

Article

A Systematic Review of Research on Sustainability in Mergers and Acquisitions

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Received: 15 December 2019; Accepted: 6 January 2020; Published: 9 January 2020



Abstract: The field of mergers and acquisitions and sustainability has been expanding in the last years; consequently, there is a need for a systematic review of the existing body of knowledge. This article aims to fill this gap by providing an overview and synthesis of the research topic. The specific objectives are (1) to assess the academic impact, and (2) to determine the structure of the topic. To achieve these goals, a bibliometric analysis will be carried out through a selection of articles taken from the WoS database from 1900 to 2019. First, the historical evolution of publications will be addressed, the distribution of articles by journal and by individual author, as well as the total number of citations per article. Second, this article will develop networks of co-citations of authors and journals and co-word analysis by using VOS Viewer software. The global results will provide insights into the nature and trends of research on mergers and acquisitions and sustainability.

Keywords: mergers and acquisitions; sustainability; bibliometric; systematic review; measures of productivity; impact metrics; co-citation analysis; co-word analysis

1. Introduction

Merger and acquisition processes (M&A) as a field of study has attracted great attention from both business leaders and scholars in different disciplines over the last few years. There is increased recognition of the relevance of the adoption and management of the most suitable M&A processes, especially in today's globalized world. In addition, current and traditional literature on these processes acknowledges the role of sustainability as a prerequisite for success.

While the definition of mergers and acquisitions is very specific in nature, sustainability remains an open concept that encompasses three interconnected pillars: environmental, economic, and social [1,2]. The environmental pillar aims to preserve resources for future generations [3]. Through economic sustainability, firms should contribute to the external context in terms of prosperity. Finally, the social pillar refers to the provision of value to society [2,4].

As the field has expanded during the last few years, there is a need for a systematic review of the existing body of knowledge. This article aims to fill this gap by providing an overview and synthesis of research on M&A and sustainability. This general objective is broken down into the following specific objectives: (1) To assess the academic impact of the research topic, and (2) to determine the structure of the research topic. Following recent literature reviews on M&A [5,6], the research questions are settled as

RQ1. Which are the main studies and research articles in the literature that link M&A and sustainability?

RQ2. What are the patterns and hot topics in the field of M&A and sustainability?

In order to do so, it will be applied a bibliometric methodological approach following other relevant works, e.g., [7–9]. After an exhaustive literature review, we can confirm that there is no article applying this methodology in the field of M&A and sustainable practices. The appropriate bibliometric method has been chosen according to the previous goals (see Table 1). Therefore, first, we develop diverse evaluative techniques of productivity—historical evolution of publications, distribution of articles by journal and by individual author. Within the evaluative techniques, metrics to analyze impact or influence are also included in the total number of citations per article.

Secondly, this article applies relational techniques to identify the structure of the research topic. In order to apply these techniques, we take a bibliometric mapping approach through the use of VOS Viewer software [10]. This software will allow us to visualize diverse networks such as co-citations of authors and journals and co-word analysis.

Table 1. Bibliometric methods used to analyze the research topic. Adapted from [11].

Evaluative Techniques	Academic impact and relative influence	Measures of Productivity
		Historical evolution of publications Distribution of articles by journal Distribution of articles by author
		Impact Metrics: Citation Analysis
		The most cited articles
Relational Techniques	Relationship between units of analysis	Co-Citation Analysis
		Co-citation analysis of authors Co-citation analysis of journals
		Co-Word Analysis

The results of this study are especially relevant considering the importance of the topic of M&A and the emphasis of society and institutions in developing sustainable growth. This article will provide academics an overview of the current situation of research on the combination of the two topics. Results will reveal the academic impact measured through the historical evolution of publications, the distribution of articles by journal and by individual author, as well as the total number of citations per article. In addition, results will offer insights about the intellectual structure of the topic in terms of the authors that are most frequently cited together, thematic organization according to the journals, and finally, main topics and research trends.

The article is organized as follows: the first section addresses a theoretical approach to justify the relevance of the research topics. The second section addresses the data collection and bibliometric methods used. In the third section, the results are presented, including the evaluative and relational techniques. In the fourth section, we summarize key findings of the research in the form of discussion. Finally, the fifth section includes conclusions, limitations, and future research lines.

2. Theoretical Approach

As a result of liberalization, deregulation, and globalization of the economy, nowadays businesses have to face both domestic and global competition. Mergers and acquisitions are crucial strategic means for achieving long term competitive advantage in this current business environment [7]. A merger is said to occur when two or more companies decide to pool resources under a common entity. An acquisition implies the exercise of effective control by a firm over the assets or management of another company without combining their businesses physically [12].

In this context, through M&A processes, firms can expand product portfolios, gain access to new markets, increase managerial specialization and power, engage in cross-selling, and expand geographical distribution [13]. Furthermore, M&A processes can foster the transfer of valuable intangible assets between targets and acquirers such as know-how [14]. Finally, through M&A, firms pursue efficiency in terms of costs—through the achievement of economies of scope and scale—as well

as to generate new revenues [13,15]. Based on the above, it could be said that M&A have important effects on firms' results and sustainable competitive advantage [16,17]. Nevertheless, these processes are far from simple and involve high levels of complexity [18].

Among the main factors that increase this complexity is the integration of cultures of both organizations and people. Differences in organizational culture can generate anxiety, distrust, and feelings of hostility [19]. In addition to the cultural fit, the success of a merger also depends on the strategic and financial fit, as well as the proper management of change, including employees [20]. Finally, customers are important elements affecting and being affected by an M&A [21].

The previous economic and social factors can explain why firms engage in M&A; however, they do not explain the choice of companies from foreign countries. One potential driver is the nature and quality of the political, economic, and legal policies and institutions of a country. Among these, the quality of a country's environmental regime is particularly highlighted. Locating in countries with less stringent environmental regulations—usually poorer—can help firms to avoid the higher costs of environmental compliance at home. This has led to environmental considerations being crucial in M&A decisions [13].

