

Review

The Conceptual, Social, and Intellectual Structure of the Financial Information/Accounting Manipulation Literature: A Bibliometric Analysis

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Abstract: This study presents a comprehensive bibliometric analysis of studies on financial information/accounting manipulation. The dataset of research includes 1.266 studies from the Web of Science database for the period 1991–2023. All studies included in the research contain either the term ‘financial information manipulation’ or ‘accounting manipulation’ in the topic (title, abstract, or keywords). The bibliometric network mapping technique was used for the analysis of the data. The analysis was conducted utilizing the Biblioshiny interface of the R package programs Bibliometrix and Vosviewer. The results pointed out a notable upward trend in the publication and citation rates of financial information/accounting manipulation studies over the last two decades. Several key findings were identified. Firstly, a substantial rise in research output on financial information/accounting manipulation was observed, particularly after 2000, driven by global financial scandals. Secondly, prolific contributors to this field include authors such as Valaskova and Durana. Thirdly, the United States leads in research output, with significant contributions from institutions like the State University System of Florida and the State University System of Ohio. Lastly, *The Accounting Review* was identified as the most prolific journal in this domain, with the *Journal of Accounting Economics* being the most impactful based on citations. The most frequently used keywords indicate that the research topics focus on earnings management as a method of manipulation, fraudulent financial reporting, and the relationship with corporate governance. The comprehensiveness of the bibliometric data lends itself to a further examination of how financial information/accounting manipulation has progressed as a subject in the literature since the 2000s. In addition, this study reveals the social and intellectual structures of the issue, the key research streams, and potential research directions for future research.

Keywords: financial information manipulation; accounting manipulation; fraudulent financial reporting; bibliometric analysis; WoS database



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1. Introduction

Financial statements allow investors to make predictions about the future by providing information about the past and current situation of the business. They are also one of the fundamental tools used when making investment decisions in capital markets. Additionally, financial statements are closely monitored both for the correct accrual of taxes for the state and for determining the credibility of the company for creditors. Therefore, it is crucial for financial information users and decision makers that the information in financial statements reflects the truth, is understandable, and contains quality information. In this context, financial statements should be presented in compliance with Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS) to ensure they are true, impartial, and transparent. However, by exploiting the flexibility and gaps in these principles and standards, differences in financial information can be created, and information can be manipulated (Akman and Bitlisli 2021).

Financial information/accounting manipulation occurs when companies take advantage of the flexibility in reporting under GAAP to make their financial situation and operating results appear different from reality or by exceeding this flexibility and manipulating financial information in violation of regulations and standards (Küçüksözen and Küçükkocaoğlu 2004). Studies have shown that financial information/accounting manipulation is carried out using earning management, income smoothing, big bath accounting, creative accounting practices, aggressive accounting, and fraudulent financial reporting methods. Earnings management is the use of managerial discretion in the accounting process to present an economic reality that differs from the actual situation, with the intent to mislead stakeholders (Healy and Wahlen 1999). Earnings management is a deliberate practice carried out within the framework of generally accepted accounting principles to achieve a desired level of reported earnings (Gunny 2010; Suffian et al. 2015). This method stems from the flexibility of accounting standards, principles, and concepts that allow managers to interpret them in ways that serve their interests, thereby putting information users at risk (Healy 1985). Teixeira and Rodrigues (2022) emphasize that earnings management is related to corporate governance, institutional factors, and information quality and state that this method allows firms to conceal their true economic performance by affecting financial statements and to influence capital markets, creditors, and financial institutions by hiding critical information that stakeholders need to make informed decisions. Earnings management practices involve financial information/accounting manipulations within the scope of generally accepted accounting principles, while financial information manipulations outside these principles fall under the category of fraudulent financial reporting (Schipper 1989; Stolowy and Breton 2004). Fraudulent financial reporting is a deliberate attempt by firms to mislead and deceive all users of financial information, especially investors and fund providers, by mispreparing financial statements and sharing this incorrect information with the public. Fraudulent financial reporting is the display of a well-designed plan by knowledgeable individuals who intend to deceive the capital market (Rezaee 2005).

Another manipulation method employed is creative accounting. Creative accounting is generally defined as the use of methods that exploit gaps in accounting standards and laws to present a firm's financial position and operating results as better than they actually are (Yüksel and Kayalı 2019). This method is the border between alternative approaches permitted by law and fraudulent financial reporting (Timofte et al. 2020). Creative accounting is legal but against the spirit of the law. When conducted in good faith, it can even be a tool for representing a realistic image. However, if these practices are conducted for personal gain, it can be said that this is closer to fraud (Ioana and Ioan 2018). Dumitrescu (2014) states that creative accounting is a deceptive practice because it does not reflect the real situation and financial performance of the firm. Therefore, Bhasin (2015) suggests that creative accounting practices should be treated as a serious crime, and therefore, accounting bodies, courts, and other regulators should take very strict punitive measures to stop these practices. Income smoothing is the deliberate attempt by managers to use reporting discretion to stabilize fluctuations in a firm's realized earnings (Chen 2013). Managers may tend to shift future earnings to the current period when the firm's current performance is below expectations, and conversely, when future performance is expected to be weak, they may tend to shift current period earnings to the future (DeFond and Park 1997). Fudenberg and Tirole (1995) state that managers may resort to this method to eliminate the possibility of dismissal and to protect their personal interests. Another manipulation method, big cleansing accounting, is usually expressed as the removal of existing inefficient assets from the balance sheet and inventory by writing them off as expenses during periods of management change in businesses. This gives the impression that previous periods and old managers left the business in a more harmful way than the current situation. In this way, the new management is shown to be more successful than it actually is (Küçüksözen and Küçükkocaoğlu 2004). Aggressive accounting is the conscious selection and coercive application of different accounting methods and policies, without considering the requirements of accounting legislation and generally accepted

accounting principles, in order to achieve planned results and generally increase period profit (Mulford and Comiskey 2002). Elitaş (2013) defines aggressive accounting as a method in which unrealized or undecided incomes are recorded and the expenses of the period are transferred to future periods by forcing accounting standards and policies within the scope of embellishing the financial statements of the company.

