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Family Firm Innovation: A Bibliometric Analysis

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Abstract. This study aims to identify the emerging themes in the family firm innovation (FFI) through retrospection of FFI research and propose the way forward for the FFI domain. Based on 666 journal articles indexed in the Scopus database till 10 July 2022, we performed the performance and intellectual structure analysis using VOSviewer and Bibliometrix-R. This study sheds light on the main themes through thematic mapping. A possible future research avenue to advance FFI knowledge is proposed. We expect our findings to open up many more opportunities for FFI to stay competitive and sustain post-COVID-19 pandemic recovery. We believe this study represents the first few complementary bibliometric reviews on FFI, including the publications since the COVID-19 pandemic. Thus, this study contributes to redirecting the FFI research post-COVID-19 pandemic.

Keywords: Family Firm Innovation; COVID-19; Bibliometric Analysis

1. Introduction

Family firm (FF) contributes significantly to the socio-economic globally (PwC, 2021). Traditional influential in the United States of America and Germany, FF has started gaining its foothold in the Asia Pacific, including Australia, Malaysia, and Indonesia, supported by the new entrants of FF entrepreneurs (Family Capital, 2022). While scholars continuously debated the definition, this study described FF as an organisation in which multiple family members are owners or managers, either contemporaneously or over time, spanning different generations (Miller et al., 2007).

Despite extant studies on FF, scholars (Aparicio et al., 2019, De Massis et al., 2022) highlighted family firm innovation (FFI) as an essential research agenda because innovation is a means to stay relevant and competitive (De Massis et al., 2022). It is noteworthy that FF remains the backbone of the economy and is expected to recover post-COVID-19 pandemic (KPMG, 2021), making innovations even more prevalent.

FFI refers to the intentional generation or introduction of novel processes or products resulting from family firm members' autonomous and interactive efforts (Padilla-Meléndez et al., 2015). FFI encompasses service, process, organisational, or business model innovation, can be continuous/discontinuous, incremental/radical, sustaining/disruptive, and flexible/inflexible (De Massis et al., 2016). FF entrepreneurs remain mixed in pursuing innovations and possibly risk losing control and emotional endowment (Casado-Belmonte et al., 2021).

Thus far, FFI research offers mixed findings (Chrisman et al., 2015; De Massis et al., 2022; Lorenzo et al., 2019), fragmented and multidisciplinary, resulting in vague directions ahead, indicates a need for consolidated review to better position the knowledge contribution and justify future research's novelty. We argue that the existing FFI reviews (e.g., Aparicio et al., 2019; Casado-Belmonte et al., 2021; Padilla-Meléndez et al., 2015) are limited to a modest review sample or less methodology rigorous, thus motivates the development of our present study (Lim et al., 2022).

Specifically, this study undertakes a bibliometric approach to review the literature in the FFI domain. A bibliometric review is a quantitative and statistical measure that can handle a large data set with mitigated bias risk (Mukherjee et al., 2022). This study aims to address: 1) the publication and citation trends of FFI, 2) the top contributing authors, countries, and journals, and 3) the major themes and topics in the intellectual structure of FFI to propose the way forward. More importantly, this study includes publications after the COVID-19 pandemic, which can provide a new reflection of FFI to understand innovation-related development (Wang et al., 2022).

This review will provide an overview of the performance and intellectual structure of FFI research and propose ways to advance FFI research. In terms of practical contributions, this present bibliometric study offers

an objective assessment of research productivity and its impact for equitable decision-making (Mukherjee et al., 2022).

2. Methodology

Our data collection and analysis are guided by the considerations in existing rigorous review protocols (Lim et al., 2021): the Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) (Paul et al., 2021) and PRISMA (Moher et al., 2015). We obtained the bibliometric data from the Scopus database, which offers a broader range of high-quality journals. (Kumar et al., 2022). By limiting the search to the article title, abstract, and keywords, we employed the following search string: ("family business*" OR "family firm*" OR "family enterprise" OR "family own*" OR "family control*" OR "family entrepreneur*") AND ("innovat*")). This review includes "English" (language) "final" (publication stage) "articles" (document type) published in "journals" (source type) in "business, management, and accounting"; "economics, econometrics, and finance" and "social sciences" (subject area). A total of 666 publications were returned as of 10 July 2022.

This study conducted two sets of analysis: performance analysis (by using Microsoft Excel and Bibliometrix-R) and science mapping (using Bibliometrix-R and VOSviewer). The performance analysis is akin to demographic data in empirical studies. Following Kumar et al. (2022) and Lim et al. (2021), this study analysed the publication (productivity) and citation (impact) trend of FFI, as well as the most productive (publication) and impactful (citation) contributors in terms of authors, countries, and journals. In science mapping, which presents the intellectual structure of FFI (Donthu et al., 2021), this study performed a thematic mapping using a strategic diagram to propose the way forward themes and topics in FBI. The results of the bibliometric analysis are presented in the next section.

