the publications and citation structure, the most influential journals and categories, the most productive and cited authors and the high-cited papers are presented in detail.

3.1. Publication and citation structure

As shown in Figure 4, the first and second documents related to FFG were published in 1998 according to the data in the WoS core collection. It presents an overall upward trend in the number of publications from 1998 to 2020, and there are some fluctuations. Specifically, the number of articles increases gradually from 1998 to 2014 and reaches a peak of 82 in 2015, accounting for 13.1% of the total numbers. From 2015 to 2020, research on FFG attracts a growing number of scholars’ attention, and the annual number of publications exceeds 50. Therefore, it can be predicted that in the next few years, the research on FFG will continue to be widely concerned by the scientific community.

The contribution of publications and their influence on the development of FFG can be measured by the number of citations. In this paper, 626 documents received 16713 total citations, with an average of 26.7 citations per publication. Figure 5 presents the trend of total citations. It is shown that the first citation came up in 2003 and citation times have increased gradually since then. It makes sense because the number of FFG publications in this area presents an overall upward trend.

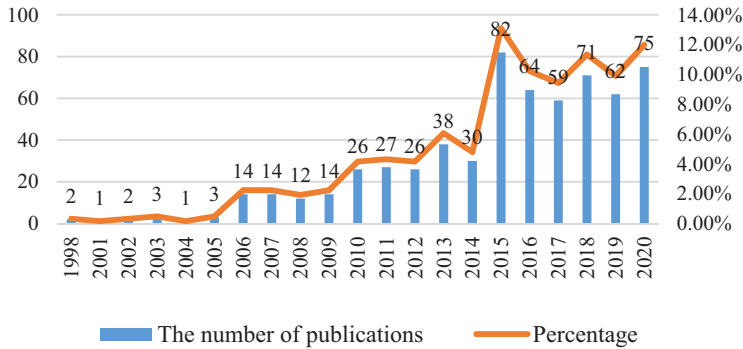


Figure 4. Distribution of papers by publication year

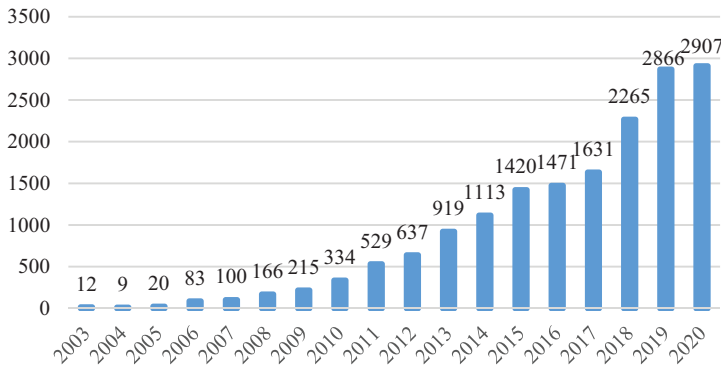


Figure 5. Distribution of citation times per year

3.2. Influential journals and subject categories

All 626 publications are analyzed, covering 281 journals and 49 subject categories. The top 10 journals that published the most articles on family business governance are listed in Table A1 in Appendix. *Journal of family business strategy* and *Corporate governance: an international review* are the most popular journals in this field, with 36 and 35 papers published, accounting for 5.751% and 5.591% of TP, respectively. Then, the *Journal of Family Business Management*, *Family Business Review* and *Journal of Business Research* published more than 20 related articles, which are 26, 24 and 21, respectively. Next, there are five journals that published more than 10 articles, which can be regarded as influential journals in this field. Among them, *Entrepreneurship theory and practice* has the highest IF2019 of 10.750 and ranks 2 of 152 in the Business category.

These publications refer to 49 research categories. Figure 6 shows the top 12 categories and their distributions. Most of them focus on four areas, including Management (320), Business (310), Business Finance (140) and Economics (82). It indicates that most of the theoretical and application studies of FFG have been involved in business management, economics and finance.