The decision to manipulate firms' financial information is affected by internal factors such as management ownership, leverage ratio (Khafid and Arief 2017; Setyoputri and Mardijuwono 2020), and firm size (Barth 2018; Djalil et al. 2017). Hlawiczka et al. (2021)'s study reveals that the partnership structure and leverage ratio are effective for earnings management. Khafid and Arief (21) and Setyoputri and Mardijuwono (2020) emphasize in their studies that there is a positive relationship between management ownership and earnings management, and as management ownership increases, the probability of involvement in earnings management increases. Similar results were reached for the leverage ratio. As the leverage ratio increases, management will continue to increase firm profits, and lenders will continue to provide loans to the company. In this context, it is revealed that there is a positive relationship between the leverage ratio and earnings management. Siekelova et al. (2020) state that the likelihood of manipulation increases as firm size grows. However, Barth (2018) suggests a negative relationship between firm size and earnings management. This could be due to larger firms being more closely monitored by external stakeholders, leading them to provide more reliable financial information (Mahrani and Soewarno 2018). On the other hand, Setyoputri and Mardijuwono (2020) and Hlawiczka et al. (2021) find that there is no relationship between firm size and earnings management in their studies. In addition, Hlawiczka et al. (2021) state that the decision to manipulate financial information by firms can be influenced by external factors such as the cultural, social, and legal environment in which the firm operates.

Such manipulation is carried out with the aim of mitigating tax burdens, reducing perceived financial risk (Özcan 2019), lowering the cost of borrowing, reducing political costs, and increasing incentive premiums and stock prices (Akman and Bitlisli 2021). It has been stated that the main objective of manipulation is to mislead investors in the capital market (Stolowy and Breton 2004). In this objective, the earnings per share are increased through earnings management, and financial information manipulations are made to affect the debt–equity structure. Cugova and Cug (2019) state that creative accounting practice is based on reasons such as managers' desire to show themselves better than they really are, valuation problems, investor pressure, the impact of the company's activities on the environment, and risk reduction. In the study conducted by Dechow et al. (1996), it is stated that managers turn to fraudulent financial reporting in order to receive more bonuses and salaries and to earn money in different ways. On the other hand, Reischmann (2016), in the study conducted in 27 OECD countries, reveals that even governments shape the budget balance before elections with creative accounting methods.

Regardless of the reason, when a company publishes financial statements that do not fairly present its financial situation and performance, it misleads investors (Öğüt et al. 2009), directs resources to wrong and inefficient investment areas (Stolowy and Breton 2004), and undermines confidence in financial markets. It also imposes significant additional costs on economies, and measuring these costs is an incredibly difficult endeavor (Isa 2011). Studies in the literature (Martins and Ventura 2020; Assenso-Okoko et al. 2021) show that firms with a strong corporate governance structure are effective in reducing the likelihood of fraudulent financial information, either directly or indirectly, by reducing the likelihood of earnings manipulation. Shafer (2015) suggests that organizational efforts to improve the ethical climate and emphasizing the importance of corporate ethics and social responsibility can reduce the prevalence of earnings manipulation. In another study by Kaya and Yazan (2017), it is suggested that corporate social responsibility practices limit earnings management, and accordingly, the quality of accounting information may increase.

Consequently, both researchers and academicians have shown great interest in the subject, and many studies have been conducted on the aims, methods, detection, and

prevention of financial information manipulation. There are also bibliometric studies in the literature that evaluate these studies in general. For instance, [Timofte et al. \(2020\)](#) conducted a bibliometric analysis of studies on creative accounting spanning from 1976 to 2020. Similarly, [Safta et al. \(2021\)](#) focused on the methods employed in detecting financial information manipulation, examining studies from 1975 to 2021. [Hlawiczka et al. \(2021\)](#) analyzed methods associated with ‘creative accounting’, ‘revenue management’, and ‘fraudulent accounting’ across studies from 1969 to 2021. [Teixeira and Rodrigues \(2022\)](#) conducted a bibliometric analysis on earnings management, covering research conducted from 1900 to 2020. Furthermore, [Suffian et al. \(2023\)](#) performed a bibliometric analysis on earnings management, reviewing studies published between 1986 and 2021.

The aim of this study is to identify the main themes and trends in scientific publications on financial information/accounting manipulation and to identify gaps in the literature.

Unlike previous studies, this study will provide a comprehensive understanding of the general profile of academic studies published on financial information/accounting manipulation, rather than focusing on a specific manipulation method or manipulation detection methods. This study contributes to the existing literature by analyzing the conceptual, social, and intellectual structure of academic studies published on financial information/accounting manipulation. This research also contributes to the development of scientific knowledge by providing a systematic review of the literature on financial information/accounting manipulation.

In this study, answers to the following questions are sought:

- (1) What is the number of publications and citations on financial information/accounting manipulation by year?
- (2) Who are the most active authors in this field?
- (3) In which country, institution, and source were the most publications on the subject made?
- (4) Which is the most cited article on financial information/accounting manipulation?
- (5) What is the conceptual structure of the literature on financial information/accounting manipulation?
- (6) What is the social structure of the literature on financial information/accounting manipulation?
- (7) What is the intellectual structure of the literature on financial information/accounting manipulation?

In this context, research on financial information/accounting manipulation from 1991 to 2023 was examined both quantitatively and qualitatively from a broader perspective to fill the research gaps in this area.

2. Materials and Methods

This study employed the bibliometric analysis method to align with its research objectives. The bibliometric analysis method has since been widely used in scientific research to help review knowledge in many disciplines ([Abad-Segura et al. 2020](#)) (p. 6). Bibliometrics serves as a tool to assess the advancement of scientific disciplines through the analysis of intellectual, social, and conceptual structures and to identify research trends and patterns ([Zupic and Čater 2015](#); [Martínez-García et al. 2023](#); [Merigó et al. 2015](#)). This statistical method facilitates the identification, organization, and analysis of key components within specific research domains, offering a comprehensive overview of pertinent documents ([Velasco-Munoz et al. 2018](#), p. 2), ([Laengle et al. 2017](#), p. 804). Moreover, bibliometrics enables the evaluation of study quality, analysis of primary research areas, and projection of future research directions ([Yu et al. 2020](#), p. 2). Notably, bibliometric analysis has gained traction beyond academia, being increasingly utilized in global institutional and university rankings ([Ellegaard and Wallin 2015](#), p. 1809). The bibliometric analysis method is widely used in the fields of biology, energy, engineering, medicine, and management. In recent years, the use of bibliometrics in accounting research has become widespread.

