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Assessing the Scholarly Landscape: A Bibliometric Journey through Credit Rating Agency Research

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Abstract:

Credit Rating Agencies play a crucial role in the financial markets by providing independent assessments of borrowers' creditworthiness. Rating agencies give useful information about performance and creditworthiness of companies, which aids in reducing information asymmetry and it serve as a signal for the likelihood of default which allows investors and market participants to make informed decisions . It is considered as powerful institutions capable of influencing bond and stock prices. The credibility of rating agencies has been question due to their role in the 2008 financial crisis. Their credibility may be impacted by a number of reasons. The study reviewed literature added in credit-rating agency domain from January 2004 to October 2023. Bibliometric analysis is used to comprehend the existing literature. The review recouped 237 research articles on Credit Rating Agency from the Scopus database and envisioned the data using VOS viewer software and Biblioshiny from R studio. We found that most of the studies emerged as after-effects of financial crisis reported in 2008. We have provided a feasible research agenda to further explore credit-rating agency domain. The study not only enhanced the understanding of the scholarly landscape within the scope of the study but also provided a comprehensive assessment of the literature.

Keywords: Credit Rating Agencies, Bibliometric, Bradford's Law, Thematic map, Bibliometric coupling, Credibility.

1. Introduction

Credit Rating Agencies (CRAs) play a crucial role in the financial markets by providing independent assessments of borrowers' creditworthiness (Rowe, 2020), (Xiaodie & Cai, 2020). Investors, lenders, and other market participants use these assessments to measure the risk associated with investing or lending to a particular entity (Sajjad & Zakaria, 2018), (Xiaodie & Cai, 2020). Rating agencies give useful and credible information about performance and creditworthiness of companies, which aids in reducing information asymmetry between lenders and borrowers (Machek & Hnilica, 2013). Moreover, credit ratings serve as a signal for the likelihood of default which allows investors and market participants to make more informed decisions (Machek & Hnilica, 2013), (Xiaodie & Cai, 2020). Credit rating agencies are considered powerful institutions capable of influencing bond and stock prices (Machek & Hnilica, 2013). Their influence is derived from the rating they produce is utilized by investors and market participants to make informed decisions (Machek & Hnilica, 2013), (Xiaodie & Cai, 2020). These agencies not only assess the creditworthiness of entities but also have an impact on financial market regulation (Sajjad & Zakaria, 2018). With the rise of international credit markets, the importance of credit rating agencies has increased dramatically (Machek & Hnilica, 2013).

The credibility of credit rating agencies is a subject of much debated and scrutinised topic (Machek & Hnilica, 2013). Some economists argue that the judgments of rating agencies are overrated and they just follow the market rather than giving independent assessments. The credibility of rating agencies has been called into question due to their role in the 2008 financial crisis (Machek & Hnilica, 2013), (Xiaodie & Cai, 2020). Their credibility may be impacted by a number of reasons. A notable factor is the conflict of interest arising from the business model of credit rating agencies (Weitzner & Peridis, 2011), (Xiaodie & Cai, 2020). The issuer-pays model of income creates potential influence to assign more favourable ratings in order to attract business from the rated firms (Sajjad & Zakaria, 2018), (Xiaodie & Cai, 2020). This conflict of interest has the potential to compromise the objectivity and independence of the ratings provided by these agencies (Rowe, 2020). They operate within a market for services dominated by a few major player also contributed to credibility issue of rating agencies. Moreover, the expanded scope of ratings to include complex financial instruments has

raised concerns about the credit rating agencies' ability to appropriately analyze the risks of these instruments (Xiaodie & Cai, 2020). Credit rating agencies' credibility can be assessed based on their track record, transparency, methodology, and independence (Rowe, 2020).The study intends to bridge the gap currently existing: Bibliometric analysis on Credit Rating Agencies using both Vos viewer and R software with recent literatures taken from Scopus database.

Objectives

1. To audit the studies conducted in the area of credit rating agencies globally.
2. To measure the scholarly impact that helps researchers make decisions regarding scholarly output to gather the knowledge based on credit rating agencies.
3. To identify emergent themes in 'credit rating agencies' research and gaps in existing literature.

