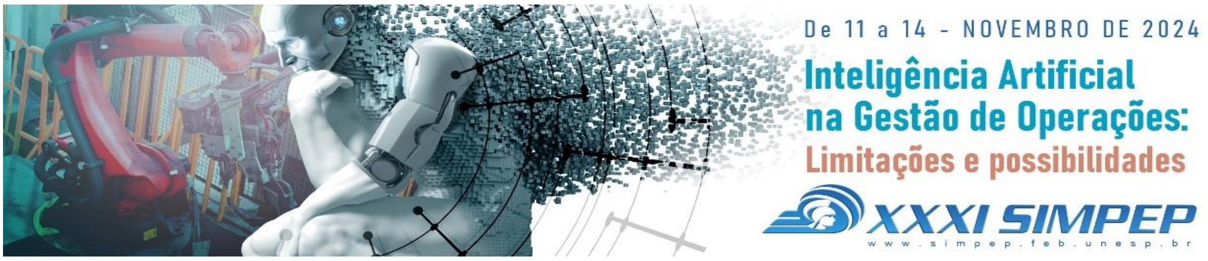

BIBLIOMETRIC ANALYSIS OF FIRM PERFORMANCE ARTICLES PUBLISHED IN RECENT YEARS

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ÁREA: *6. ENGENHARIA ORGANIZACIONAL*
SUBÁREA: *6.3 – GESTÃO DO DESEMPENHO ORGANIZACIONAL*

RESUMO: THE PURPOSE OF THIS ARTICLE IS TO DEEP DIVE INTO ARTICLES THAT MENTION FIRM PERFORMANCE IN THE TITLE, AND FIND DIFFERENT RESEARCH PATHS IN THE LITERATURE ABOUT THIS TOPIC. IT WAS GATHERED A SAMPLE WITH 1,495 ARTICLES FROM SCOPUS AND WEB OF SCIENCE PUBLISHED BETWEEN 2019 AND JUNE/2024 IN Q1 AND Q2 JOURNALS CLASSIFIED BY SJR. THEN, IT WAS USED TEMPLIER AND PARÉ (2015) FRAMEWORK WITH 6 STEPS TO REVIEW LITERATURE, THE ANALYSES SUGGESTED BY DONTHU ET AL. (2021) FOR BIBLIOMETRIC STUDIES, AND VOSVIEWER TO CONDUCT SCIENCE MAPPING ANALYSIS. THIS A VAST RESEARCH FIELD, WITH MANY POSSIBLE WAYS. THE MAIN FINDINGS THAT CAUGHT THE AUTHORS' ATTENTION WERE THAT FIRM PERFORMANCE AND SUSTAINABILITY ARE STRONG RELATED, AND THERE MIGHT BE AN INTERESTING RESEARCH GAP TO ADD MARKETING CAPABILITIES TO THAT NEXUS, USING IT TOGETHER WITH ESG AS MODERATING ROLES TO FIRM PERFORMANCE. THE CONTRIBUTION OF THIS PAPER IS TO ORGANIZE RECENT FIRM PERFORMANCE RESEARCHES IN DIFFERENT CLUSTERS AND INDICATE POSSIBLE FUTURE RESEARCH.

PALAVRAS-CHAVES: FIRM PERFORMANCE; BIBLIOMETRIC; LITERATURE REVIEW.

1. INTRODUCTION

Firm performance is an important subject of study in the academic world, with 2,157 published articles that mention it in the title between 2019 and June/2024, indexed by Scopus and Web of Science, a number that could be an indicator of how this subject is important for business academic research. The purpose of this paper is to dissect these articles and find different moderating variables used in the literature to explain firm performance in different contexts.

These contexts may be geographical, like the whole world (Jung and Yoo, 2023), or segmented by regions, like the Middle East and North Africa (Abdulla and Jawad, 2024), emerging markets (Bahadori, Kaymak and Seraj, 2021; Bilyay-Erdogan and Öztürkkal, 2023), Latin America (Enriquez-Perales et al., 2023; Marquez-Cardenas, Gonzalez-Ruiz and Duque-Grisales, 2022) or even by country, such as the US (Habib and Mourad, 2023; Nguyen, Hoang and Tran, 2022; Shahzad et al., 2022), the UK (Ahmad, Mobarek and Raid, 2023), China (Pu, 2023) or India (MAJI and LOHIA, 2023; MENDIRATTA et al., 2023; VEERAVEL, MURUGESAN and NARAYANAMURTHY, 2024).