Figure 1 shows the methodology employed in the bibliometric analysis of the financial information/accounting manipulation literature.

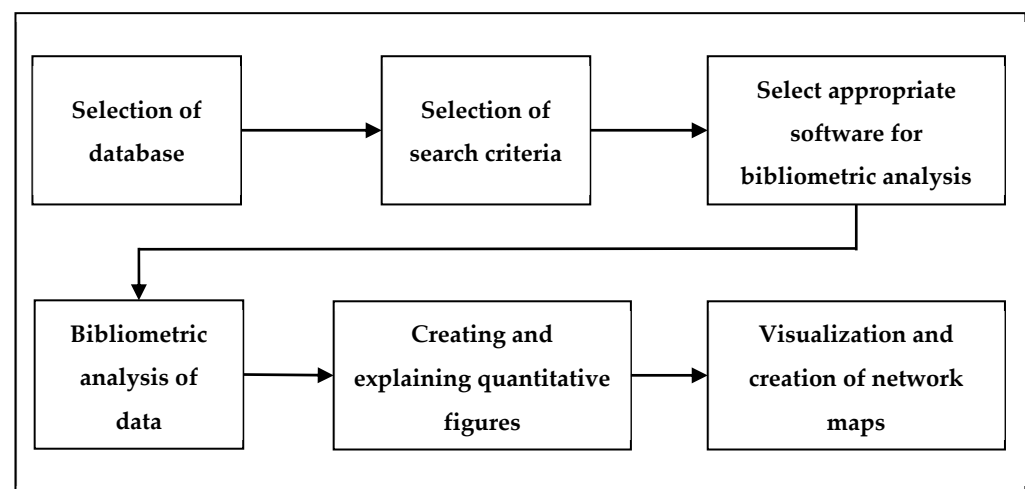


Figure 1. Research framework for analysis.

This research adopts a systematic approach, commencing with database selection. Bibliometric analysis emerges as the preferred method, facilitating a comprehensive exploration of scientific studies within a research domain, including authorship, institutional affiliations, country of origin, co-authorship patterns, and citation networks. Subsequently, appropriate tools and techniques for network visualization are chosen. Lastly, the interpretation phase furnishes a comprehensive elucidation of the results obtained throughout the entire process.

This article used a dataset curated for a bibliometric analysis focusing on financial information/accounting manipulation within the academic literature. The dataset compilation process involves a systematic search and retrieval strategy within the Web of Science database. Using the WoS database, papers mentioning the terms ‘financial information manipulation’ or ‘accounting manipulation’ in their topic (title, abstract, or author keywords) were sought in April 2024, and 1.266 bibliometric records related to financial information/accounting manipulation research between 1991 and 2023 were extracted. Crucially, each paper in the dataset features the presence of either ‘financial information manipulation’ or ‘accounting manipulation’ in its title, abstract, or author keywords, ensuring alignment with this study’s thematic scope. Bibliometric network mapping techniques were used to analyze the dataset. The analysis was performed using the Biblioshiny interface of the R package programs Bibliometrix and Vosviewer, enabling a comprehensive exploration and visualization of bibliometric data. This methodology facilitated the identification of key trends, patterns, and relationships within the scholarly discourse on financial information and accounting manipulation.

3. Results

This section discusses the main results of the research (publication and citation trends, most relevant authors, institutions, countries, sources, and important documents) and network mapping analysis.

3.1. General Information about Data

Initially, the WoS search produced 10.378 documents. Then, documents other than articles, conference proceedings, books, and book chapters were excluded from these documents. Then, documents outside the categories of business finance, economics, management, and business were excluded. Finally, documents published in 2024 were excluded.

In this way, 1.266 studies were included in the research. Table 1 presents the general features of the data used for analysis.

Table 1. General information about data.

Data	Result
Documents (Articles, Conference Proceedings, Books, etc.)	1.266
Document Types	
Article	1.141
Proceeding Paper	107
Book Chapter	29
Review Article	26
Early Access	19
Sources (Journals, Books, etc.)	515
Country	81
Organization	1.327
Author	2.742
Author Per Document	2.16
Author Keyword	3.289
First Document Date	1991

There are 1.266 studies associated with 515 sources. It was determined that the studies were conducted by 2.742 authors, which statistically reveals the increasing trend of cooperation in scientific studies on financial information/accounting manipulation. Furthermore, 3.289 keywords are used in the studies. The studies were conducted in 81 countries and 1.327 institutions. The oldest document reached is dated 1991.

3.2. Publication and Citation Trends

Figure 2 depicts the trends in publication and citation from 1991 to 2023. The initial research question pertains to the annual count of publications and citations within the research field. It is evident that there has been a notable surge in research on financial information/accounting manipulation since the 2000s, evident in both the increasing number of publications and citations. The rise in research activity can be attributed to global financial scandals stemming from accounting and financial market manipulation, particularly since the early 2000s.