2. Methods

Bibliometric analysis was first introduced by Pritchard in his publication "Statistical Bibliography or Bibliometrics" (Zhang et al., 2022). The bibliometric method is used to explore the topic of 'credit rating agencies and credibility,' a popular method of reviewing literature where quantitative tools are applied to bibliographic data (Broadus, 1987). Bibliometric analysis is a powerful tool used to map and visualize scientific studies within a specific knowledge domain (Naderi & Shojaei, 2022). It helps to discover hidden connections and trends in the literature using advancements in computing technology, scientific indexing, and data visualization techniques (Hao et al., 2018). This analysis provides a systematic and quantitative examination of a large amount of literature, assisting researchers in determining leading authors, notable publications, and research collaboration patterns (Xie et al., 2023), (Hao et al., 2018). Furthermore, bibliometric analysis aids in identifying research directions, essential topics, and terms in a specific field (Kabyl et al., 2022). It facilitates in understanding the path and evolution of a subject area, providing insights into the research landscape and informing future research directions (Xie et al., 2023). It allows researchers to handle large quantities of bibliographic data while minimizing potential biases (Donthu et al., 2021). There are several types of bibliometric analysis that researchers can employ, depending on their research goals and objectives such as citation analysis, co-authorship analysis, journal impact etc (Sungur et al., 2020).

There are two types of bibliometric analysis techniques performance analysis and science mapping (Donthu et al., 2021). The performance evaluation discloses the publication trend, high-quality journals, leading authors, and publications with the most citations. Science mapping methods such as keyword analysis, thematic mapping, and bibliographical coupling were used to identify the intellectual structure. The most researched areas in this domain were found by keyword co-occurrence analysis using VOS Viewer software. The Bibliometrix R-package is used to generate a conceptual theme map that shows where the research streams are in terms of centrality and density (Aria & Cuccurullo, 2017), (Zupic, 2014). Clustering was performed using bibliographic coupling in VOS Viewer to further confirm the essential research themes (triangulation). Coupling discovered 42 top papers with at least 25 citations from six clusters. Recent articles were omitted since the clusters were found based on a high number of citations (articles with more than 25 citations were filtered for bibliographic coupling using VOS Viewer). To ensure a comprehensive review, articles published from 2020 to 2023 were considered for identifying future research directions.

2.1 Database, Keywords and Inclusion Criteria

Research papers on 'Credit Rating Agencies' are obtained from Scopus database. Finding suitable keywords is crucial in the literature review; the researchers chose some papers from the Scopus database and found relevant keywords related to the topic. Later a combination of keywords was developed using Boolean operators followed by other academics (Bartolini et al., 2019; Kaur et al., 2021; Singh & Walia, 2022). The Scopus query used was: ALL ("credit rating agencies" AND "credibility" OR "reputation") AND (LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "BUSI")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (EXACTKEYWORD , "Credit Ratings"). The study restricted the documents to economics and business subject areas as directed by (Patria et al., 2019) and the language to English alone. The search resulted 237 documents spanning the years 2004 to 2023.

2.2 Data analysis

Biblioshiny, a comprehensive method of the Bibliometrix R package (Aria & Cuccurullo, 2017) that efficiently performs bibliometric analysis, (Moral-muñoz et al., 2020) was used in the study. A bibliometric study presents the publishing trend over time. It identifies the most producing and high-quality Journal, the most influential authors and countries of origin, and the keywords used the most. The basis for journal and author analyses is provided by the h-index and g-index, total citations, and the number of papers that prioritise quality over quantity. The h-index considers citations and the number of publications to analyze performance (Donthu et al., 2021), while g-index inherits all the qualities of h-index and more (Eggue, 2006). The software VOS Viewer was used for both bibliographic coupling and keyword co-occurrence analysis since to its excellent visualisation (Moral-muñoz et al., 2020) and ability to graphically represent the nodal network using two standard weights, namely strength and number of links (Donthu et al., 2021).

3. Results

3. 1. Main information about the bibliometric data

Table 1: Main information about the bibliometric data

Description	Results
Timespan	2004:2023
Sources (Journals, Books, etc)	183
Documents	321
Annual Growth Rate %	21.43
Document Average Age	5.56
Average citations per doc	18.18
References	16794
AUTHORS	
Authors	653
Authors of single-authored docs	76
AUTHORS COLLABORATION	
Single-authored docs	85
Co-Authors per Doc	2.34
International co-authorships %	26.79

The relevant information about the bibliometric data presented in Table 1 shows that papers in 'credit rating agencies' began in 2004 and Scopus retrieved 321 documents from 183 sources. Sources such as journal articles or book chapters indicate where documents are obtained. There are 85 single-authored documents in all, with 76 authors contributing. Each document had an average of two authors, with 2.34 co-authors.