3. Results

3.1 Performance analysis

Publication and citation trends. Our analysis showed that before the year 2008, there were only five FFI articles published annually, with some years did not produce any articles (e.g., 1988, 1989, 1991 to 1993, 1995, and 2002). FFI publications started growing in 2008 and peaked in 2020 (n: 97). In terms of citations, up to 2004, FFI publications had relatively low citations (n: 7 to 231), possibly due to the low number of publications. The FBI domain emerged as active in 2005 to exceed 1000 citations in 2010, reaching its peak in 2015 (n: 2,355). The growing publication and citation trends suggest that the FFI domain was gaining attention in 2000.

Top contributing authors. Of the 1,242 contributing authors, De Massis, Kraus, Kotlar, Kammerlander, and Frattini topped the list as the most productive FFI authors based on the number of publications (Donthu et al., 2021). These authors mostly started publishing in 2013-2014, with Kraus in 2010. De Massis, Frattini, Nordqvist, Chrisman, and Kellermanns made up the top ten percent of most impactful authors with the highest citations (Donthu et al., 2021). De Massis emerges as the most productive and impactful author (26 articles, 2,220 citations), focusing on product innovations (De Massis et al., 2015) and the influences of family involvement on innovation management (Chrisman et al., 2015).

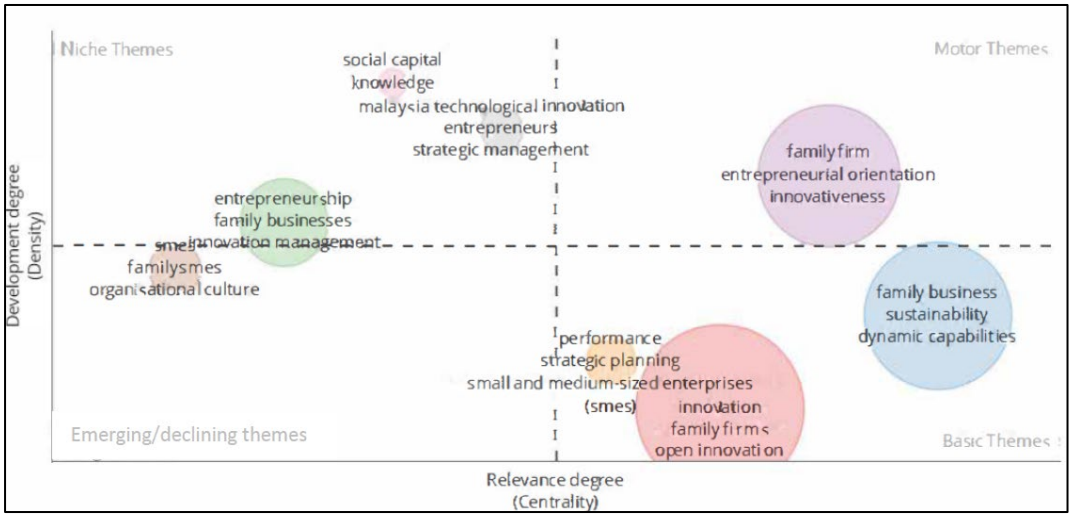
Top contributing countries. Of the 63 contributing countries, Italy (n: 246), the United States (n: 213), Spain (n: 200), China, and the United Kingdom contributed 50 percent of the total articles in the FFI corpus. Regarding citations, the United States (n: 4,500), Italy, the United Kingdom, China, and Sweden topped the list, contributing 60 percent of total citations. The United States was supported by several prominent scholars, such as Zahra in Zahra (2005) and Wiklund in Naldi et al. (2007). From the analysis, only China from the Asia Pacific countries produced at least 100 articles, with an average citation of 9.20 per article, suggesting more studies in the Asia Pacific context because of the FF growing prominence (Family Capital, 2022).

Top contributing journals. Of the 272 journals in the review corpus, the top five journals contributed 18 percent of total publications, led by the Journal of Family Business Strategy (n: 32), Journal of Family Business Management (n: 26), and Family Business Review (n: 26). In terms of citations, the top five journals contributed 37 percent of total citations, led by Family Business Review (3,000 citations), Journal of Product Innovation Management (1,148 citations) and Journal of Family Business Strategy (1,147 citations). It is observed that journals that appeared less productive were capable of producing high-impact articles, thus motivating high-impact FFI research.

3.2 Intellectual structure

This study investigates the intellectual structure of FFI using a thematic diagram. Using author keywords as inputs, we generated a strategic diagram with a graphical representation of the impact (influence) and centrality (importance) using Bibliometrix-R. The thematic diagram (Figure 1) clustered the key themes in FFI into four quadrants: motor themes, basic themes. niche themes, and emerging/declining themes. It serves as a guide to propose the ways forward for FFI research.

Figure 1
Thematic diagram of FFI research



Motor themes (upper-right quadrant). Keywords include family firm, entrepreneurial orientation, and innovativeness, representing high centrality and high-impact topics as mainstream foundational insights guiding FFI research over the period. Several scholars examined entrepreneurial orientation to innovate for competitive advantage. For instance, Zahra (2005) proposed that family ownership and involvement promote entrepreneurship, including risk-taking for innovations, but long-tenure founders have the opposite effect. Cruz and Nordqvist (2012) evident that the founder's influence on entrepreneurial orientation is vital in the first generation and weaker moving down the generations. We recommend that future FFI studies build on the foundation of innovativeness through entrepreneurial orientation. Given the heterogeneous family business, future studies may investigate from different angles to generate fresh ideas, such as individual-firm-nation level comparisons and across various innovations.