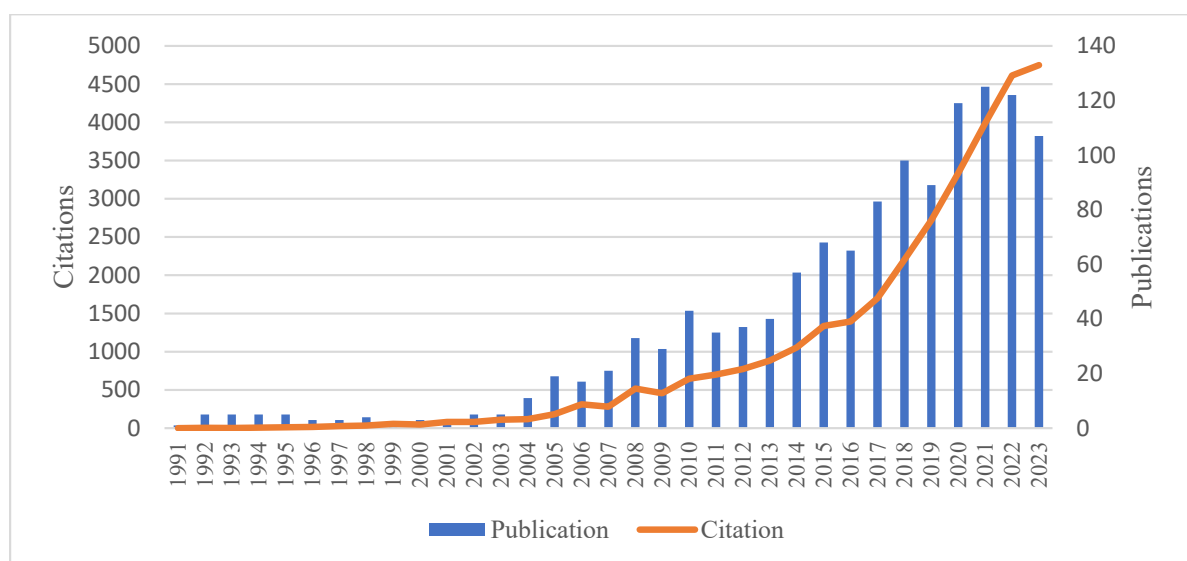


Figure 2. Publication and citation trends by years.

Figure 3 displays the top 10 authors who have made significant contributions to the literature on financial information/accounting manipulation. Leading the list of prolific contributors is Valaskova, with 10 publications.

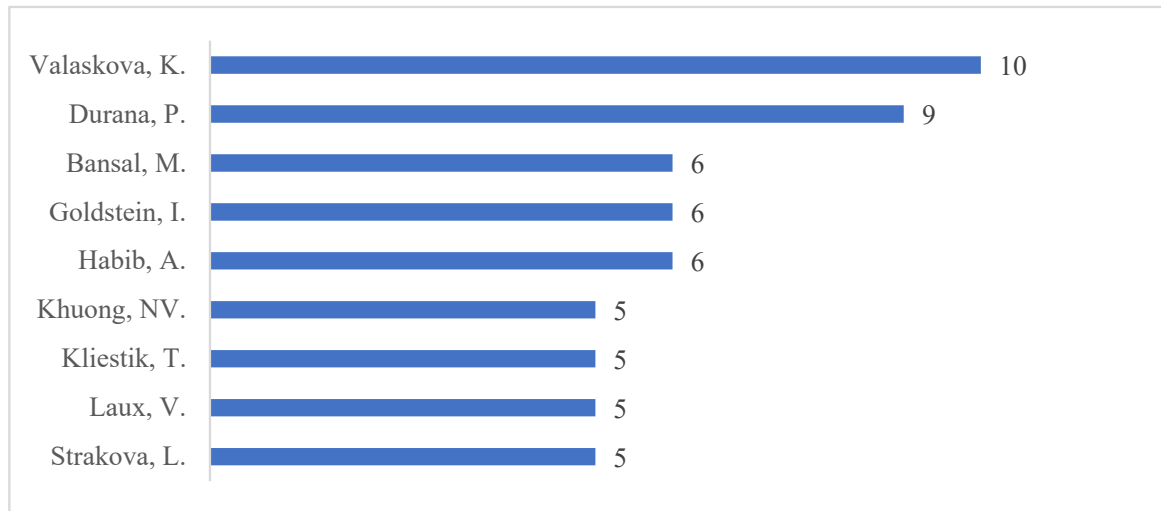


Figure 3. Most relevant authors.

Regarding the second question, Valaskova is the most influential author in the field, followed by Durana. The article “Advanced methods of earnings management: monotonic trends and in the spotlight in the Visegrad countries,” published in *Oeconomia Copernicana* in 2020, of which Valaskova was one of the authors, was cited 67 times in WoS and 163 times globally. The article titled “Does the life cycle affect earnings management and bankruptcy?”, published in *Oeconomia Copernicana* in 2021 by Durana et al., was cited 79 times in WoS and 127 times globally.

Figure 4 shows the top 10 institutions that have contributed the most to the literature on financial information/accounting manipulation. It is seen that US institutions, with 7 universities, are among the top 10 institutions contributing the most to the literature.

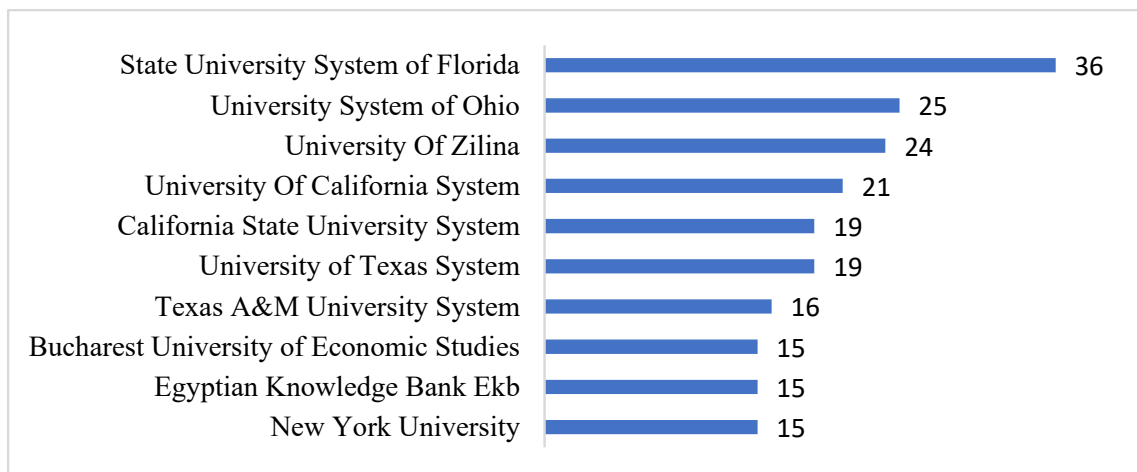


Figure 4. Most relevant institutions.