3. 2. Journal Quality analysis

To evaluate the performance of a journal, it is important to consider several key metrics (Teplova et al., 2022). Examining the journal's impact factor can provide how often articles from the journal are cited in other scholarly works (Brian Paltridge, 2016). Different approaches can be used to measure performance of a journal. Here number of publications, citations and the h-index is used to assess a journal's performance.

Table 2 shows the top 10 journals with the highest h-index and additional metrics such as the G index, total citations, and the number of articles. The h-index of the Journal of Financial Economics is 13 and has the most articles (14) as well has the highest g index (14). While the h-index of the Journal of Banking and Finance and Management Science are 8 and followed by Journal of Corporate Finance with h index value 7.

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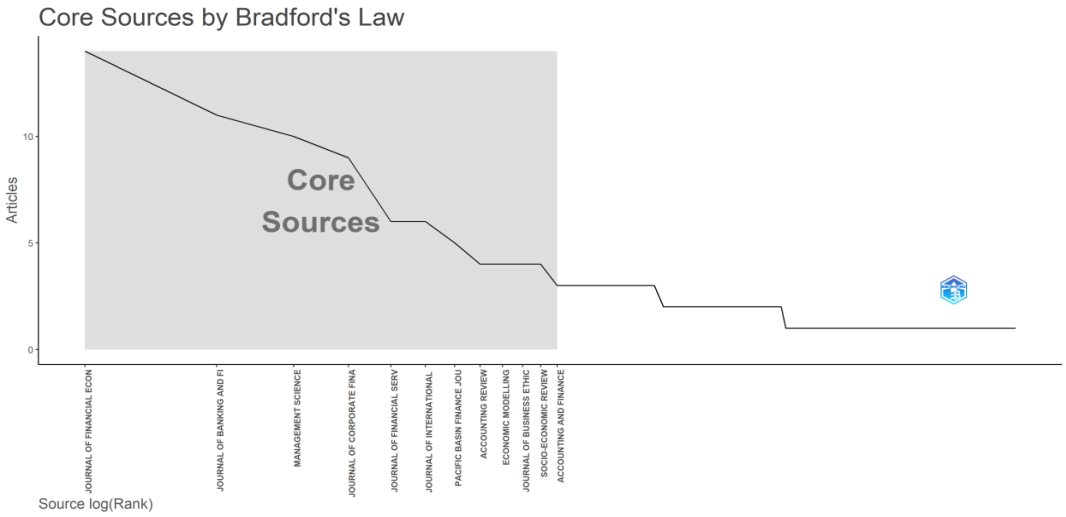
Table 2: Top 10 performing Journals in 'Credit Rating Agency' research

Journal	h index	g index	TC	Number of Articles
JOURNAL OF FINANCIAL ECONOMICS	13	14	967	14
JOURNAL OF BANKING AND FINANCE	8	11	296	11
MANAGEMENT SCIENCE	8	10	258	10
JOURNAL OF CORPORATE FINANCE	7	9	147	9
ACCOUNTING REVIEW	4	4	135	4
JOURNAL OF BUSINESS ETHICS	4	4	447	4
INTERNATIONAL REVIEW OF FINANCIAL ANALYSIS	3	3	33	3
JOURNAL OF ACCOUNTING AND ECONOMICS	3	3	155	3
JOURNAL OF ECONOMIC BEHAVIOR AND ORGANIZATION	3	3	12	3
JOURNAL OF INTERNATIONAL FINANCIAL MARKETS, INSTITUTIONS AND MONEY	3	4	24	6

3.3. Bradford's Law

Bradford's Law is used to identify the core journals which publish papers in credit rating. From the literature, the core journals which were identified that publish in the credit rating area are 'Journal of Financial Economics', 'Journal of Banking and Finance' and 'Management Science'.

Figure 1: Bradford's Law of Core publication and actual distribution of literature



The above figure indicates that the literature related to credit rating is in line with Bradford's Law.

3.4. Author Analysis

3.4. a. Leading Authors

Table 3 lists the most well-known authors in the field of Credit rating agencies. The top 10 authors were ranked using the h-index. With an h-index of 3, Bonsall SB is ranked first and at the top when considering the g index, followed by HU X

, Shi J, Driss H and Ozerturk S, each with 3 h indexes. Attig N's study is one of the leading authors in this domain, with 371 citations from two publications.