Other contexts include different moderating variables used to explain firm performance, like ESG capabilities (Bissoondoyal-Bheenick et al., 2023; Rahman et al., 2023; Lee et al., 2023; Nguyen et al., 2022), diversity (Walton and Tribbitt, 2023; Pham and Lo, 2023; Suherman et al., 2021; Ocak, 2021), innovation (Ferreira, Fernandes and Veiga, 2024; Li and Vermeulen, 2021; Montani et al., 2023; Wei et al., 2022), accounting (Tran et al., 2022; Badulescu et al., 2021; Cui et al., 2021; Susanto and Meiryani, 2019), marketing intensity (Markovitch, Huang and Ye, 2020; Semenov and Randrianasolo, 2023; Ullah, 2021), and many others. And there are published articles that use more than one variable in the firm performance nexus, like HR metrics and accounting (Arseneault and Gagnon, 2024); energy efficiency, innovation and accounting (Sinaga et al., 2019); sustainability and innovation (Khanchel, Lassoued and Baccar, 2023); ownership structure and ESG (Fuadah et al., 2022); marketing innovation (Peng, Qin and Tang, 2021); or sustainable products and marketing resource intensity (ULLAH, 2021).

With this large universe of different research paths that one may endeavor to better understand firm performance, it is necessary to conduct a bibliometric study in order to map it out. Thus, it is used in this article the 6-step framework proposed by Mathieu Templier and Guy Paré (2015) to review the literature, and the analyses suggested by Donthu et al. (2021) for bibliometric studies. The question that this article aims to answer is: *How is "firm performance" being researched in the business and economic academic worlds since 2019?*

The objective is to find potential research gap(s) and indicate further quantitative research to dive deeper into the matter. This article contributes to the literature by analyzing what is being published about this subject in the past five years, as well as clustering them by the different nexus used to explain firm performance.

The article is structured by this introduction showing the context, the research question, and the objective of this study; followed by a 6-step method used to analyze the articles; thus, the authors present the results and discuss them from different perspectives; and, finally, they make their final considerations with the indication for further research about this subject.

2. METHOD

The Templier and Paré's (2015) 6-step framework presented for literature review include the following: (1) formulating the problem; (2) searching the literature; (3) screening for inclusion; (4) assessing quality; (5) extracting data; (6) analyzing and synthesizing data.

2.1 Formulating the problem

The problem that kicked off this article is to better understand how firm performance is being researched in the business academy in the past five years. As aforementioned in the introduction, there are several ways to segment the research of firm performance: by geography, by mediating variables, or by both, like the relationship between firm performance and innovation in China (Wu *et al.*, 2024; Xiong, Wang and Zhao, 2020; Xiong-Feng, Jing and Xin-Nan, 2019), diversity in UK listed companies (Marques and Pascaru, 2023), or corporate governance in India (Nashier and Gupta, 2023; Sanan, Jaisinghani and Yadav, 2019). Given the vast work published in recent years, it seems necessary to make a bibliometric analysis to organize these articles in a way that contributes to further publications in this matter.

2.2 Searching the literature

To find the initial sample of 2,157 articles for this study, Scopus and Web of Science were selected as the two database sources, given the quality and the broad coverage of these databases for published articles (Schlögl, Boric and Reichmann, 2024). The authors chose to use “firm performance” mentions in the titles as the main research criteria in order to get a large sample without deviating from the main subject, and the past five years to understand how it is being researched recently. In Table 1, you may find the search results in each platform, as well as the criteria of inclusion, exclusion and the amount included in the initial sample:

Table 1 – Queries used to find the initial article sample

Platform	**Query**	**Criteria of inclusion**	**Criteria of exclusion**	**Number of articles included in the initial sample**
Scopus	TITLE ("firm performance") AND PUBYEAR > 2018 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (EXACTKEYWORD , "Firm Performance"))	Articles, in English, published between 2019 and 2024	None	1,579
Web of Sciente	TI=("firm performance") AND DT=(Article) AND LA=(English) AND WC=(Business, Finance OR Business and Economics OR Business)		Articles that were already in the sample from Scopus	578

Source: authors, 2024

2.3 Screening for inclusion

The search was made deliberately to match the narrowed research question on the term "firm performance" in the title to assure that the main topic of the articles found is the one of this study, and the time frame "since 2019". The other filters made for inclusion were that only published articles in English entered the sample. Finally, given that two different sources were used (Scopus and Web of Science), the duplicated articles found in both were removed from the sample.