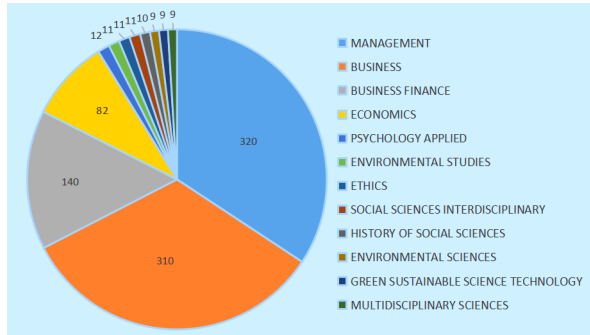


Figure 6. The top 12 subject categories

3.3. Most productive and cited authors

The total number of 626 articles was written by 1,253 authors, with an average of 2 authors per article. Among them, 220 authors wrote 2 or more papers, and 182 have been cited more than 50 times. Figure 7 lists the top 10 authors by the number of published articles. Miller Danny is the author who had the highest output (19) and received the highest number of citations (2498). Next is Le Breton-Miller Isabelle, who published 16 related articles with a total number of 2,335 citations. It is worth noting that although Carney Michael published seven articles, he received 1096 citations, and the average number of citations per article is the highest (157), indicating that his articles have a great influence on the FFG field.

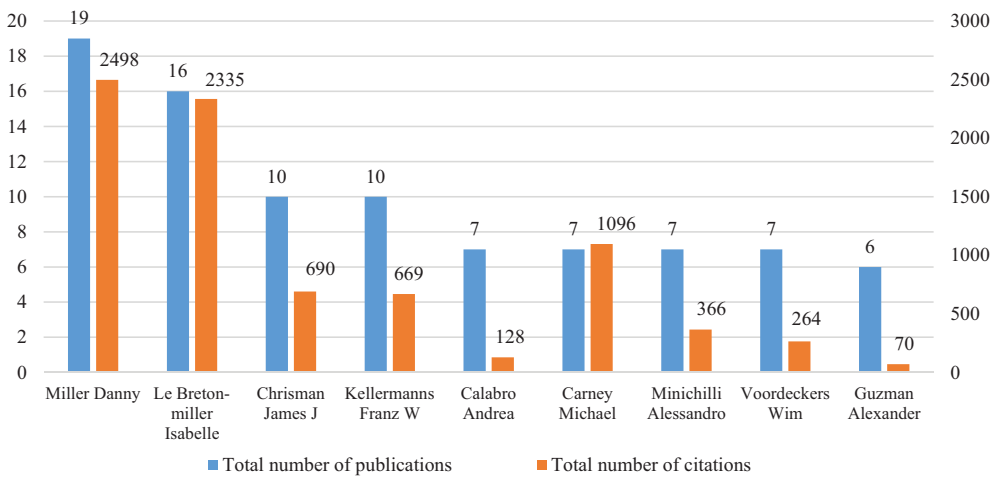


Figure 7. The most productive and cited authors

3.4. Highly cited papers

The most cited paper is usually the one that received widespread popularity and recognition in a field. Table 2 lists the 12 highly cited publications related to FFG by presenting

their title, source, published year and TC. These articles mainly focus on family governance internal systems (i.e., agency, board structure, succession and family ownership) and external impact factors (i.e., corporate competitive advantage, performance, disclosures, reputations and socio-emotional wealth). The most influential article is *Agency relationships in family firms: Theory and evidence* (Schulze et al., 2001), with 1,047 total citations. The article *The Bind That Ties: Socioemotional Wealth Preservation in Family Firms* (Gomez-Mejia et al., 2011) published in *Academy of Management Annals* in 2011, has the highest annual citation, and it also is evaluated as a highly cited paper. In addition, articles written by Carney (2005), Deephouse and Jaskiewicz (2013) are notable because these articles have high annual citations and are published in journals with high impact factors, which can be considered critical to the development of the family governance field.