Table 3: Most influencing authors

Authors	h index	g index	Total Citation	Number of Publications
BONSALL SB	3	5	89	5
DRISS H	3	3	25	3
HU X	3	5	37	5
OZERTURK S	3	3	12	3
SHI J	3	4	37	4
ABAD P	2	4	21	4
AGARWAL S	2	2	92	2
ALSAKKA R	2	2	25	2
AP GWILYM O	2	2	25	2
ATTIG N	2	2	371	2

3.4. b. Publication by Countries

Table 4: Publication by different countries

Country	Articles	SCP	MCP	Total citation	Average Article Citations
USA	45	36	9	1505	33.4
CHINA	21	12	9	55	2.6
UNITED KINGDOM	15	8	7	312	20.8
GERMANY	12	10	2	150	12.5
KOREA	8	7	2	18	2
AUSTRALIA	8	4	4	80	10
FRANCE	7	2	5	341	48.7
ITALY	7	6	1	28	4
SPAIN	7	6	1	70	10
INDIA	6	6	0	49	8.2

Table 4 lists the nations where the authors conduct the most research on credit rating agencies. Based on the corresponding authors' countries, the United States, China and the United Kingdom are the top three countries in the table. The Multiple country Publications (MCP) and Single country Publications where collaborations are from a single country only are also represent in the above table. Regarding author writings and collaborations, 71.33 percent of articles from the top 10 countries are authored through intra-country collaborations (SCP). It is a sign that most writers exclusively work on SCP for their articles. France is odd in these data, with five of seven papers created in Inter-country collaboration (MCP). The United States and China are better positioned in MCP than other countries.

3.5. Author Co-citation Analysis

The author co-citation network was applied to particularize the structure information (Ding et al., 1999). Author co-citation analysis is used in this bibliometric analysis to gain a clear insight into a) ideas and approaches in domine b) their connections c) integration to their study.

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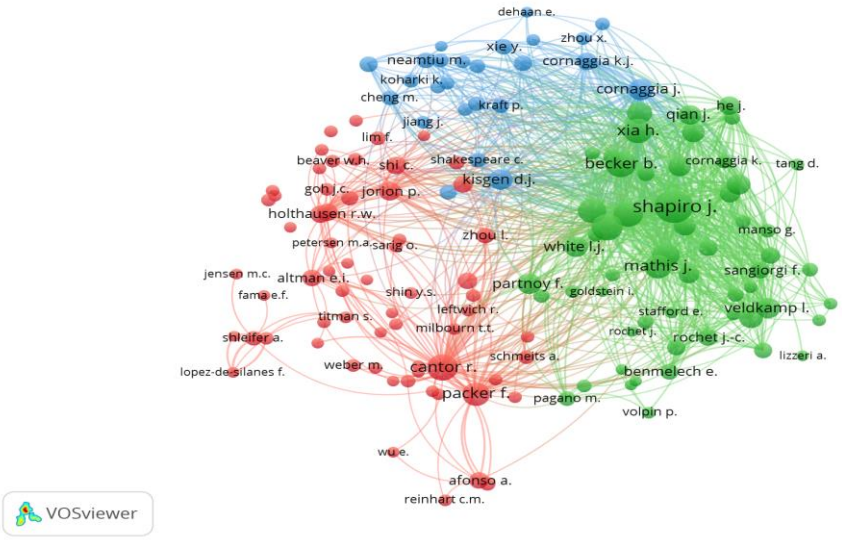
Figure 2: Author Co-citation network generated using VOS viewer.



The threshold of mimimum 20 citations per author is met by 146 of the 9600 authors. A co-citation relationship is represented by nodes, and each node is connected by a link, the strengthened link is indicated by its thickness (Nasir et al., 2021). There are three clusters (altogether 146 items) identified in this category: Red, Green and Blue.

A co-citation relationship is indicated by nodes and each node is connected through the link, the cluster red indicates the most important among all the clusters in terms of citations and link strength with 64 authors. Cantor r. with 121 citations and 3802 total link strength , Packer f. with 144 citations and 2870 total link strength are the main authors comes under this cluster.

The cluster in green is the second largest in terms of citations and link strength and it consist of 56 authors. Shapiro j. with 186 citations and 6882 total link strength, Becker b. with 118 citations and 4643 total link strength, Xia h. with 103 citations and 4401 total link strength are the prominent authors comes under this cluster.