In view of the above, considering the rise in M&A activities as well as the increasing complexity of such processes, the role of sustainability is getting attention from both scholars and practitioners. Sustainability remains an open concept with a myriad of interpretations and context-specific understanding [1]. It could be said that it is an increasingly broad concept that encompasses three interconnected pillars: environmental, economic and social [2]. The environmental pillar refers to the firm's capacities to mobilize existing resources in an efficient way aiming at preserving those resources for future generations too [3]. The notion of economic sustainability reflects the economic value with which the company contributes to its external context in terms of prosperity in order to support future generations. Finally, the social pillar refers to the provision of value to society; in other words, fair business practices to the labor, human capital, and to the community [2,4].

The multiple impacts and agents involved and affected by these processes have led to a significant increase in the literature on M&A and sustainability in recent years. Consequently, there is a need for a systematic review of the existing body of knowledge.

3. Data Collection and Bibliometric Methods

To analyze the literature about M&A and sustainability, a systematic review considering previously published studies about the topic was done. This method ensures that the synthesis of the literature is made in a rigorous, transparent, and reproducible manner [8,22]. In order to choose the most suitable articles for the study, a search process was carried out, enabling us (1) to identify existing studies, (2) to analyze their usefulness and relevance in a specific research topic, and (3) to gather several studies conducted independently, at times with opposite results, and synthesize their implications [23].

The information search strategy was carried out using the bibliographic database Web of Science (WoS). This database is one of the most prestigious in the field of social sciences, especially in business and economics. Moreover, it is highly used for bibliometric studies in management and organization fields [24–26].

For the systematic review, we follow a keyword search of the literature. With this method, the researchers' subjectivity in data collection is excluded. The research was limited to the articles and reviews published in peer-reviewed journals included in the WoS database. The search terms selected for the search were "merger* and acquisition*" OR "M&A" OR "merger" AND "sustainability" OR "sustainable development". The search took into consideration papers published from 1900 to November 2019. The document search was carried out on 15 November 2019, according to the protocol of Table 2.

Table 2. Search protocol and results.

Database	WoS
Geographical scope	Global scientific production
Characteristics	Quality indicators: JCR impact factor Immediacy index Times cited Quartile
Documents searched	Topic
Data range	All years to 2019
Search date	14 November 2019
Search terms	(Merger * and acquisition * OR "M&A" OR merger *) AND ("Sustainability" OR "Sustainable development")
Initial number of documents	224
Inclusion criteria	Article Review
Number of documents	178
Filtered process	Duplicates Authors not identified Not related to the topic
Final number of documents	92

The number of documents obtained was 178. All the results obtained in the search have been double-checked to eliminate duplicates, to confirm they fit the subject matter of the study, and those with no identified authors have been discarded. To avoid subjective decisions, three authors performed this second screening of literature. From this screening, a total of 92 articles were identified.

4. Results

4.1. Evaluative Techniques

This article applies evaluative techniques in order to assess the academic impact of the topic. First, productivity is measured according to the historical evolution of publications, the distribution of articles by journal and finally by individual author. After that, impact or influence is evaluated through metrics such as the total number of citations per article [27].

4.1.1. Measures of Productivity

As can be seen in Figure 1, the numbers of academic articles per year in the area of sustainability in M&A processes are presented. It can be observed that the first publication was in 1982, in the journal *Economics Letters* by Oliner [28]. Until 2006, research had focused on issues related to the management of M&A processes, the achievement of cost and productivity effectiveness, and strategy. In this context, research on sustainability management was relegated to the background.

When analyzing the number of publications per year, a growth trend was recognized. This is particularly visible from 2007, with a considerable increase in the number of documents related to the subject of the study. The period of crisis in the global economy can be a potential driver of the interest in this field of study. The main reason lies in the fact that drastic and continuous strategic decisions can threaten the environmental, economic, and social sustainability of the company. In this sense, the difficulties in achieving the expected results lead academics to be interested in understanding the limitations derived from the economic situation. It is at this moment that M&A operations have greater relevance to be considered as an instrument of external growth, commonly used by companies to change and to face new market situations. In this positive trend of interest in the research subject,

the years 2014, 2016, 2018, and 2019 stand out with the largest number of documents—with 54.34% of the articles. Accordingly, it could be said that from this period, the research area of sustainability in M&A processes gained attention from academia.

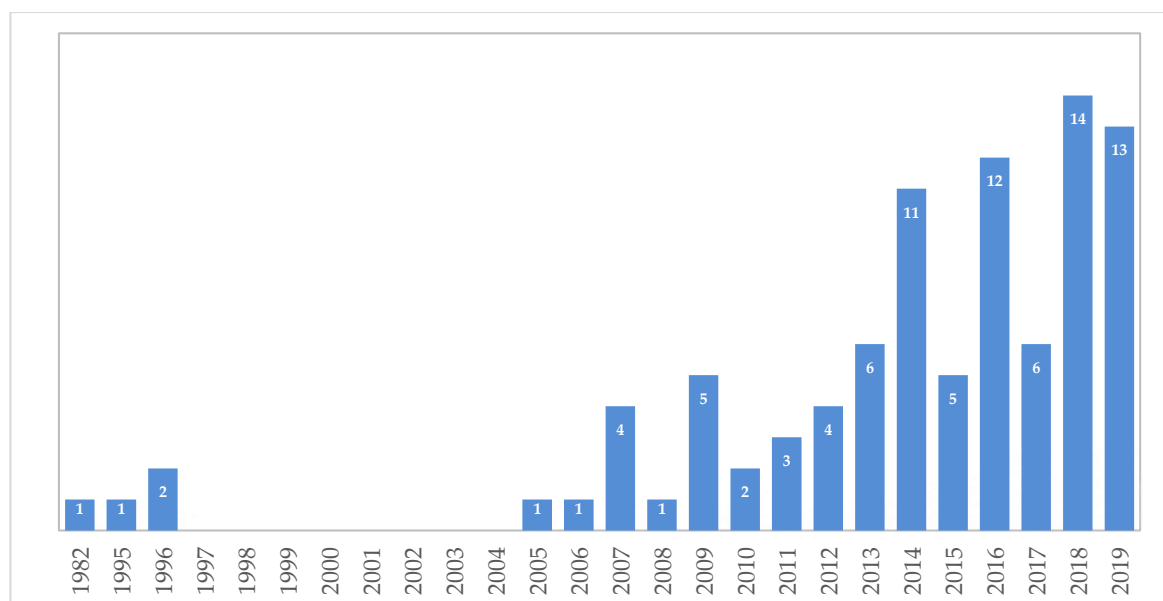


Figure 1. The annual publication on M&A and sustainability in the Web of Science (WoS) database.