Figure 5 shows the top 10 countries that have contributed the most to the literature on financial information/accounting manipulation.

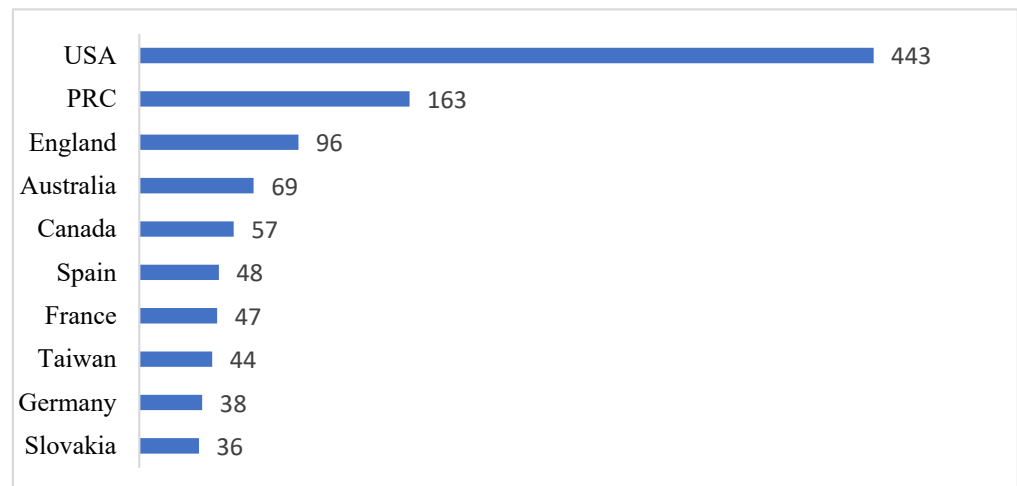


Figure 5. Most relevant countries.

Figure 6 shows the top 10 sources that have contributed the most to the literature on financial information/accounting manipulation.



Figure 6. Most relevant sources.

The third research question asked which countries, institutions, and sources produced the most publications on the topic. The USA ranks first with 443 publications, followed by the PRC with 163 publications. The State University System of Florida ranks first with 36 publications, followed by the State University System of Ohio with 25 publications. *The Accounting Review* is the source that publishes the most articles, with 36 published articles. Although the *Journal of Accounting Economics*, ranked third in the list, has published 23 articles, 5 of the most cited studies at the global level were published in this journal (Figure 7). In light of this information, it can be said that the *Journal of Accounting Economics* is the most effective journal in the field of financial information/accounting manipulation.

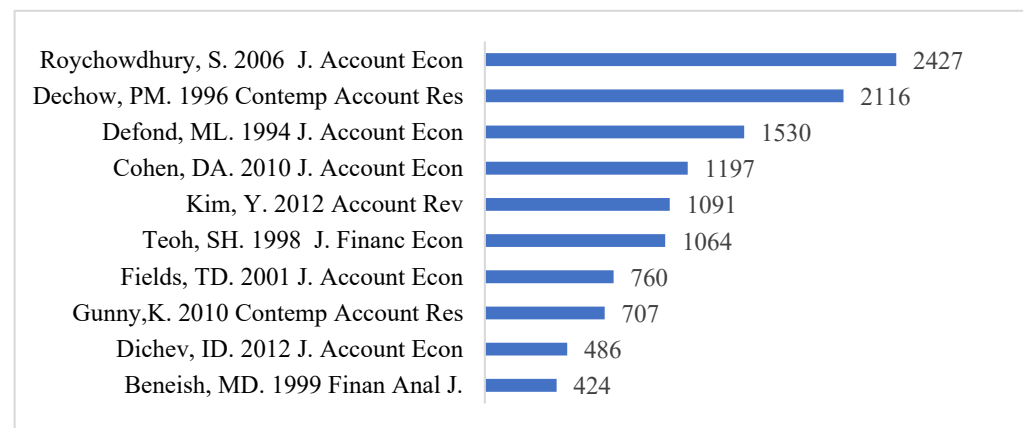


Figure 7. Most globally cited documents.

Figure 7 shows the top 10 most globally cited documents on financial information/accounting manipulation.

Regarding the fourth question, Roychowdhury's study (2006) titled "Earnings management through real activities manipulation" published in the *Journal of Accounting and Economics* is the most globally cited article.

3.3. Mapping The Conceptual Structure

Bibliometric methods offer a clear visualization and explanation of the conceptual structure within a scientific discipline (Santonastaso et al. 2023, p. 35) by uncovering quantitative and precise relationships among various studies (Uyar et al. 2020, p. 53). By assessing the strength of relationships between keywords, research patterns, and the conceptual framework of relevant fields, investigation becomes feasible (Yan et al. 2015). Keyword co-occurrence analysis, a widely utilized bibliometric method by researchers (Assefa and Rorissa 2013; Nájera-Sánchez et al. 2019; Cheng et al. 2020; Faraji et al. 2022), determines the conceptual structure of a research field. This technique, a form of text mining, scrutinizes keyword co-occurrences in documents (Van Eck and Waltman 2014), facilitating a better understanding of word relationships and their categorization by topic and meaning.

In this study, author keywords served as input to delineate the conceptual structure of the research field, aiming to identify primary research streams and themes. Through keyword co-occurrence analysis, this study endeavors to contribute to the literature by comprehending the conceptual structure of financial information/accounting manipulation.

The network visualization resulting from keyword co-occurrence analysis is illustrated in Figure 8.

According to the results of the keyword co-occurrence analysis, the keywords are divided into four clusters. Among all co-occurring keywords, earnings management, which is included in the fourth (yellow) cluster, has the highest number of occurrences (279) and the highest total link strength (304), making it the key term in the field.

Regarding the fifth research question, conceptual structure, through keyword co-occurrence analysis based on author keywords, four themes about this area are derived using VOSviewer. These include manipulation in the context of fraudulent financial reporting; the relationship between corporate governance and manipulation; the relationship between corporate social responsibility and manipulation; and earnings management as a manipulation method. The focused themes in the groups are given in Table 2 below.