The blue cluster was the third cluster with 23 authors. The prominent authors based on total link strength and numbers of citations are Cornaggia j. (3535 link strength and 81 citations in total), Kisgen d.j. (2908 link strength and 73 citations in total) and Cornaggia k.j. with total link strength 2363 and 55 citations.

3.6. Thematic Map

A useful tool in bibliometric analysis is theme mapping, which aids researchers in understanding about the relationships between author keywords. Author keywords were used to identify themes in the 'Credit rating agencies' field. Based on Callon's centrality and density assessments (Callon et al., 1983), the principal themes are divided into four groups: basic themes, motor themes, niche/isolated themes, and emerging or declining themes. Centrality measures the degree of interaction of a network with other networks, and this value measures the importance of a theme in the development of the entire research field analyzed (Viedma-del-jesús & López-herrera, 2012). Density, on the other hand, measures the internal strength of the network, and this value can be interpreted as a measure of the theme's development (Viedma-del-jesús & López-herrera, 2012). Figure 3 displays the thematic map of the 'Credit rating agencies' research field.

Figure 3: Thematic Map created with Biblioshiny (R studio)

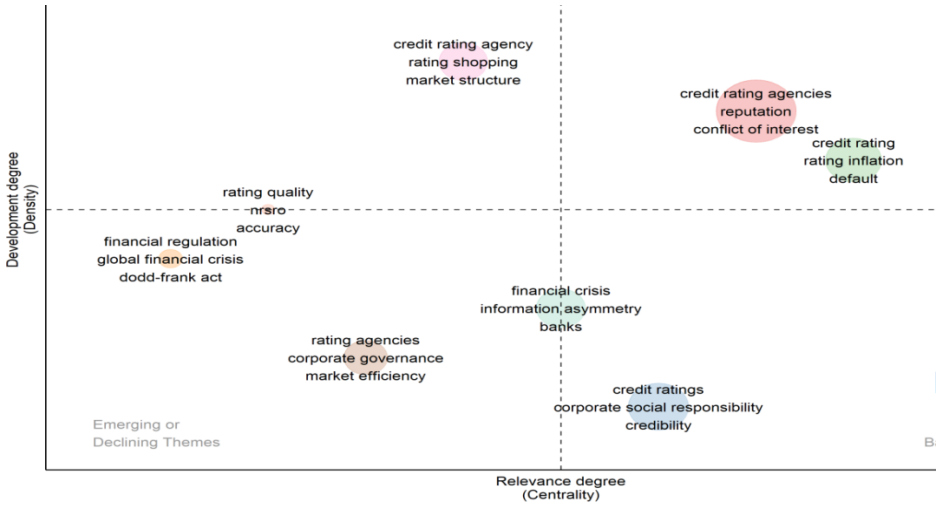


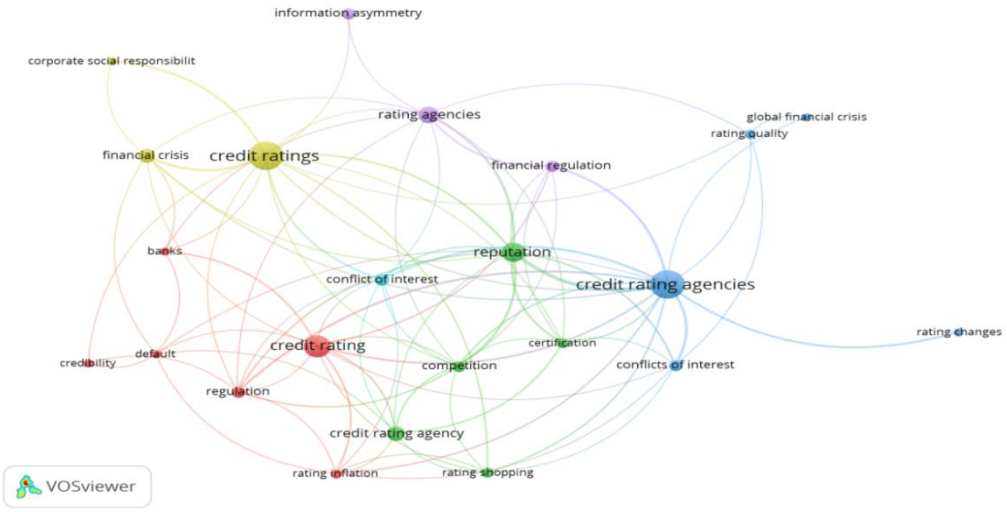
Table 5: The Table showing themes with their indication