Focusing attention on the most influential journals, Table 3 shows the sources with more than two articles on the research topic. Sustainability journal—Q2 in Journal Citation Report (JCR)—stands out as the most prolific source on this subject with 11 papers. It should be noted that of the 76 journals publishing on this topic, 69 of them have only published one article. Thus, there are only seven journals that have published more than one article, accumulating 23 publications among them. The selected journals belong to the areas of green and sustainable science and technology, environmental studies, economics, environmental sciences, and business and management.

Table 3. Distribution of articles by journal.

Journal	Number of Documents
Sustainability	11
Entrepreneurship and Sustainability Issues	2
Estudios de Economía	2
Journal of Economics	2
Journal of Cleaner Production	2
Social Responsibility Journal	2
Strategic Management Journal	2

Table 4 shows the authors with more than two articles on the research topic. The most prolific ones are Dollery and Kortt—with three articles [29–31]. It should be noted that they are co-authors in the three studies. Regarding the research topic, the works are not focused on M&As between private companies. Rather, the authors address mergers among local governments, particularly municipal mergers, also called council amalgamation. Thus, they discuss issues such as the environmental and financial sustainability of M&A processes among municipalities.

Mendez-Naya has also published three articles [32–34]. The topics are mainly the sustainability of M&A processes under the effect of factors such as the asymmetry of information or partner nationality. The article titled “National and International Mergers in Mixed Oligopolies” [34] is particularly relevant,

which is focused on the social pillar of sustainability. It addresses mergers of public and private national firms with private foreign firms and their effects on social welfare.

Finally, Clapp [35,36] is particularly focused on the food and agricultural industry, which has become more concentrated in the last few years. The author refers to both corporate mergers and common ownership and analyzes the environmental implications of these processes in order to develop more sustainable agriculture and food systems.

Table 4. Distribution of articles by author.

Author	Ref	Title	Journal	Year	Doc
Dollery, B.	[31]	Is Biggest Best? A Comparative Analysis of the Financial Viability of the Brisbane City	Australian J. Public Administration	2016	3
	[29]	Enduring Financial Sustainability Through Bottom-Up Local Authority Ingenuity and Rational Top-Down State Regulation: The Case of Lake Macquarie City Council	International J. Public Administration	2014	
	[30]	Local Co-Governance and Environmental Sustainability in New South Wales Local	Economics papers	2014	
Kortt, M.A.	[31]	Is Biggest Best? A Comparative Analysis of the Financial Viability of the Brisbane City	Australian J. Public Administration	2016	3
	[29]	Enduring Financial Sustainability Through Bottom-Up Local Authority Ingenuity and Rational Top-Down State Regulation: The Case of Lake Macquarie City Council	International J. Public Administration	2014	
	[30]	Local Co-Governance and Environmental Sustainability in New South Wales Local	Economics papers	2014	
Mendez-Naya, J.	[33]	Sustainability of Asymmetry of Information and Strategies of Non-Merged Firms Mergers	Trimestre Económico	2014	3
	[34]	National and International Mergers in Mixed Oligopolies	Estudios de Economía	2012	
	[32]	Merger Profitability in Mixed Oligopoly	Journal of Economics	2008	
Clapp, J.	[36]	The Rise of Financial Investment and Common Ownership in Global Agrifood Firms	Review of Int. Political Economy	2019	2
	[35]	Mega-Mergers on the Menu: Corporate Concentration and the Politics of Sustainability in the Global Food System	Global Environment Politics	2018	

Abbreviations: Ref: number of references; Doc: documents.

4.1.2. Measures of Impact: Citation Analysis

A citation analysis is crucial to detect the most prominent documents in an area of research. High levels of citations mean more influence on a particular topic [37]. Table 5 shows the most cited articles and it includes the ones with 15 or more citations.

Of the ten most cited papers, there are two documents that address issues related to mergers. Wei, Li, and Wang, “Restructuring Industrial Districts, Scaling Up Regional Development: A Study of the Wenzhou Model, China” [38], explore the formation of new firms and clusters that have been accompanied by mergers, acquisitions, and the emergence of multiregional enterprises in a Chinese industrial district. The work of Vasconcelos entitled “Tacit Collusion, Cost Asymmetries, and Mergers” [39] examines tacit collusion practices and the implication of merger policies.

Other articles address sustainability issues from diverse points of view. The vast majority are related to business and financial sustainability. Among them, Moatti, Ren, and Anand studied the implications of different sources of firm performance in M&A and their impact on the sustainability of competitive advantage [40]. Others address strategies such as coopetition [41] or the analysis of potential environmental threats to financial sustainability [42].

Finally, another trend in the topics of the most influential articles is environmental sustainability and green practices. It should be highlighted that the work by Dhingra, Kress, and Upreti [43] is an overview of the articles included in the special volume of the Journal of Cleaner Production entitled “Making Progress towards More Sustainable Societies through Lean and Green Initiatives”. This volume is dedicated to examining the interrelationships among lean methods, green initiatives, and sustainability in terms of new frameworks, tools, methodologies, or literature reviews.

The study of Young [44] is by far the most influential. It identifies distinct patterns that may arise from the interactions among scale-dependent environmental and resource regimes and their consequences in terms of ecological sustainability. According to the author, mergers are vertical interplay methods which may help firms to internalize problems of cross-level conflict. However, he also observes that this is not always beneficial from the perspective of ecological sustainability since it can easily become an excuse to impose the preferences of dominant actors on other members of the group. In the same vein, mergers usually concentrate the power in a particular sector, which may lead to difficulties in yielding outcomes that fulfill familiar conceptions of fairness or justice.