2.4 Assessing quality

The criteria used to assess the quality of each article was by the quality of its journal. Only articles published in quartiles one or two according to Scimago Journal Rank (SJR) in 2023 were considered in the final sample. Thus, 117 articles published in Q4 journals, 257 in Q3 journals, and 288 published on journals that weren't in any quartile were removed from the final sample, leaving it with 1,495 articles.

2.5 Extracting data

The articles' data were extracted according to the query, criteria of inclusion and exclusion presented in Table 1 from Scopus and Web of Science. Then, in a spreadsheet, both databases were combined following Scopus' structure to find the duplicated articles by the DOI number.

On another spreadsheet, the authors put the journal's information extracted from Scimago Journal and Country Rank selecting the subject areas "Business, Management and Accounting" and "Economics, Econometrics and Finance" categories in 2023. This information was used to assess quality of the articles by the quartile of the publication, as mentioned in the previous subsection.

2.6 Analyzing and synthesizing data

Given the importance of this step as the main purpose of this article, this will be discussed in the next section, following the analyses suggested by Donthu et al., (2021) for bibliometric studies.

3. RESULTS AND DISCUSSION

Donthu et al. (2021) separated the main bibliometric analysis techniques by performance analysis and science mapping. The following subsections will follow this framework to organize the different analysis made, using the enrichment techniques suggested by these authors for visualization and clustering.

3.1 Performance analysis

According to Donthu et al. (2021), to analyze the performance of authors and publications, "the most prominent measures are the number of publications and citations per year or per research constituent, wherein publication is a proxy for productivity, whereas citation is a measure of impact and influence" (p. 288).

3.1.1 PUBLICATION-RELATED METRICS

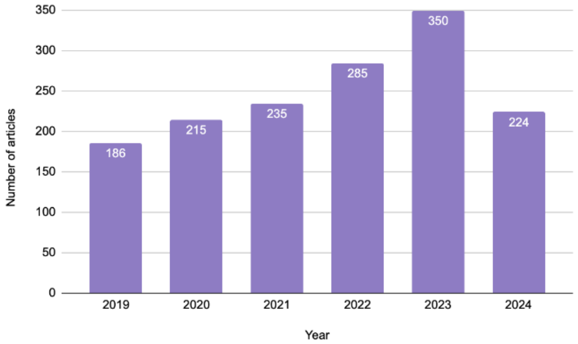
The 1,495 articles were published in the years shown on image 1, with 2024 beeing considered until June. It's possible to see a speeding trend, which suggests that this is a topic that is getting the researches attention recently. The 11 main journals in the sample have more than 18 articles published in each, as listed on table 2.

The sample gathers a total of 4,552 authors. Looking at sole-authored publications, 142 articles were published by only one of the 135 authors, leading to the conclusion that some authors have published more than one article in the sample. They are Aloulou W.J., Ayinaddis S.G., Ilmudeen A., Jain R., Kalash, I, Siriram R., Uppal N., wherein each having published two articles in the sample. The other 1,353 articles were co-authored by two or up to nine authors.

3.1.2 CITATION-RELATED METRICS

In total, the articles in the sample were cited 28,460 times, with an average of 19 citations per article.

Image 1 – Articles published per year



Source: authors, 2024

Table 2 – Main sources in the sample with more than 18 articles published:

Rank	Source Title	Number of articles
1	Journal Of Business Research	73
2	Journal Of Risk And Financial Management	38
3	Cogent Business And Management	28
4	Corporate Social Responsibility And Environmental Management	26
5	Management Decision	26
6	Corporate Governance (Bingley)	24
7	International Journal Of Emerging Markets	20
8	Journal Of Cleaner Production	20
9	Business Strategy And The Environment	18
10	Global Business Review	18
11	Uncertain Supply Chain Management	18

Source: authors, 2024

3.1.3 CITATION-AND-PUBLICATION-RELATED METRICS

The number of cited publications in the sample is 1,284. Among the 211 articles that were not cited, as expected, the majority, 131 articles, was published in 2024. Then, there are 67 articles from 2023, nine from 2022, and only two from 2021 and two more from 2020. This leads up to a proportion of cited publications of 85.89%. The average journals' H-index in the sample is 70.10, ranging from 6 to 375, and median of 73.

3.2 Science mapping

In this section, it will be presented the relationship between the articles in the sample. The software VOSViewer was used to analyze the CSV file generated with all the 1,495 articles selected for the sample from Scopus and Web of Science, following the Scopus file structure.