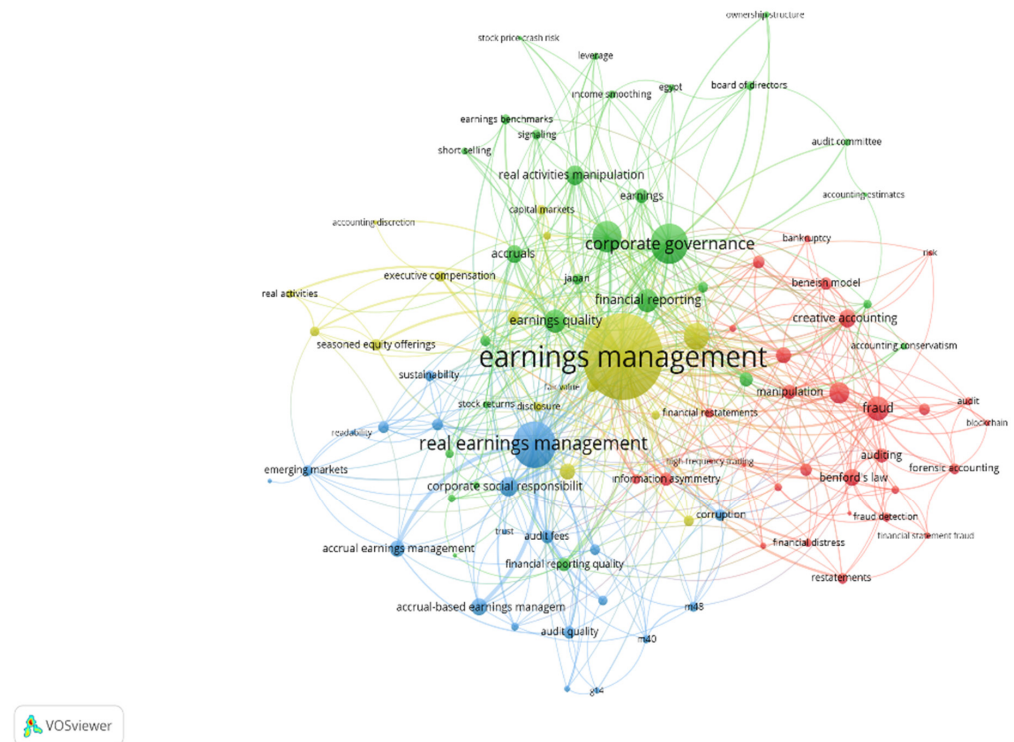


Figure 8. Network visualization of author keywords.

Table 2. Four thematic groups related to financial information/accounting manipulation.

Cluster 1 (Red)	Cluster 2 (Green)	Cluster 3 (Blue)	Cluster 4 (Yellow)
Themes focused on fraud, creative accounting, Benford Law, and financial reporting.	Themes focused on corporate governance, discretionary accruals, earning quality, and financial reporting.	Themes focused on earning management and corporate social responsibility.	Themes focused on earning management and earning manipulation.

3.4. Mapping The Social Structure

The social structure of disciplines derives from collaboration, described as at least two people working together to achieve a common goal (Koseoglu 2016, p. 204). Co-authorship analysis is a bibliometric method used to determine the social structure of a discipline by taking into account the authors' affiliations (Martinez-Garcia et al. 2023; Mourao and Martinho 2020). Co-authorship analysis is one of the effective techniques used to determine collaborations in scientific research (Arslan 2022, p. 38).

In the R program, authors and countries are selected as analysis units in co-authorship analysis, and it is possible to analyze the collaboration between these units. Firstly, for the social structure analysis, co-authorship analysis was conducted utilizing Biblioshiny focusing on authors. The resulting visual representation of the co-authorship analysis involving authors is depicted in Figure 9.

The clusters emphasize authors with the strongest co-authorship links within their respective groups. Valaskova and Durana, the authors with the strongest co-authorship link, are located in the red cluster. In the same cluster, Klietnik is the author with the third strongest co-authorship links.

Secondly, regarding the social structure, co-authorship analysis was performed in the context of countries using Biblioshiny. Table 3 presents the frequency of collaborations between countries in research on financial information/accounting manipulation.

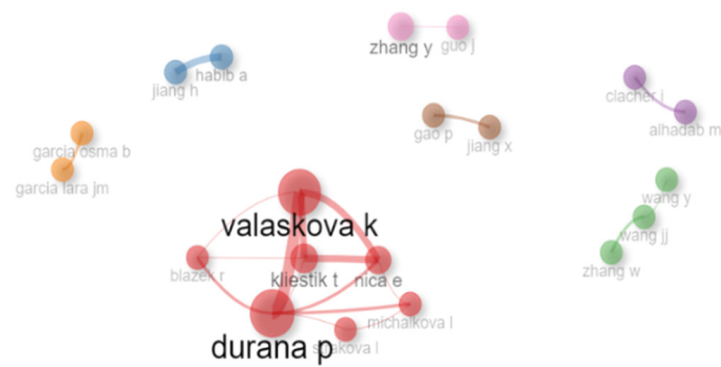


Figure 9. Network mapping of co-authorship analysis of authors.

Table 3. Countries’ collaboration frequency (top 10).

From	To	Frequency
USA	China	35
China	United Kingdom	15
USA	Canada	15
USA	Australia	10
China	Australia	9
USA	United Kingdom	9
Slovakia	Czech Republic	8
United Kingdom	Egypt	8
USA	France	8
China	Canada	7

The network collaboration between countries in research on financial information/ accounting manipulation is given in Figure 10.