Table 2. The 12 highly cited publications

Rank	Title	Source	Year	TC
1	Agency relationships in family firms: Theory and Evidence	Organization Science	2001	1047
2	The Bind That Ties: Socioemotional Wealth Preservation in Family Firms	Academy of Management Annals	2011	689
3	Corporate Governance and Competitive Advantage in Family-Controlled Firms	entrepreneurship Theory and Practice	2005	661
4	Board composition: Balance of family influence in S&P 500 firms	Administrative Science Quarterly	2004	530
5	Are family firms really superior performers?	Journal of Corporate Finance	2007	515
6	Family governance and firm performance: Agency, Stewardship, and Capabilities	Review of family business	2006	472
7	Corporate disclosures by family firms	Journal of accounting & economics	2007	396
8	Family ownership and firm performance: Empirical Evidence from Western European Corporations	Journal of Corporate Finance	2006	379
9	Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability	Entrepreneurship Theory and Practice	2006	345
10	Lost in time: intergenerational succession, change, and failure in family business	Journal of business venturing	2003	281
11	Board Structure and Firm Performance: Evidence from India's Top Companies	Corporate governance-an international review	2009	262
12	Do Family Firms Have Better Reputations Than Non-Family Firms? An Integration of Socioemotional Wealth and Social Identity Theories	Journal of Management Studies	2013	252

4. Science mapping analysis

The science mapping analysis aims to show the structural and dynamic organization of knowledge in scientific research fields (Zupic & Cater, 2015). More specifically, co-authorship network analysis is used to show how authors, institutions, or countries relate to others. Co-occurrence analysis of keywords represents relations between concepts in a set of publications and finds popular research topics. Co-citation analysis of references and sources authors can identify the important knowledge bases of the research field and excavate the relevance of publications.

4.1. Co-authorship network

Co-authorship analysis aims to find the relatedness of items based on their number of co-authored publications and generate the knowledge domain map of main research authors, institutions and countries (Mao et al., 2020). Next, we mainly analyze the national cooperation network and institutional cooperation network.

The mapping of countries/regions cooperation is shown in Figure 8. The connection of nodes indicates the cooperation relationship between different countries/regions. The thicker the connection, the closer the cooperation is. The size of the nodes represents the number of articles published in different countries/regions. The larger the node size, the more articles appear. The top 5 productive countries in terms of TP are the USA (152), Italy (84), Peoples R China (78), Spain (62) and Canada (59). Additionally, the rose red circles represent nodes with high centrality and nodes with a centrality value greater than or equal to 0.1 can be regarded as key nodes (X. Li et al., 2017).

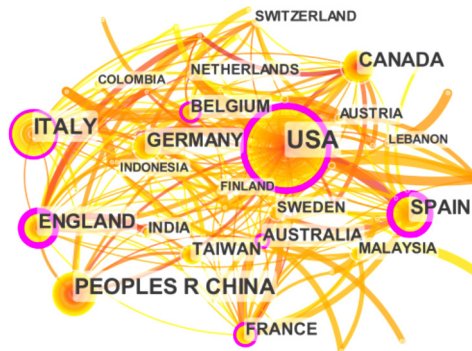


Figure 8. Co-authorship network of countries/regions

Table 3 presents the 10 most productive countries/regions in terms of their TC. The key nodes of these publications are England (0.38), USA (0.25), Spain (0.25), France (0.14), Italy (0.13) and Belgium (0.13), which means that the documents of these countries have a profound impact on the evolution of family business governance.