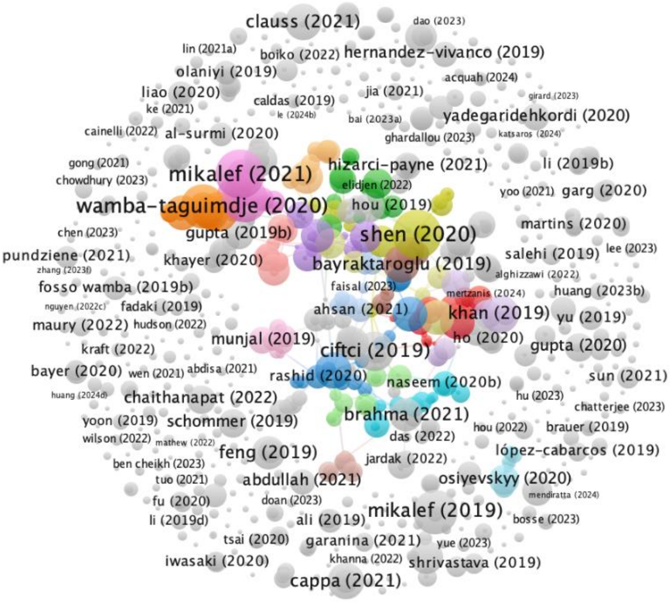
3.2.1 CITATION ANALYSIS

The top five countries in the sample are China, with 219 documents, followed by USA with 210, India, 118, the UK, 110, and Australia, 70.

The author citation analysis in image 2 shows a vast number of grey articles that were not clustered in the colored categories. This suggests that firm performance is so vast that not all papers can be easily clustered, leaving out potentially research topics.

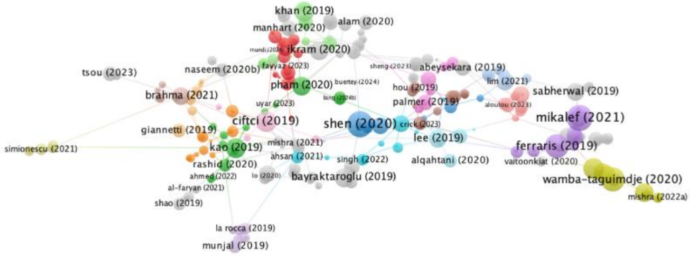
The result of the citation analysis considering only the 349 articles that have connections is shown in image 3. The articles in yellow from the left-hand side of the image cover the diversity and firm performance nexus, which connect to the light pink ones where "Brahma (2021)" can be seen in the image, that researched the board diversity. Then, the orange articles cover corporate governance. These are linked to the middle green ones that researched ownership structure. From here, there's a central pink step identified as "ciftci (2019)" that researched firm performance and corporate governance in emerging markets that leads to the top part of the image, with a universe of the corporate social responsibility (CSR), and environment, social and governance (ESG) ratings to firm performance. The big blue central circle are articles that researched the impact of the covid-19 pandemic in firm performance. Going to the right-hand side of the image, the light blue, dark pink and brown bubbles cluster papers that researched the impact of entrepreneurial orientation and different types of innovations to firm performance. Finally, the far right purple and yellow papers researched big data and AI.

Image 2 – Citation analysis by documents: 1,000 articles selected by VOSviewer



Source: authors, 2024

Image 3 - Citation analysis by documents: 349 articles with connections



Source: authors, 2024

From left to right, telling this same story in a text-organized way, it is possible to list these clusters as connecting firm performance to: 1. diversity; 2. corporate governance; 3. ESG; 4. covid-19; 5. innovation; and 6. technology.