Themes	**Items**	**Indication**
Motor theme (upper right)	Reputation, Conflict of interest, Rating inflation, Default	Well developed and important
Niche/isolated themes (upper left)	Market structure, Rating quality	Unimportant but well developed
Emerging or declining themes (lower left)	Corporate Governance, Market efficiency, global financial crisis, dodd-frank act	Weakly developed
Basic theme (lower right)	Credit ratings, Corporate social responsibility, Credibility	Important but not developed

3.7. The Co-occurrence Analysis:

The co-occurrence network is analyzed and demonstrated using the author keyword in the figure 4. The co-occurrence method was developed in 1980, allowing academics to employ it in bibliometric analysis as well as correlated fields (Ding et al., 2001). The nodes in Figure represent author keywords, and the size represents the number of occurrences (Li & Xu, 2021). The link between two keywords represents their simultaneous presence on a single document, and the thickness between nodes represents the frequency of co-occurrences of the two keywords (Li & Xu, 2021).

Figure 4: Co-occurrence network of author keywords by setting the threshold to 5 created using VOS viewer.

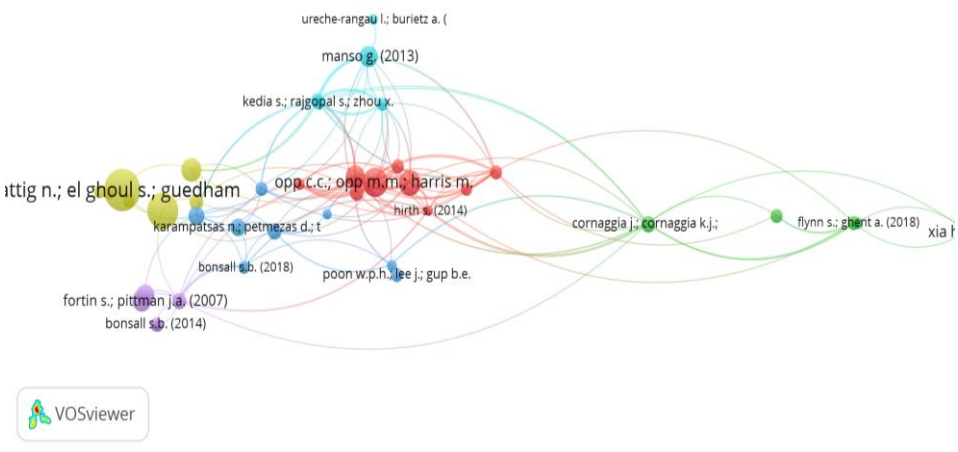


The co-occurrence network of author keywords is depicted in Figure 4. The keywords repeated 5 times were only included. Total keywords were categorized into six groups using this network. The first cluster is about *credibility and Regulation* highlighted in red. The second cluster is associated with *competition* which is labelled in green; the third cluster is depicted in blue and related to *financial crisis and rating quality*. The fourth cluster, attached to the *corporate social responsibility* highlighted in yellow. Fifth cluster is related to *financial regulation and information asymmetry* highlighted in violet and sixth cluster highlighted in dark blue which related to *conflict of interest*.

3.8. Triangulation using Bibliographical Coupling

Bibliographic coupling occurs when two works reference a third work in their bibliographies. If two documents cite one or more documents in common, they are termed bibliographically related, and the two texts are likely to be from the same domain. Bibliographic coupling was performed using VOS Viewer software to understand the domain of Credit rating agencies better and identify the emerging themes. "Documents" is selected as the unit of analysis using the "full counting" method. Coupling found 42 top publications from four clusters having at least 25 citations and grouped into six clusters (Figure 6). Cluster 1 is represented by 9 documents in red, Cluster 2 by 8 documents in green, Cluster 3 by 8 documents in dark blue, Cluster 4 by 7 documents in yellow, Cluster 5 by 5 documents in violet and Cluster 6 by 5 documents in light blue.