To analyze the production and cooperation of the affiliated institutions of all publications, we list the top 10 most productive institutions and their TP, TC, total link strength, start year and country in Table 4. The top 10 institutions contributed 142 articles. The most productive

Table 3. The most productive countries/regions

Rank	Country/region	TP	TC	AC	Centrality	Start year
1	USA	152	7788	51.24	0.25	1998
2	Italy	84	1534	18.26	0.13	2006
3	Peoples R China	78	1162	14.90	0.02	2006
4	Span	62	1621	26.15	0.25	2006
5	Canada	59	5119	86.76	0.08	2002
6	England	55	1045	19.00	0.38	2007
7	Germany	40	827	20.68	0.04	2007
8	Belgium	33	474	14.36	0.13	2002
9	France	33	854	25.88	0.14	2007
10	Tanwan	32	358	11.19	0.00	2008

institution is the University of Alberta (32), followed by HEC Montreal (22), Bocconi University (14), Mississippi State University (14) and Hasselt University (11). In terms of TC, three institutions have been cited more than 1000 times, including the University of Alberta (3659), HEC Montreal (2230) and Jonkoping International Business School (1147), which suggests that these institutions have profound impact on the development of governance in family firms. Meanwhile, the size of the total strength value of the link indicates the intensity of each institution's collaboration with other institutions. The higher the value, the closer the cooperation. Table 4 shows that the University of Alberta has the highest total link strength with 62, followed by Bocconi University (38) and HEC Montreal (30). As a result, these three institutions have high cooperation with others.

Table 4. The most productive institutions

Rank	Institution	TP	TC	Total link strength	Start year	Country
1	University of Alberta	32	3659	62	2002	USA
2	HEC Montreal	22	2230	30	2006	Canada
3	Bocconi University	14	824	38	2013	Italy
4	Mississippi State University	14	452	23	2007	USA
5	Hasselt University	11	250	33	2006	Belgium
6	Concordia University	11	154	24	2005	Canada
7	University of Witten/Herdecke	10	171	23	2015	Germany
8	University of North Carolina	10	284	8	2015	USA
9	Jonkoping International Business School	9	1147	16	2010	Sweden
10	WHU-Otto Beisheim School of Management	9	302	14	2012	Germany

4.2. Co-occurrence network

The co-occurrence network is based on counting and analyzing keywords, which can provide insights into the main topics and research trends since they are the most frequently used or influential words in the domain of FFG (Kamdern et al., 2019). In this paper, we collect a total number of 1978 keywords from all 626 publications to build the keyword co-occurrence visualization map by using VoS viewer. The occurrence threshold is set to 10 and some keywords are merged since they are synonyms. For example, “family firm” is replaced by “family firms”. The final maps result in 95 keywords and 6 clusters of different colors, shown in Figure 9. Cluster 1 (red) with “corporate governance” and “family firms” as the core; Cluster 2 (green) with “firm performance”; Cluster 3 (blue) with “socioemotional wealth” and “business”; Cluster 4 (yellow) with “corporate ownership” and “management”; Cluster 5 (purple) with “agency problems”; Cluster 6 (light blue) with “board composition” and “impact”. It is obvious that the keywords “corporate governance”, “family firms” and “corporate ownership” come up the most often, and related topics such as “performance”, “socioemotional wealth”, “agency problems” and “management” also have a relatively high incidence.