Other relevant works are focused on the analysis of the interpretation of sustainable development in CSR programs [45] and the ideological and globalizing potential of education for sustainable development [46].

Table 5. The ten most-cited articles.

Title	Authors	Journal	Year	Cites	Ref
Vertical Interplay Among Scale-Dependent Environmental and Resource Regimes	Young, O.	Ecology and Society	2006	128	[44]
Restructuring Industrial Districts, Scaling Up Regional Development: A Study of the Wenzhou Model, China	Wei, Y.D.; Li, W.; Wang, C.	Economic Geography	2007	99	[38]
Exploring the Concept of Coopetition: A Typology for the Strategic Moves of the Finnish Forest Industry	Rusko, R.	Industrial Marketing Management	2011	66	[41]
Tacit Collusion, Cost Asymmetries, and Mergers	Vasconcelos, H.	Rand Journal of Economics	2005	49	[39]
Does Lean Mean Green?	Dhingra, R.; Kress, R.; Upreti, G.	Journal of Cleaner Production	2014	48	[43]
Disentangling the Performance Effects of Efficiency and Bargaining Power in Horizontal Growth Strategies: An Empirical Investigation in the Global Retail Industry	Moatti, V.; Ren, C.R.; Anand, J.	Strategic Management Journal	2015	19	[40]
Merger Profitability in Mixed Oligopoly	Mendez-Naya, J.	Journal of Economics	2008	17	[32]
Globalisation and Education for Sustainable Development: Emancipation from Context and Meaning	Bengtsson, S.L.; Ostman, L.O.	Environmental Education Research	2013	16	[46]
Employer Association Responses to the Effects of Bargaining Decentralization in Australia and Italy: Seeking Explanations from Organizational Theory	Sheldon, P. Nacamulli, R.; Paoletti, F.; Morgan, D.E.	British Journal of Industrial Relations	2016	15	[42]
Corporate Social Responsibility: An Uneasy Merger of Sustainability and Development	Luke, T.W.	Sustainable Development	2013	15	[45]

4.2. Relational Techniques

In order to identify the structure of the research topic, relational techniques such as co-citations and co-word analysis are applied. Other methods like co-authorship (co-authorship networks reveal the social structure of the networks by identifying actors and their connections [11]) and bibliographic coupling (bibliographic coupling is retrospective in nature since it identifies when different authors have cited one or more articles in common; on the other hand, co-citation analysis is based on highly-cited papers, thus having a forward-looking perspective [11]) are also commonly used. However, the limited number of documents and the forward-looking perspective of the study require co-citation and co-word techniques for more accurate analysis. These methods allow us to identify patterns and detect hot topics [47]. Aiming at presenting the information in a more visual way, this section adopts a bibliometric mapping approach by using VOS viewer software [10].

4.2.1. Co-Citation Analysis

Co-citation analysis aims to detect the intellectual structure of a field of study. When two items are cited together in a third article, co-citation arises. This connection implies thematic similarity and even different levels of affinity between them. Thus, it can be said that this analysis allows us to identify influential works and their interrelationships [48–50].

In this study, different types of co-citations have been used based on the unit of analysis: author co-citation analysis and journal co-citation analysis. The former aims to identify which authors are most frequently cited together [51], while the second analysis presents the sources that are cited most frequently [52].

The author co-citation analysis contributes to knowledge about the intellectual structure of the research topic [51]. In this case, it is aimed at detecting which authors are most frequently cited together on the research field of M&A and sustainable practices. There were a total of 3949 cited authors in the 92 documents analyzed, of which 35 met the threshold of a minimum of 5 citations of an author. As can be seen in Figure 2, the co-citation analysis developed using the VOS-viewer software is illustrated, in which the largest set of connected items consists of 15 items. Each node represents an author, and its size indicates the number of times the author has been referenced in the 92 documents. A link between two nodes indicates a co-citation relationship. Each link has a strength and the higher the strength, the greater the thickness of the link. The nodes are also grouped according to similarity. The association strength normalization method used by VOS Viewer software identified four groups.

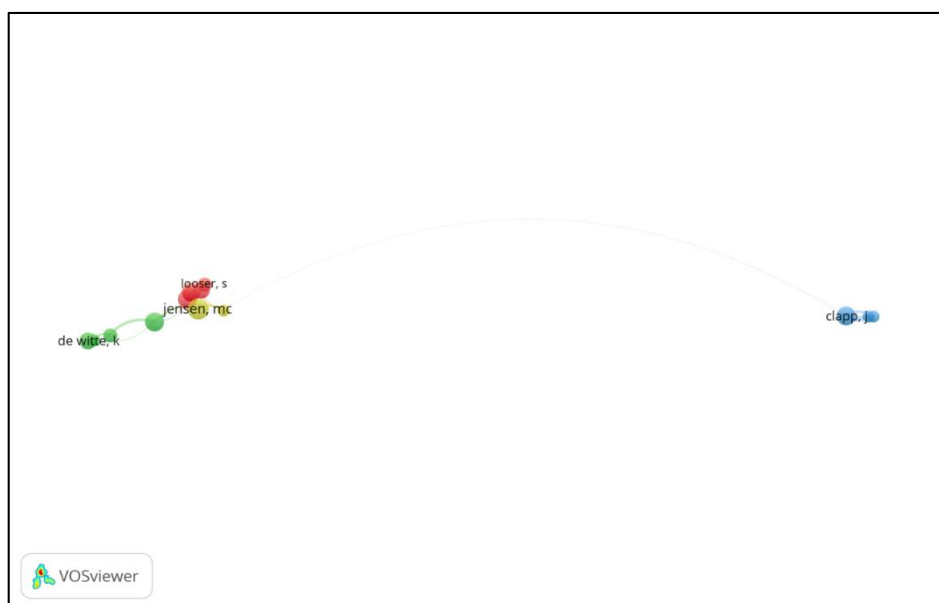


Figure 2. Co-citation network of authors of M&A and sustainability.