Figure 6: Bibliographic coupling of documents



Cluster 1 covers the implications of credit rating agencies rating quality and competition, thereby validating the theme "*rating quality and competition*" and it is identified by the co-keyword analysis. The Focus area of the second cluster is conflict of interest. The issuer-pays model of income creates potential influence to assign more favourable ratings in order to attract business from the rated firms. The cluster thus validates the theme "*Conflict of interest*" identified from the co-keyword analysis and thematic mapping. Some leading articles in cluster 2 include: 'Can investor-paid credit rating agencies improve the information quality of issuer-paid rating agencies?' by (Xia, 2014), 'Opacity, Credit Rating Shopping, and Bias' by (Sangiorgi et al., 2016) and other articles. Cluster 3's primary focus is Reputation and Regulation of credit rating agencies. Some of the articles in cluster 3 are: 'Tightening credit standards: the role of accounting quality' by (Jorion et al., 2009), ' Regulation of credit rating agencies' by (Stolper, 2009), and others. Cluster 3 validates the "*Reputation and Regulation*" theme identified from the co-keyword analysis and thematic mapping. Articles in cluster 4 examine various aspects of corporate Social Responsibility and their influence on credit rating and firm value. The leading article in Cluster 4 is 'Corporate Social Responsibility and Credit Ratings' by (Attig et al., 2013). The cluster validates the "*Corporate Social Responsibility*" theme identified from the thematic map and co-keyword analysis. The Focus area of the 5th cluster is financial crisis. Role of credit rating agencies in financial crisis are discussed in this cluster. The cluster thus validates the theme "*financial crisis*" identified from the co-keyword analysis and thematic mapping. Some leading articles in cluster 5 include: 'Markets: A Review of Research Evidence on Selected Criticisms of the Agencies' by (Frost, 2007), 'The Financial Crisis and Corporate Credit Ratings' by (DeHaan, 2016) and other articles. Articles in cluster 6 examine various aspects of credibility of credit rating agencies and their influence in firm value. The leading articles in Cluster 6 are ' Feedback Effects of Credit Ratings' by (Manso, 2013), 'Does Rating Analyst Subjectivity Affect Corporate Debt Pricing?' by (Fracassi et al., 2015), 'Large shareholders and credit ratings' by (Kedia et al., 2017). The cluster validates the "*Credibility*" theme identified from the thematic map and co-keyword analysis.

Figure 6 depicts the six clustered themes discovered through bibliographic coupling. Table 6 displays the final clusters as well as the articles in each cluster. A link in bibliographic coupling analysis refers to the association between two articles: the more robust the link, the higher the strength (Van Eck & Waltman, 2014). VOS viewer examines all connections associated with a specific article and computes their strength, referred as total link strength. The number of links and total link strength have been utilised as weighted characteristics to indicate the evolution and importance of an article in a specific cluster. As a result, when sorting the articles by citation count, their importance is signified by the weights (links and total link strength).

Table 6: Clusters

Cluster	Author and Year	Title of the article	Total Link Strength	Citations
1	(Hirth, 2014)	Credit rating dynamics and competition	20	25
	(Efing & Hau, 2014)	Structured debt ratings: Evidence on conflicts of interest	16	32
	(Dimitrov et al., 2014)	Impact of the Dodd-Frank act on credit ratings	30	103
	(Goel & Thakor, 2014)	Information reliability and welfare: A theory of coarse credit ratings	25	42
	(Duff & Einig, 2009)	Understanding credit ratings quality: Evidence from UK debt	3	35

		market participants		
	(Duan & Laere, 2012)	A public good approach to credit ratings – From concept to reality	13	40
	(Opp et al., 2013)	Rating agencies in the face of regulation	33	179
	(Bar-isaac & Shapiro, 2013)	Ratings quality over the business cycle	27	144
	(Doherty et al., 2012)	Information effect of entry into credit ratings market: The case of insurers' ratings	30	57
2	(Agarwal et al., 2016)	The Information Value of Credit Rating Action Reports: A Textual Analysis	2	46
	(Flynn & Ghent, 2017)	Competition and Credit Ratings After the Fall	13	30
	(Bruno et al., 2016)	Does Regulatory Certification Affect the Information Content of Credit Ratings?	14	40
	(Sangiorgi et al., 2016)	Opacity, Credit Rating Shopping, and Bias	4	41
	(Cornaggia et al., 2016)	Revolving doors on Wall Street	18	59
	(Xia, 2014)	Can investor-paid credit rating agencies improve the information quality of issuer-paid rating agencies?	4	110
	(Williams & Martinez, 2012)	Government Effectiveness, the Global Financial Crisis, and Multinational Enterprise Internationalization	1	25
3	(Iv et al., 2018)	Are Credit Ratings More Rigorous for Widely Covered Firms?	12	39
	(Karampatsas et al., 2014)	Credit ratings and the choice of payment method in mergers and acquisitions	4	62
	(Stahl & Berlin, 2016)	Certification and Market Transparency	4	25
	(Bosch & Steffen, 2011)	On syndicate composition, corporate structure and the certification effect of credit ratings	10	44
	(Lee & Gup, 2009)	Do Solicitations Matter in Bank Credit Ratings? Results from a Study of 72	1	42