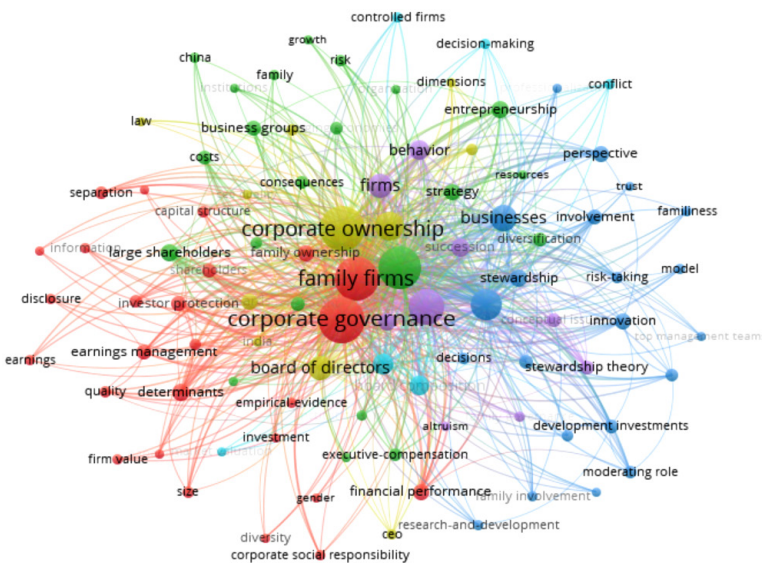


Figure 9. The co-occurrence network of keywords

In terms of keyword occurrence, the top 10 keywords are listed in Table 5. They are corporate governance (420), corporate ownership (390), family firms (361), firm performance (334), agency problems (235), socioemotional wealth (163), management (142), businesses (118), board of directors (91) and firms (87). Significantly, the top five terms have high total link strength; they are 3199, 2931, 2721, 2655 and 2020, respectively, which means that firm performance, ownership and agency problems are closely connected with family governance, which also are key components of the proposed conceptual structure of FFG. Besides, socioemotional wealth, as an important role in the governance process, has drawn wide attention from scholars in recent years.

Table 5. The top 10 keywords in the occurrence

Rank	Keywords	Cluster	Occurrences	Links	Total link strength
1	Corporate governance	1	420	92	3199
2	Corporate ownership	4	390	94	2931
3	Family firms	1	361	94	2721
4	Firm performance	2	334	94	2655
5	Agency problems	5	235	94	2020
6	Socioemotional wealth	3	163	92	1417
7	Management	4	142	91	1197
8	Businesses	3	118	89	983
9	Board of directors	4	91	85	802
10	Firms	5	87	82	554

4.3. Co-citation network

Co-citation refers to the presence of two or more documents, authors and journals in the list of references for the third document (Osareh, 1996). Co-citation analysis can help us find the core references, authors and journals that play a key role in the evolution of FFG. VoS viewer is used to analyzing the reference co-citation network. By setting the minimum number of citations of a cited reference as 80, 31 references meet the threshold of all 20,661 cited references. The results are presented in Figure 10. A node is a reference cited, and the size of the node represents its total number of citations. A link between two nodes indicates a co-citation relationship. The thicker the link, the more citations the reference has. The different colors represent different clusters, and there are two clusters. It can be found that the top three co-cited papers were published by Anderson and Reeb (2003), Villalonga and Amit (2006) and Jensen and Meckling (1976), which received 281, 261 and 258 co-citations, respectively.

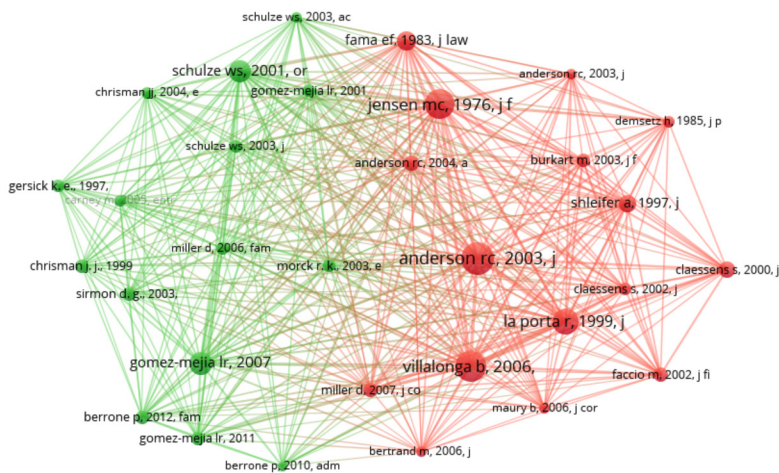


Figure 10. The reference co-citation network

Similarly, the source co-citation and author co-citation can be analyzed using VoS viewer. Table 6 lists the top 10 co-citation authors and co-citation sources. It is obvious that the family business review received the highest citation of 3527. Furthermore, Miller Danny, as the most productive author of FFG, is also the most cited author.