The red cluster encompasses 5 authors and it is related to the strategic management of the firm. This group of authors is particularly focused on identifying and explaining drivers of competitiveness beyond the traditional approach. Particular emphasis has been placed on the importance of the external context of the organization [53–55], inter-organizational relations [56–58], environmental strategies [54,59], corporate social responsibility [60,61], innovation and value creation to measure business success [62,63].

As can be seen in Figure 3, the yellow cluster is strongly related to the red one. These authors follow the path of strategic management. In this case, the approach is based on the application of theories such as the stakeholder and agency theories to explain the relationships with the different actors with whom the firm interacts [64–66].

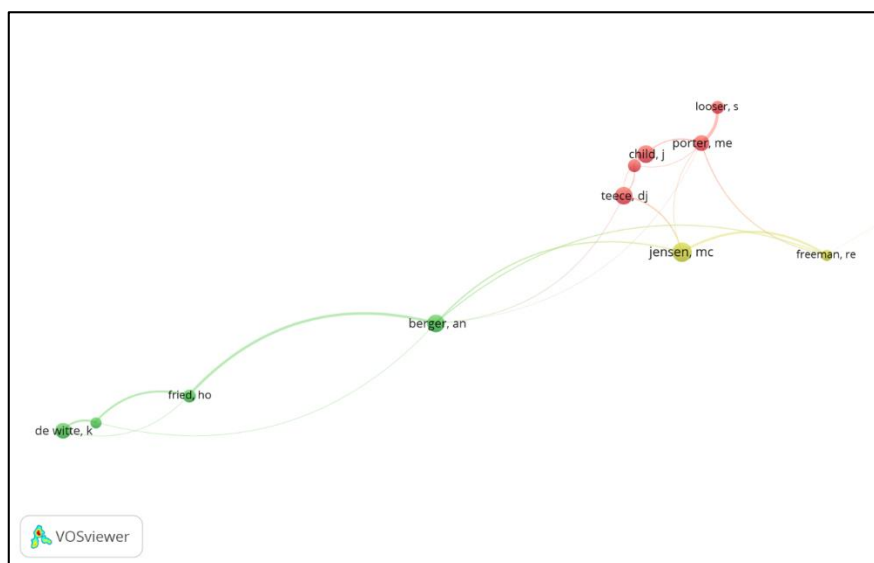


Figure 3. Co-citation network of authors of M&A and sustainability (red, green, and yellow clusters).

The green group addresses efficiency in both financial [67] and productivity terms [68]. The study of Fried, Lovell and Yaisawarng published in 1999 entitled “The impact of mergers on credit union service provision” [69] is especially relevant, with 50 direct citations in WoS. This article analyzes the sustainability of mergers and acquisitions from a social approach by analyzing the benefits for its members.

Finally, the blue cluster is the farthest on the map because it is the most different analyzed topic (see Figure 4). It addresses basic environmental policy issues and includes global reports made by institutions such as the Organization for Economic Co-operation and Development (OECD).

The journal co-citation analysis contributes to the study of the thematic organization of the research field of M&A and sustainable practices [52]. The greater the frequency of citations from two sources together, the greater the similarities between the journal and its research areas. In our sample of 92 documents, a total of 2772 cited sources were identified, of which 8 met the threshold of a minimum of 30 citations of a source. As can be seen in Figure 5, each node represents a journal. In addition, the node size represents the number of citations received. The distance between two journals in the visualization approximately indicates the relatedness of the journals in terms of co-citation links. The strongest co-citation links between journals are also represented by lines.

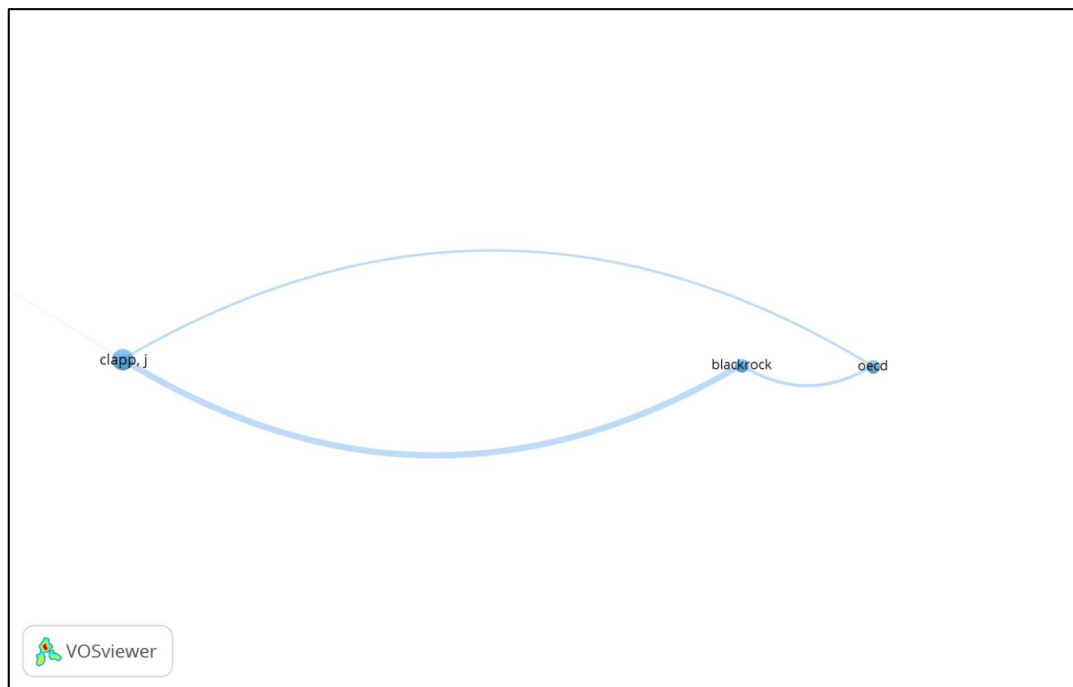


Figure 4. Co-citation network of authors of M&A and sustainability (blue cluster).