3.2.2 CO-CITATION ANALYSIS

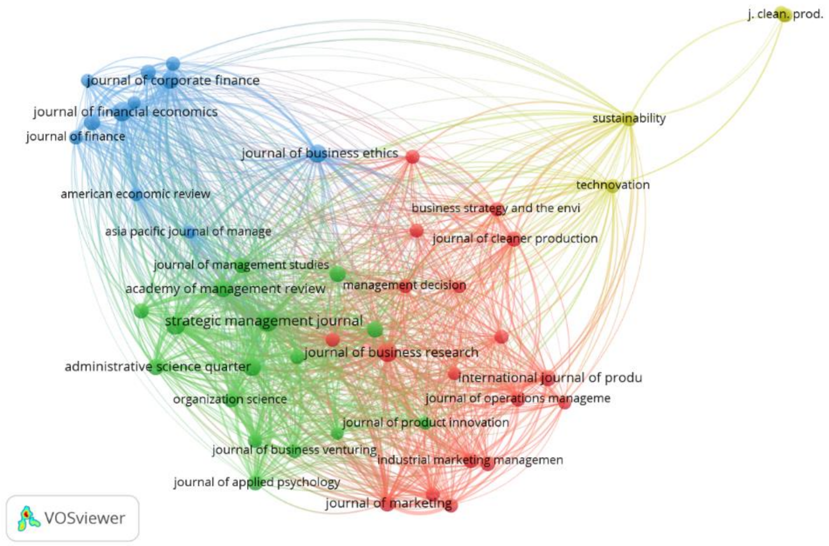
To help find the main topics and influential publications (Donthu *et al.*, 2021), it was made a co-citation analysis by cited sources, presented on image 4. Using the journals' names as proxies of the themes covered in the articles given their editorial approach, there were found four clusters in this analysis: the yellow covers sustainability and innovation; the blue ones are financial, accounting or economic journals; the green ones are management related sources, which include international business, entrepreneurship, psychology, human resources, and others; and the red ones are business related sources, including marketing, product, supply chain, operations, technology, etc.

It is possible to see some relation to the clusters identified in the citation analysis by documents and in the co-citation by cited source, like sustainability, innovation, and financial.

3.2.3 CO-WORD ANALYSIS

The co-word analysis was used to better understand the clusters identified in the previous subsection (Donthu et al., 2021). The image 5 brings the result of it, considering the co-occurrence analysis available in VOSviewer for the source keywords, chosen to rely on the sources' standardization to index the articles, and a minimum of 20 occurrences of a keyword. Three clusters were found: the red one was the expected "firm performance" related keywords, with different variations, like "industrial performance" or "performance assessment", and very close to "sustainable development", which leads to the central "sustainability"; the blue ones are financial related keywords, like "financial performance", "investment", that lead to "governance", "directors", "corporate responsibility", and "ownership"; and the green ones are "competitive advantage" and "innovation" that connect to "moderating role", "capabilities" and "strategy".

Image 4 – Co-citation by cited source: the 50 most cited sources



Source: authors, 2024

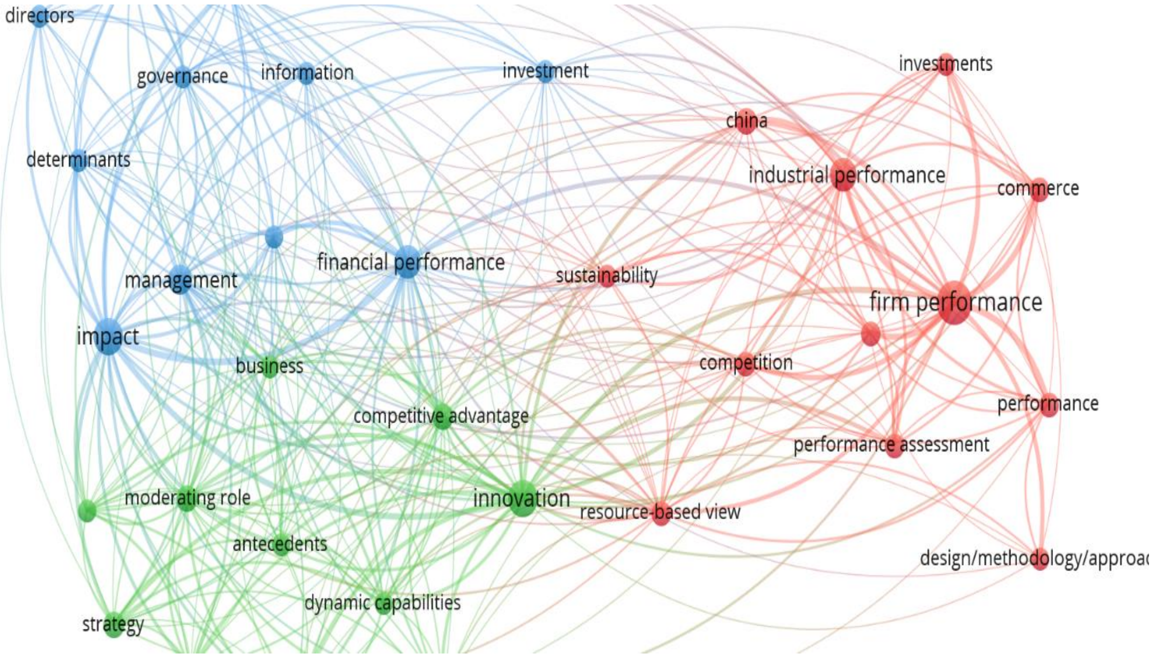
As per Barney (2020) research findings that many commonly used performance measures originate from accounting and finance, it was expected to have "financial performance" strongly connected to "firm performance". What was very interesting to find is that "sustainability" is in the middle of these key words, suggesting that this is a very important topic that is being researched recently with "firm performance". And having "moderating role" among the many topic-related keywords makes it look like this is an important approach in this research field.