Table 6. The top 10 co-citation authors and sources

Rank	Source	TC	Author	TC
1	Family business review	3527	Miller, Danny	741
2	Entrepreneurship Theory and Practice	2455	Ronald C. Anderson	649
3	Journal of Financial Economics	2378	James J. Chrisman	611
4	Journal of Finance	1727	Luis R. Gomez-Mejia	579
5	Academy of Management Journal	1204	Rafael La Porta	413
6	Strategic Management Journal	1153	William S. Schulze	404
7	Academy of Management Review	902	Michael C. Jensen	403
8	Journal of Management Studies	889	Belen Villalonga	381
9	Journal of Corporate Finance	800	Eugene F. Fama	296
10	Administrative Science Quarterly	756	Shaker A. Zahra	288

5. Discussions

The results of this review paper indicated that FFG is a relatively new and promising field. The first related literature was published in 1998. Hundreds of FFG articles have been published in the last few years, so it can be predicted that governance in family firms will remain a research hotspot in the near future. FFG has been classified in a variety of ways in previous literature (Suess, 2014). Based on internal/external and formal/informal governance mechanisms, we have summarized the classification of FFG as four aspects and 15 forms, involving internal formal, internal informal, external formal and external informal governance mechanisms. The results show that internal formal governance mechanisms have been the hotspot and have published enormous related papers. More attention can be paid to other aspects of governance mechanisms in the future. Among all the 15 forms, family meetings, family councils, family constitution and the board of directors are the 4 most prevalent FFG forms.

As some studies suggested, there was a strong association between FFG and other family business issues. We have identified the main issues from three categories, including impact factors (e.g., business environment and family complexity), interaction factors (e.g., firm performance, family firms' heterogeneity, socioemotional wealth, family unity and human resource practices) and results (e.g., succession plan, strategic decision-making and corporate social responsibility). The overall conceptual structure of FFG proposed in this paper can fully consider the basic theory and the internal and external relationships of FFG.

Whether the influence of family business governance on corporate performance is positive, negative, or neutral has always been a hot and controversial topic pursued by scholars, and there has been no unified conclusion (Aldamen et al., 2020). There are many aspects worth studying when talking about family governance on firm performance. On the one

hand, governance mechanisms consist of many contents, such as board size, gender, percentage of independent directors, shareholding of directors and presence of nonfamily members on board committees. The influence of one or several factors on corporate performance is worth studying. On the other hand, besides financial performance, certain diverse financial and non-financial performances like social-emotional wealth, credit rating, brand value, environment performance, customer satisfaction and employee development also deserve to be analyzed (Srivastava & Bhatia, 2020).

In addition, the differences between the family business and nonfamily business governance are also a common concern of researchers. For example, compared to nonfamily firms in Bangladesh, the introduction of family governance and the 2006 Corporate Governance Guidelines in family companies noticeably increases the level of corporate social responsibility (Biswas et al., 2019). In addition, the influence of independent directors, board size and duality on the performance of family firms is significantly higher than that of nonfamily firms. And these governance mechanisms have a significant impact on agency costs for both family and nonfamily firms (Ibrahim & Samad, 2011). Thus, another promising avenue for future research could be the exploration in greater depth of the difference in governance practices between family firms and nonfamily companies.

Some studies have explored corporate governance practices, such as family ownership, independent risk management, board independence, institutional ownership and blockholders, which have played a key role in the current COVID-19 crisis (Jebran & Chen, 2021). However, it requires a deeper analysis of how different factors combined with family governance mechanisms can be effective in mitigating the adverse effects of the COVID-19 crisis.