Basic themes (bottom-right quadrant). Keywords include "performance, strategic planning and small and medium-sized enterprises (SMEs)," "innovation, family firms, and open innovation," together with "family business, sustainability, and dynamic capabilities," are central to dynamic capabilities through open innovation. These keywords represent high centrality but low-impact topics, suggesting that the topics are relatively under-explored. Indeed, scholars (e.g., Casado-Belmonte et al., 2021) propose more literature on open innovation, which remains under-explored, to facilitate FF in resolving the paradox of carrying out distinct aspects of the innovation. We recommend future studies may dwell on the dimensions of dynamic capabilities of the different types of open innovations, including digital, green, and environmental-related innovations.

Niche themes (upper-left quadrant). Keywords include "entrepreneurship, family businesses, and innovation management," "technological innovation, entrepreneurs, and strategic management," as well as "social capital, knowledge, and Malaysia." These keywords represent low centrality but high impact topics, implying highly developed topics yet low impact in the FFI domain. We recommend that future studies consider diving into topics relevant to these keywords to complement the mainstream themes to provide more niche insights on FFI. Indeed, the prolonged COVID-19 pandemic has called for business model innovations and technological innovations through digitalisation and internationalisation (Leppäaho and Ritala, 2022).

Emerging/declining themes (lower-left quadrant). Keywords include SMEs, family SMEs, and organisational culture. These keywords represent low centrality and low impact, indicating future research opportunities to increase the depth and breadth of the FFI domain. Indeed, scholars have called for more examinations of the

influence of organisational culture (e.g., Alos-Simo et al., 2017) in the digital age. We hope this quadrant offers novel ideas for future studies to take FFI further.

4. Conclusion

This study offers several key takeaways. Firstly, our study complements existing work (e.g., Aparicio et al., 2019; Casado-Belmonte et al., 2021; Padilla-Meléndez et al., 2015) by using up-to-date bibliometric data and more scholarly-rigorous coverage by presenting up-to-date quantitative publication and citation trends for FFI. Our study consolidated the final English academic journal articles in most of the disciplines indexed in Scopus to provide a more comprehensive bird's eye view of the FFI domain, which is fragmented. More importantly, we offer a refreshed analysis covering the publications after the COVID-19 pandemic, which we argue are more relevant given that the COVID-19 pandemic has created a unique situation that urges FFI to innovate in making a recovery post-COVID-19 pandemic. We hope our study motivates future studies to continue reviewing large research domains hovering over FFI to extend insights beyond that of our study.

Second, this study highlights the contributions of FFI research constituents (namely, the productivity and influence of authors, countries, and journals). An interesting yet motivating key finding from the productivity-impact analysis suggests that besides the number of publications, authors could contribute to shaping FFI literature through high-impact multidisciplinary journals. Further, with the social-economic dominance of FF worldwide, scholars from all over the world are encouraged to participate in the FFI research journey to enrich the international contents of FFI research.

Lastly, this study unveils the main themes in the intellectual structure of FFI through the thematic diagram. We hope that clustering the motor, basic, niche, and emerging/declining themes offers a starting point regarding keywords' centrality and impact to guide future FFI research into various FFI topics. The motor themes, such as entrepreneurial orientation to innovate, serve as the fundamental foundational insights driving FFI research over time. Perhaps, this intellectual structure could help future FFI studies better position the study's novelty against the past and attempt to bridge the knowledge gaps in advancing the field, such as missing/under-explored topics and missing links between topics.

4.1 Real-world implications

This study offers up-to-date insights to FF entrepreneurs who wish to understand the permissible innovation areas to stay competitive in the uncertain business climate, which remains relevant in the COVID-19 pandemic aftermath. Firstly, FF could consider accelerating open innovation to improve FF performance and sustain long-term. Perhaps FF can explore open innovations relating to technological, green, and even disruptive through external collaborations in facilitating internationalisation beyond the home country to establish a stronger foothold.

Besides this, our findings suggest that FF leadership can consider nurturing organisational culture that effectively guides the organisational beliefs and values of the FFI they are pursuing. Specifically, scholars found that innovative culture that inspires risky behaviour and creativity (Mohelska and Sokolova, 2018) can enhance innovative behaviour and stimulate innovation. We anticipate that the right culture is crucial to keep up the entrepreneurial-oriented mindset to innovate**.**

4.2 Study limitations

This study remains limited in several ways. Firstly, this study collected bibliometric data from only the Scopus database. Although we argue that Scopus offers broader coverage, using a single database may not have covered other sources, which could vary our findings. Future studies can consider different or multiple databases to validate our results.

Secondly, this bibliometric analysis inherently outlines a bird's eye view of the FFI through the performance analysis and intellectual structure of the extensive FFI articles in the review corpus. Future studies can consider deep diving into the specific intellectual structure to uncover advanced pertinent theories, constructs, characteristics, contexts, and methods for FFI knowledge development.

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