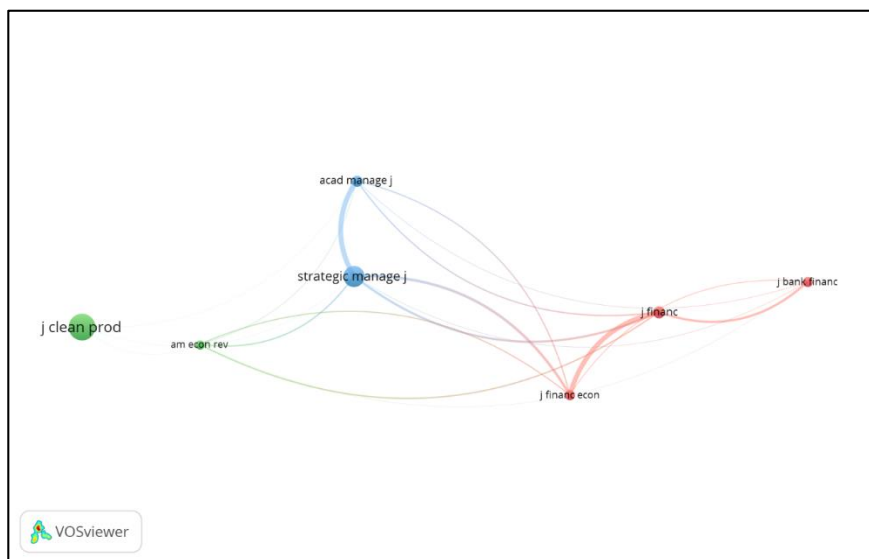


Figure 5. Co-citation network of sources of M&A and sustainability.

It should be noted that the Journal of Cleaner Production is the most cited (85 citations and 81 total link strength). Given the scope of the journal, this result is to be expected. In this regard, the journal is focused on environmental and sustainability research and practice, more specifically in preventing the production of waste, while increasing efficiencies in the uses of energy, water, resources, and human capital. On the other hand, the Strategic Management Journal also has a high level of citations (67) with greater link strength to other papers (1173). The main reason lies in the fact that the topic “mergers and acquisitions processes” (M&A) typically belongs to the field of strategic management, being an external development method for firms [70]. The Journal of Finance (38 citations and 473 total link strength) and the Academy of Management Journal (35 citations and 467 total link strength) were the following most-cited sources.

Given that the software VOS Viewer groups the nodes according to similarity, the network evidence three groups. The red cluster is comprised of three sources and includes journals that are mainly related to research across all the major fields of financial research (Journal of Finance, Journal of Financial Economics, and Journal of Banking and Finance). The blue cluster basically focuses on relevant research in strategy and management theory (Academy of Management Journal and Strategic Management Journal). Finally, the green cluster consists of two journals that focus their research on economics and sustainability. The Journal of Cleaner Production has the higher weight of the cluster, and it is related in terms of co-citation links with the American Economic Review. The relatedness of these two journals is mainly based on the transdisciplinary nature of the Journal of Cleaner Production, which also addresses sustainability issues from an economic perspective.

4.2.2. Co-Word Analysis

Co-word analysis or keywords co-occurrence analyze the most frequent keywords, thus providing insight into main topics and research trends [71]. In order to do so, this study analyzes the keywords co-occurrence network map (see Figure 6), the top 10 keywords in M&A and sustainability publications (see Table 6), and the keywords density visualization map (see Figure 7).

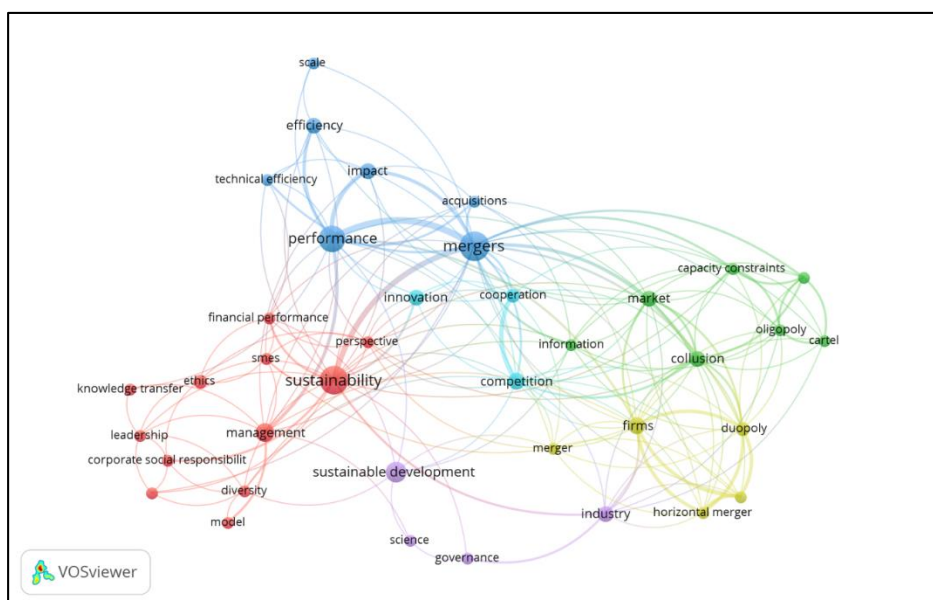


Figure 6. Co-occurrence network of keywords of M&A and sustainability.

Table 6. The top 10 keywords of M&A and sustainability-related publications.