3.2.4 CO-AUTHORSHIP ANALYSIS

Using the co-authorship analysis to find those that participated in more publications in the sample, the authors considered with 5 or more documents published as the threshold resulted in the clusters of image 6 with 17 authors. It is possible to see connections between Fosso

Wamba, S., Chaudhuri, R., Chatterjee, S., and Vrontis, D. that researched the firm performance-information management nexus, which include artificial intelligence (AI) and big data. That cluster of authors has a connection to Mikalef, P., Gupta, S., and Bag, S. that researched the same themes. All other authors are independently showed. Starting at the top and moving in a clockwise direction, Pant, P. participated in researches connecting firm performance to supply chain, to internet of things (IoT), and to the covid-19 pandemic; Tatoglu, E. to corporate governance; Feng, T. to sustainability; Kundu, S.C. to HR practices; Tarigan, Z.J.H. to supply chain only; Le, T.T. to innovation; Gupta, N. to sustainability and innovation; Charoensukmongkol, P. to entrepreneurship; Mertzanis, C to social efforts; and Patel, P.C. to C-level executives and legislation.

Image 5 – Co-occurrence of index keywords: 20 as the minimum number of occurrences of a keyword



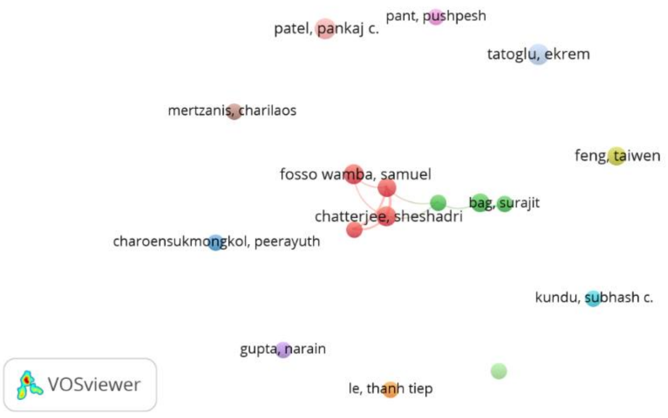
Source: authors, 2024

The low amount of authors that have participated in more than five articles in such a large sample, and the broad range of the topics covered suggest that firm performance is a vast theme to be researched and different angles can be used to dive deeper into this major topic.

4. FINAL CONSIDERATIONS

This article fulfills its initial purpose to organize the recent scientific production about firm performance in a meaningful way. As usually happens in business publications, firm performance is often related to financial performance, and as aforementioned in the keyword analysis, it was enlightening to find that sustainability is close related to firm performance researches. And it caught the authors attention the fact that "mediating role", a keyword not related to topic, but to research method, was among the highlighted ones.

Image 6 – Co-authorship analysis by authors with 5 or more articles published in the sample



Source: authors, 2024

It is difficult to find the research gap as it is often something that is missing in all the analysis conducted. It is basically to see what is not shown. In the co-citation by cited source (image 4), there were several marketing journals in the red area, but there were no mentions to it in the keyword analysis (image 5). This suggests that combining marketing to firm performance and sustainability could be a fertile field to be researched.

Thus, for further research, it looks like it makes sense to use marketing and sustainability as moderating variables to explain firm performance. This is something to be conducted in another article, with quantitative research methodology.

The limitations of this article include all the decisions made to narrow down the sample, like the time frame explicitly used to look at recent years, the use of Scopus and Web of Science only, the qualitative focus to only use Q1 and Q2 classification of journals by SJR, the subject areas only related to business, management, and economics, and, as any bibliographic analysis, lots of inferring was made, which does not necessarily lead to conclusions. The indicators used may not be conclusive, like citations may not represent influence, or co-occurrence of keywords could not indicate that the researches that mention them together are really similar to one another, or the journals' title cannot represent necessarily what an article covers.

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