		Countries		
	(Mariano, 2012)	Market power and reputational concerns in the ratings industry	9	28
	(Jorion et al., 2009)	Tightening credit standards: the role of accounting quality	12	71
	(Stolper, 2009)	Regulation of credit rating agencies	10	59
4	(Dupont & Karpoff, 2020)	The Trust Triangle: Laws, Reputation, and Culture in Empirical Finance Research	2	39
	(Bhattacharya & Sharma, 2019)	Do environment, social and governance performance impact credit ratings: a study from India	4	37
	(Lauesen, 2013)	CSR in the aftermath of the financial crisis	1	36
	(Attig et al., 2013)	Corporate Social Responsibility and Credit Ratings	4	368
	(Mcandrews & Rochet, 2009)	Rating the raters : Are reputation concerns powerful enough	4	266
	(Ã & Neamtiu, 2009)	An empirical analysis of changes in credit rating properties: Timeliness, accuracy and volatility	9	112
	(Pagano & Volpin, n.d.)	Credit ratings failures and policy options	3	58
5	(DeHaan, 2016)	The Financial Crisis and Corporate Credit Ratings	16	56
	(Iv, 2014)	The impact of issuer-pay on corporate bond rating properties: Evidence from Moody's and S&P's initial adoptions	1	40
	(Besedovsky, 2020)	Financialization as calculative practice: The rise of structured finance and the cultural and calculative transformation of credit rating agencies	1	32
	(Fortin, 2007)	The Role of Auditor Choice in Debt Pricing in Private Firms	2	104
	(Frost, 2007)	Credit Rating Agencies in Capital Markets: A Review of Research Evidence on Selected Criticisms of the Agencies	3	91

6	(Ureche-rangau & Burietz, 2013)	One crisis, two crises…the subprime crisis and the European sovereign debt problems	1	26
	(Fracassi et al., 2015)	Does Rating Analyst Subjectivity Affect Corporate Debt Pricing?	21	39
	(Kedia et al., 2017)	Large shareholders and credit ratings	34	44
	(Kedia et al., 2014)	Did going public impair Moody's credit ratings?	34	34
	(Manso, 2013)	Feedback Effects of Credit Ratings	19	91

4. Future research directions

One of the study objectives is to identify future research directions. The articles published from 2020-2023 were therefore reviewed and thematic map was utilised to identify the emergent themes in the field in credit rating. This will be beneficial to researchers, academicians, policymakers, and experts. Dodd-Frank involved several provisions for CRAs that fundamentally altered the credit rating process. The effects of the Dodd-Frank Act ("Dodd-Frank") on determinants of credit ratings are an area for conducting future research. Future studies may consider the influence of litigation the on Credit rating agencies' behavior and the quality of credit ratings. Additionally, future research can investigate how to design contingent fee scheme to align incentives of all stakeholders and achieve desirable outcomes for the market. Using blockchain technology in credit rating industry to promote an innovative bond-pays model is also a new area for conducting research. The topics such as Sukuk credit ratings, media coverage affects on credit rating change decisions, impact of social media on credit rating agency practices, credit rating and shareholder value creation, credit rating and different aspects of corporate governance are the other fields which can be considered for future research.

5. Conclusion

The paper systematically analyzes the literature on credit rating agencies by integrating bibliometric analysis and synthesis of the latest research articles. The bibliometric analysis created a comprehensive picture of the data, identified the journal quality, countries of origin, most cited papers, and most frequently used keywords. The study demonstrates that the research theme is receiving increased attention among researchers and recommends that future researchers explore different aspects of credit rating as the theme is emerging and relevant in the globalized era. The literature analysis also identified clusters of related keywords, including credibility, Regulation, competition, financial crisis, rating quality, corporate social responsibility, financial regulation, information asymmetry, conflict of interest. Moreover, the study identified emergent themes from thematic map and synthesizing the latest articles published in the last four years. The paper recommends that future researchers explore these themes to advance research in this field further. The theoretical contributions of the paper could assist researchers in focusing on the most recent developments, and the practical contributions could aid regulators and policymakers in their decision-making.

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