Rank	Keywords	Frequency	Total Link Strength
1	Mergers	18	46
2	Performance	14	31
3	Sustainability	16	29
4	Sustainable development	9	7
5	Management	7	14

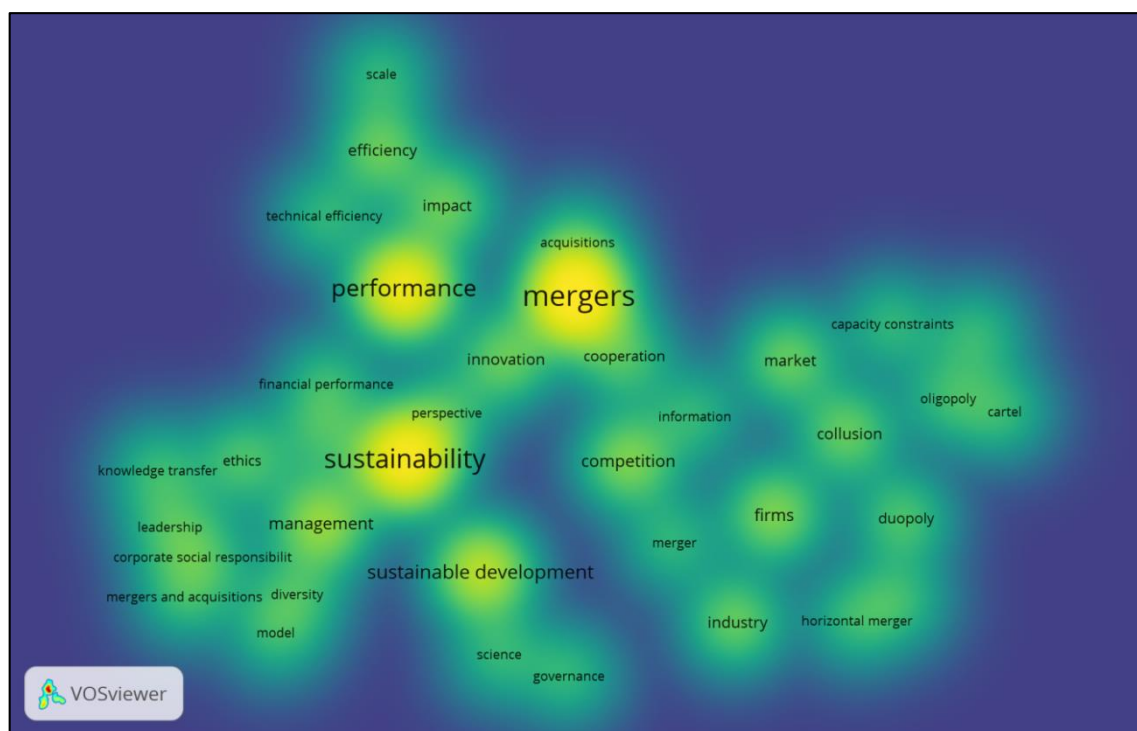


Figure 7. Keywords density visualization map of M&A and sustainability-related publications.

In all the 92 M&A and sustainability-related publications, we obtained 758 keywords altogether, and the terms occurring in at least three publications were considered. The results of the analysis are presented in Figure 6. As can be seen, the circles represent the occurrence of the keywords. In this way, the higher the weight of an item, the larger the label and the circle. The distance between the circles represents their relationship in terms of the number of times that the keywords occur together. The closer two keywords are located to each other, the stronger their relatedness. The strongest co-citation links between them are also represented by lines—the thicker the line, the stronger the link.

The keywords “mergers” (18 occurrences and 46 total link strength), “performance” (14 occurrences and 31 total link strength) and “sustainability” (16 occurrences and 29 total link strength) form the main core of the keywords in the research topic analyzed both in terms of occurrences and total link strength.

The node, “mergers”, has thicker lines with both “performance” and “sustainability”. This node is also closely related to “acquisitions”, which is obvious considering that both are external development methods for companies and most of the time, they are analyzed together. The closeness to the nodes “cooperation” and “innovation” reflect the importance of these strategies in successful merger processes.

The node “performance” is not related to “sustainability”; rather it is slightly related to “sustainable development”, which, according to several authors, are synonymous [1,4]. On the other hand, it has the thicker line of the network with “mergers”. This relationship confirms the relevance of achieving firm performance objectives in merging processes. Similarly, “performance” is located close to the nodes of “technical efficiency” and “impact”, suggesting the growing importance of other methods for assessing performance beyond traditional indicators.

The node “sustainability” is strongly related to “mergers”; however, instead of being related to “performance” it has a thicker line with “financial performance”. These relationships, together with the nodes of “smes”, “perspective”, and “ethics”, suggest trends in the development of sustainable practices or approaches as a means of achieving competitive advantage and thus improving the financial results of firms.

In addition to the co-occurrence network, VOS viewer software allows us to visualize density (see Figure 7). Each node has a color indicating the density of items at that point. Colors range from blue

to green to yellow. The keywords in the yellow color area appear more frequently and have higher weights. On the contrary, the lower the frequency and the weights, the closer the color of the point is to blue. Thus, from Figure 7, we can detect the research focus of M&A and sustainable practices: “sustainability”, “mergers”, and “performance”.

The top 5 keywords with their frequencies and total link strengths are shown in Table 6.

5. Discussion

The purpose of this article is to provide an overview and synthesis of research on M&A and sustainability. In order to fulfill this objective, we have carried out a bibliometric study to assess the academic impact as well as to determine the intellectual structure of the research topic. A total of 92 research articles found in the WoS database have been analyzed.

Evaluative techniques have been applied in order to assess the academic impact of the topic in terms of productivity and impact. Productivity can be addressed according to the historical evolution of publications. In this vein, the first article was published in 1982; however, it was not until 2007 that the topic experienced a growing trend. Maybe this resulted from the economic crisis and the interest of practitioners and academics in adapting to these new circumstances. Nevertheless, it is in the last few years—2014, 2016, 2018, and 2019—that research on sustainability in M&A processes has dramatically increased its presence in the literature, representing 54.34% of the articles.

Focusing attention on the most productive journals, only seven journals have published more than one article on the topic. Sustainability journal—Q2 in the Journal Citation Report (JCR)—stands out as the most prolific source on this subject with 11 articles, the next most productive one having just two articles. This is not surprising given that Sustainability is aimed at publishing research on the topic of environmental, cultural, economic, and social sustainability.

Among the authors with a higher number of articles are Dollery and Kortt, both coauthors in their three studies addressing the environmental and financial sustainability of M&A processes among municipalities. Mendez-Naya has also published three articles, mainly based on diverse factors influencing the sustainability of M&A processes.