Country Collaboration Map

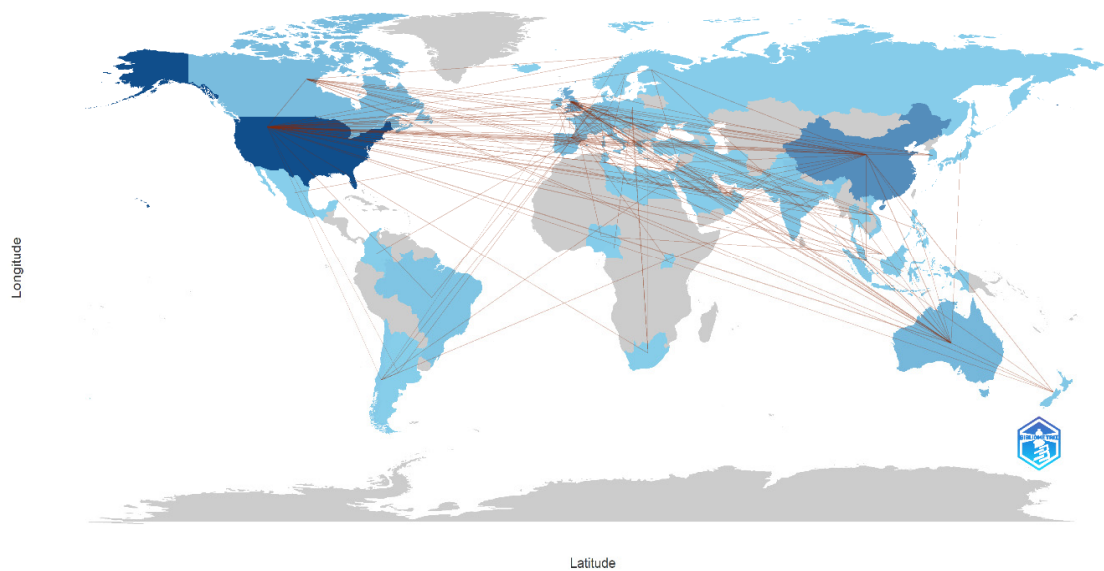


Figure 10. Network mapping collaboration between countries.

The shades of blue deepen from light to dark based on the number of articles published by each country. Darker shades represent countries that publish the most articles. The country with the strongest collaboration with other countries is the USA. China has the second strongest co-authorship link, followed by the UK in third place. The thickness

of the red line denotes the extent of collaboration between countries. The figure shows that the USA has a high level of both publications and collaboration, followed by China, the UK, and Australia.

3.5. Mapping The Intellectual Structure

The intellectual structure offers a systematic and comprehensive understanding of the knowledge base (Asif and Nasir 2024, p. 579). It identifies meaningful relationships between different key citations (Pilkington and Meredith 2009). Co-citation analysis is a bibliometric method used to determine relationships among research elements (Shiau et al. 2023, p. 4). It considers co-citation numbers as a measure of similarity and analyzes the relationship between various elements such as authors, journals, references, etc., to understand certain features of the related field (Song et al. 2023, p. 123). Since co-cited articles are closely related to each other in terms of their research topics, methods, or theories, co-citation analysis is a method employed to determine the intellectual structure of a scientific field (Shiau et al. 2017).

In this study, regarding the intellectual structure, co-citation analysis based on cited documents was used to identify important relationships between different scientific citations and to highlight significant research streams. Biblioshiny was used as a tool for determining the intellectual structure of the field. Figure 11 shows the resulting network image from the co-citation analysis of cited documents.

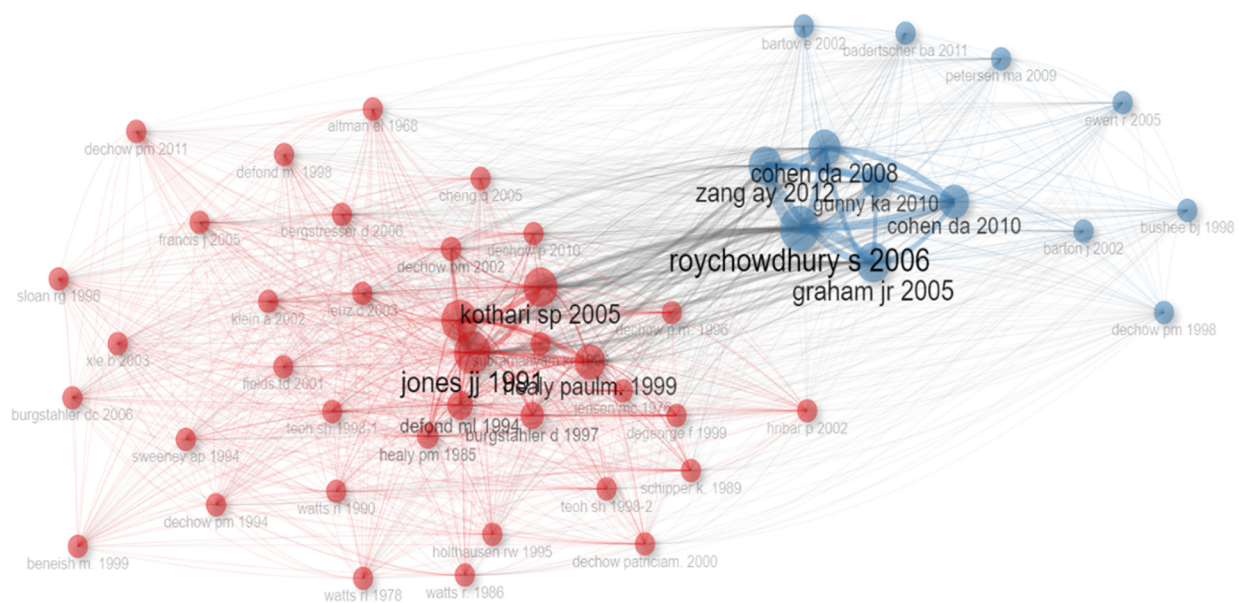


Figure 11. Network mapping of co-citation analysis for cited documents.

The reference with the highest co-citation link is the study titled “Earnings Management Through Real Activities Manipulation” by Roychowdhury (2006). The study by Jones (1991) has the second highest total link strength. The study by Dechow (1995) ranks third in terms of total link strength. According to the analysis results, the most co-cited study focuses on the theme of earnings management, which is a manipulation technique.

4. Discussion

The results of this study provide an exhaustive overview of the financial information/accounting manipulation literature from 1991 to 2023. The upward trend in publication and citation rates indicates growing academic and practical interest in this field, likely driven by high-profile financial scandals and the increasing complexity of financial reporting. These findings align with previous studies that highlight earnings management, fraudulent financial reporting, and corporate governance as key themes in the literature

(Teixeira and Rodrigues 2022; Hlawiczka et al. 2021; Kaya and Yazan 2017; Safta et al. 2021; Suffian et al. 2023).