The family-centered governance structure, ownership, management, succession planning and business make family firms unique and provide fertile ground for future research. In addition to the future research direction mentioned above, the following two aspects are worth further exploration. On the one hand, this paper divides FFG into 4 aspects and 15 forms, how each aspect affects the others and how different forms interact with each other deserves more attention. On the other hand, this paper explores the factors closely related to FFG from three aspects: impact factors, interaction factors and results. However, these factors are not single, but complex and mutually influence. For example, when family rules and family institutions complement each other and are in line with family complexity, family governance is positively correlated with corporate performance and any misfit may result in negative consequences (Gonzalez-Cruz et al., 2020). Of course, any single study is unlikely to be able to handle the full range of these dimensions. Therefore, when discussing the related issues at the core of FFG, multiple factors can be considered separately or in combination, and irrelevant variables should be well controlled, which will ultimately help reveal the true role of family business governance.

Conclusions

This paper presents a structured overview of the FFG literature. So far, it is the first to systematically and comprehensively analyze the current situation and future trends of FFG by combining bibliometric methods and literature review. On the one hand, based on the litera-

ture review, we have identified the definition and classification of FFG and elaborated on the association between FFG and related topics. On the other hand, with the help of bibliometric indicators and visualization tools, this article has analyzed the time and citation distribution of all 626 publications from WoS Core Collection, identified highly cited articles, authors, journals and categories, and explored the co-authorship, co-citation and co-word networks among this research field.

In general, there are at least 5 aspects that deserve further study: 1) To explore the influence of one or several FFG factors (e.g., family successions) on other FFG factors (e.g., firm performance); 2) To study the differences between the family business and nonfamily business governance; 3) To improve the family governance ability for mitigating the adverse effects of social and economic environment, such as the COVID-19 crisis; 4) To control the irrelevant factors and find the true role of different FFG factors in family business governance.

However, it must be admitted that there are still some limitations. For one thing, we use WoS Core Collection as the single database to retrieve the initial data, which may cause information missing to some degree. For another, we just leave English papers when refining the initial data, while some important publications may use different languages like Italian, Chinese and Spanish because they are the outstanding productive countries of FFG publications. Therefore, in the future, more databases, such as Scopus and Science Direct databases and publications in multiple languages can be considered in the data collection process.

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Author contributions

Zhongmin Pu and Xinxin Wang conceived this study and were responsible for collecting the data and writing the manuscript. Zeshui Xu gave important suggestions for the writing and revision of the manuscript. Marinko Skare revised the manuscript. All authors read and approved the manuscript.

Disclosure statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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APPENDIX

Table A1. The top 10 influential journals

Rank	Journal	TP	%	IF ₂₀₁₉	Categories/ Ranking
1	Journal of Family Business Strategy	36	5.751	3.927	Business 44/152 Management 57/226
2	Corporate governance: an international review	35	5.591	2.294	Business 88/152 Business, finance 27/109 Management 124/226
3	Journal of Family Business Management	26	4.153	###	###
4	Review of family business	24	3.834	5.212	Business 22/152
5	Journal of Business Research	21	3.355	4.874	Business 29/152
6	Entrepreneurship Theory and Practice	16	2.556	10.750	Business 2/152

End of Table A1

7	Small Business Economics	14	2.236	4.803	Business 31/152 Economics 17/373 Management 34/ 226
8	Journal of Corporate Finance	13	2.077	2.521	Business, Finance 22/109
9	Asia Pacific Journal of Management	11	1.757	3.064	Management 84/226
10	Journal of Small Business Management	11	1.757	3.461	Management 72/226

Note: % represents the percentage of published articles, IF_{2019} is the impact factor of 2019 in the Journal Citation Report (JCR) database, Ranking is the rank of the journal in its category and “## #” indicate that there is no official information.