Regarding the academic impact of the topic, the citation analysis allows us to detect the most prominent documents influencing research development in this field. The study of Young [44] entitled “Vertical Interplay among Scale-Dependent Environmental and Resource Regimes” is by far the most influential with 128 citations. The author highlights mergers as possible patterns that may arise from the interactions among scale-dependent environmental and resource regimes. The study reveals that mergers can easily become an excuse to impose the preferences of dominant actors, which may negatively affect environmental sustainability. On the other hand, the concentration of power in merger processes can also lead to difficulties in yielding outcomes of fairness or justice.

There are also highly cited papers exclusively focused on mergers [38,39], exploring the emergence and practices of M&A. Finally, there are also important studies addressing financial and environmental sustainability and green practices [41,43].

In addition to the evaluative techniques, this study has also applied relational techniques to identify patterns and detect hot topics. In order to do so, and aiming at presenting the information in a more visual way, this section has adopted a bibliometric mapping approach by using VOS viewer software [10].

The author co-citation analysis contributes to knowledge about the intellectual structure of M&A and sustainability as a research topic. The co-citation network of authors has shown four groups of authors. From these four groups, two groups of authors are particularly related. The first one includes key authors and works in the field of strategic management (for example, Porter or Teece) and the second one is focused on the application of theories such as the stakeholder and agency theories. Precisely, both theories analyze the role of corporate governance in strategic decision-making processes.

The co-citation map of journals highlighted three clusters. One of them included journals mainly related to financial research. The second one addresses research in strategy and management

theory. The third one is based on economics and sustainable issues. The most important journals in terms of citations and total link strength were the Journal of Cleaner Production and the Strategic Management Journal.

Regarding the topics of the documents analyzed through the network of keywords, the topics “mergers”, “performance”, and “sustainability” form the main core of the keywords. It is particularly relevant that academics seem to be more interested in the topic “mergers” against acquisitions. In any case, the topic “mergers” is strongly addressed with the two other main topics, “performance” and “sustainability”. In addition, “cooperation” and “innovation” seem to be important strategies in successful merger processes.

According to the network, “performance” seems to be crucial in the analysis of “mergers”. The growing importance of other methods for assessing performance beyond traditional indicators such as “technical efficiency” and “impact” should also be noted. These measures may be related to the preservation of resources, prosperity, and value for societies; in other words, the environmental, economic, and social pillars of sustainability. Finally, the topics “sustainability” in “mergers” seems to be usually analyzed together with “financial performance”, leading us to think of sustainability as an internal indicator for the firm rather than an instrument to harmonize business activities and its external context.

6. Conclusions

This article provides an overview and synthesis of the extant literature on M&A and sustainability. It aims to complement prior literature reviews and meta-analyses on the topic of M&A as well as sustainability. The analyses encompass a broad picture of the literature. We also advance several avenues for future research, trying to encourage researchers in developing their own studies.

In order to identify the main studies and research articles in the literature that links M&A and sustainability, we assessed its academic impact. It could be said that it is not particularly high; however, it has been growing since 2014. It should be noted that the topic is limited to specific journals addressing sustainability, rather than being published in more general ones. Neither does it seem that there are many authors at this moment focusing their efforts on the subject. In this regard, Dollery and Kortt focused their three articles on the environmental and financial sustainability of M&A processes in the public sector [29–31]. Conversely, the three articles of Mendez-Naya are more strategic- oriented, addressing the impact of external factors on the sustainability of M&A processes [32–34]. In addition to the most prolific authors, we found that the work of Young [44] is the most prominent study influencing research development in this field. Despite having been published in 2006, when the research topic was not yet at its peak, it has so far proved to be the most cited article. This may have to do with the fact that it addresses the consequences of diverse interactions among firms in terms of environmental impact, which is the best-known aspect of sustainability.

Aiming at addressing the patterns and hot topics in the field of M&A and sustainability, we determined the structure of the research area. In order to do so, we delved into the themes researched and diverse relational ties. The intellectual structure reveals a relevant trend that is the relatedness among authors in the field of strategic management and the ones addressing theories analyzing the role of corporate governance in strategic making-decisions process. This is consistent with the thematic organization of the research field according to the frequency of citations from two sources together. In this vein, the Journal of Cleaner Production and the Strategic Management Journal are cited together more frequently, meaning that there are similarities between their research areas. Finally, the effect on firm performance of sustainability issues in mergers seems to be a hot topic. This opens up research opportunities for scholars addressing performance measures beyond traditional indicators. In this vein, performance factors related to the three sustainability pillars can be an interesting path of research.

The main limitations of this study must be mentioned. The first limitation was the reduced sample of documents, which restricted the interpretation of our findings and did not allow other analysis such as the co-citation of documents. Second, only the database WoS was selected, which

sometimes includes articles without keywords, which may have reduced the number of results obtained. Finally, the interpretation of the maps is to a certain extent dependent on subjective estimation. Notwithstanding these limitations, we consider that this work helps stimulate further interest in M&A and sustainability research.

As can be seen, sustainable practices in M&A processes remains an evolving topic that requires further research and reflection. Thus, a possible future line of research could be the analysis of the literature in periods of 5 years, in order to check on its evolution. This is not possible at this moment, given the limited number of documents and the concentration in the last few years.

Author Contributions: Conceptualization, J.-L.R.-S. and F.E.G.-M.; writing—original draft preparation, J.-L.R.-S. and T.G.-T.; writing—review and editing, J.-L.R.-S. and E.P.-B.; visualization, J.-L.R.-S., F.E.G.-M. and T.G.-T.; supervision, J.-L.R.-S.; project administration, F.E.G.-M.; methodology, T.G.-T. and E.P.-B.; validation, J.-L.R.-S., E.P.-B., F.E.G.-M. and T.G.-T.; formal analysis, T.G.-T. and E.P.-B.; resources, F.E.G.-M. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the European Union under the LIFE Program, grant number: LIFE16ENV/IT/000307 (LIFE Force of The Future).

Conflicts of Interest: The authors declare no conflict of interest.

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