The keyword co-occurrence analysis revealed four primary themes: fraudulent financial reporting, corporate governance, corporate social responsibility, and earnings management. This thematic diversity suggests that the issue of financial manipulation is multifaceted, involving various strategies and motivations. The clustering of keywords also points to distinct research streams, reflecting a nuanced understanding of how different aspects of financial manipulation are interrelated.

The analysis of the most prolific authors and institutions underscores the dominance of US-based researchers and institutions in this field. This may be attributed to the advanced financial markets and regulatory environments in the US, which provide fertile ground for research. The corporate scandals (WorldCom, Adelphia, Tyco, and Enron) that emerged in the US in the late 1990s completely undermined public trust in financial markets and weakened trust in the government and the various institutions responsible for overseeing the market (Kecskés 2017). In order to restore public trust in markets, the Sarbanes–Oxley Act of 2002 is a legal regulation enacted in the US as a deterrent against the manipulation of financial statements (Mulford and Comiskey 2002). In parallel with these developments, the SEC, which is responsible for regulating and supervising financial markets in the USA, has tightened its supervision and control over financial markets. Since then, financial statement manipulation has been one of the most studied topics by accounting and finance researchers in the US (Stallworth and Braun 2007; Parker et al. 2011; Gujarathi 2015). Moreover, the significant collaboration between authors from different countries highlights the global nature of financial manipulation issues and the importance of international cooperation in addressing them.

It is recommended that future research continues to explore the evolving nature of financial manipulation, especially in the context of emerging technologies such as artificial intelligence and blockchain. These technologies have the potential to both enhance and complicate the detection and prevention of financial manipulation. Additionally, more cross-disciplinary studies that integrate insights from accounting, finance, law, and information technology are needed to develop a holistic approach to combating financial manipulation.

5. Conclusions

An exhaustive bibliometric analysis has been conducted to shed light on the conceptual, social, and intellectual structures of the financial information/accounting manipulation literature. Key trends, influential authors, leading institutions, and primary research themes in the field have been identified. The findings highlight the complexity and multifaceted nature of financial manipulation, which spans various techniques and motivations.

While there are some bibliometric studies on financial information/accounting manipulation, they often focus on specific manipulation methods and do not analyze the main issue comprehensively. This research is important for academic purposes as it helps us understand the latest developments and contributes to the development of scientific knowledge by systematizing the literature on financial information/accounting manipulation.

The research findings indicate that the most common type of manipulation is earnings management. The most effective measure against earnings management practices, which is the management of accounting profits within legal limits in order to achieve certain objectives, is the adoption of corporate governance principles. The prominent focus on earnings management as a manipulation method underscores its critical role in shaping financial statements. However, the interplay between corporate governance, corporate social responsibility, and fraudulent financial reporting suggests that a broader perspective is necessary to fully understand the dynamics of financial manipulation. This research aims to analyze the most frequently occurring keywords related to financial informa-

tion/accounting manipulation, group them into clusters, and verify the strength of the connections between them.

Along with developing information technologies, the widespread use of various financial instruments and applications in financial markets makes it more difficult to detect and prevent fraudulent transactions and compensate for losses. In this context, more emphasis should be placed on preventing manipulation rather than detecting it, preventive controls should be established, and the perception of detection should be kept at a high level. A good control environment and a solid audit system should be established, and the necessary precautions against manipulation should be taken before it occurs. In manipulation risk management, it is recommended to apply proactive approaches in order to take precautions to prevent manipulative transactions from occurring or to foresee what may happen and take precautions. Methods such as data mining, analytical review procedures, internal control regulations, tip lines, and whistleblowing policy can be given as examples of proactive approaches to preventing manipulation.

In order to prevent manipulations of financial information such as creative accounting, the elements that cause manipulation in International Financial Reporting Standards should be identified, and necessary precautions should be taken. Studies show that manipulations are affected by external factors as well as internal factors. While International Financial Reporting Standards allow for a comparison of the financial information of companies operating in different countries, the fact that each country has different legal regulations and policies, and that cultural, social environments, beliefs, and education levels vary from country to country, reveals that manipulations cannot be completely prevented with these standards. For this reason, both company shareholders and managers and independent auditors should be made aware of the need to act in accordance with ethical rules and moral values. Financial information manipulations disrupt the market order, harm national economies, and undermine investor confidence. For this reason, country lawmakers should apply severe penalties and sanctions to prevent irregularities. All financial information users should show the necessary follow-up and care for the implementation of these penalties and sanctions. In addition, companies need to improve their corporate governance levels and update their internal audit systems. The effective operation of the internal control system of companies can prevent managers from resorting to manipulations such as aggressive accounting.

As a result, this research has implications for regulatory bodies, as it promotes discussions on developing and implementing new procedures to combat financial information and accounting manipulation. Understanding the current state and development of this issue is essential.

Practical implications for regulators and policymakers aiming to develop more effective measures to detect and prevent financial manipulation have been offered. In general, the manipulation of financial information/accounting is a crucial issue to be investigated for the purpose of investors' protection. In this respect, regulators are constantly working on the best preventive measures and are engaged in a constant battle to find ways to prevent manipulation, one of which is through legislative actions. For instance, the Sarbanes–Oxley Act is a legal regulation enacted in the US as a deterrent against the manipulation of financial statements. This regulation is an important example for developing countries that have not yet made a legal regulation against financial information/accounting manipulation. A systematic review of measures against types of manipulation is recommended for future research to fill the gap in this area.

In summary, this study provides valuable insights into the scientific literature on financial information and accounting manipulation, revealing the conceptual, social, and intellectual frameworks, key research trends, and potential future research directions. A limitation of this study is its exclusive use of the WoS database. Future research should consider examining financial information and accounting manipulation using data from other databases and various analytical methods.

It is recommended that future research continue to monitor trends and incorporate technological advancements to stay ahead of evolving manipulation techniques.

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