

THE INTERSECTION OF CORPORATE GOVERNANCE, ETHICS, INTERNAL AUDIT, AND BANKRUPTCY RISK MANAGEMENT: A BIBLIOMETRIC ANALYSIS

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Abstract: *This study employs a mixed-methods approach to delve into the intricate interplay among corporate governance, bankruptcy risk, forensic accounting, internal auditing, and ethics. While prior research has highlighted the correlation between weak governance, increased bankruptcy risk, and ethical lapses, the synergies among these factors necessitate deeper investigation. The authors conducted a meticulous bibliometric analysis of the Scopus database, focusing on the realms of accounting, internal audit, forensics, bankruptcy, and ethics within the overarching domain of corporate governance. Emphasizing the importance of robust governance principles in mitigating risks in accounting, the study revealed a substantial coverage of resources across various disciplines, with accounting (54.6%) and ethics (25.1%) leading the distribution. The dataset, comprising 5990 resources from 495 publications cited 151,911 times spanning from 1978 to March 2024, serves as a valuable resource for scholars aiming to fortify organizational resilience by integrating critical concepts identified in this research.*

Keywords: *Corporate governance, Bankruptcy risk, Forensic Accounting, Internal audit, Ethics.*

INTRODUCTION

Corporate governance is the one-setting framework for business ethical behavior, which in turn shapes the organizational culture and guides the business operations to ensure corporate performance. In recent decades, corporate governance and business ethics have faced increased scrutiny due to high-profile corporate failures and scandals. Weak governance and unethical practices can pose significant risks to an organization's long-term viability, including financial distress, fraud, and regulatory noncompliance. However, the complex relationships between governance, ethics, forensic accounting controls, internal auditing, and bankruptcy outcomes have not been thoroughly explored as part of financial resilience within corporate governance.

This study aims to address young researchers toward an academic approach to the interplay of the areas covering accounting, internal audit, forensics, bankruptcy, and ethics

throughout a complex bibliometric output from the Scopus database to define the authors' perspective of organizational resilience. The authors consider this as a start for further research within the frame of sustainability and resilience domain.

The first step in ensuring a company can become sustainable from the financial, environmental, social, and risk management perspective is to ensure financial resilience. A struggling company that faces a lot of financial challenges may have a very hard time having concerns regarding environmental and social issues, no matter how important and necessary they may be.

Analysing these issues through the magnifying glance of ethics, risk management, and internal audit processes can provide insights to help organizations strengthen resilience against threats to their sustainability.

Literature review

On May 2023, Dun & Bradstreet defined “resilience” in business terms as those organizations that can “identify risks early, adapt to negative external changes and maintain business operations during difficult situations” (Dun & Bradstreet, 2023), combined with corporate sustainability and purpose for business continuity or long-term survival (Florez-Jimenez, Lleo, Danvila Del Valle, & Sánchez-Marín, 2024), thus building the concept of “corporate sustainable development performance” (Yao & Wang, 2024)

The economic environment has been so often impacted by globalization (Lama, 2013), financial distress (Otiybo & Ofuan, 2023), financial scandals and repercussions (Ajayi-Nifise, Olubusola, Falaiye, Mhlongo, & Daraojimba, 2024), Covid-19 pandemic supply chain disruptions (Mohammed, Lopes de Sousa Jabbour, & Diabat, 2021), war business conditions (Obłój & Voronovska, 2024), extreme environmental events (Wu & Tham, 2023), artificial intelligence challenges (Singh & Goyal, 2023) and made companies understand that all financial risk-driven decisions include a company’s ability to obtain critical information on all probable risks identified.

Although many companies are following corporate governance principles, it does not automatically translate into becoming more sustainable or recognizing the added business value of a result. (Beloff, Tanzil, & Lines, 2004)

A significant role in managing all the risk factors within a company increased the need for big data tools and then analysis specialists to identify and implement” ways to achieve improved competitive advantage and to build internal and external capabilities” (Bag, Dhamija, Luthra, & Huisingh, 2023) to help companies to identify, assess, mitigate, reduce, and eliminate risks in business resilience goals.

“Bibliometrics is to scientific papers as epidemiology is to patients” (Lewison & Devey, 1999) by following the trajectory of a research area of published information and the related data in the form of authors, citations, abstract, keywords by visualization of their relationships in the form of network nodes’ plots (Ninkov, Frank, & Maggio, 2022). As in accounting and finance, a bibliometric analysis uses quantitative and qualitative approaches (Ellili, 2023), the quantitative study for relationships and interconnections of the bibliographic material and the qualitative analysis to examine them in depth for better understanding (Charl de Villiers, Dumay, & Maroun, 2019).

Data and methodology

Corporate governance is a vast and longtime approached subject by the academic community, so a Vosviewer (Van Eck & Waltman, 2009) technique was used since it is a popular method of measuring the dimension and the novelty of the research area.

Vosviewer was selected as the research method due to its technical robustness and friendly user approach in finding correlations between concepts (Kirby, 2023) to undertake a useful starting approach for more complex further research. Using the Vosviewer computer programming for text mining for the above concepts and keywords used by authors in their research in the Scopus database, bibliometric research and providing a visual correlation were established. A search in Scopus for the keywords bankruptcy, internal audit, forensic, ethics, corporate governance, and accounting, separately generated impressive numbers of articles written. A search for all the concepts together generated through 0 results, even a mix of four or 3 concepts combined did not produce significant data to be analyzed. So, a mixed-methods study was conducted, by generating individual bibliometric queries of only two concepts keywords, corporate governance & accounting, corporate governance & internal audit, corporate governance & forensic, corporate governance & ethics, corporate governance and bankruptcy. Then the results exported individually in CSV file type were combined into a single file, transformed in xlsx file for the descriptive analysis, and also uploaded in VOS to create the interconnectivity of the keywords for all the concepts, thus generating the results for the initial query. The case studies provided context to help authors find the resources for all the concepts involved and to have a good perspective of the references' quantity and quality input, demonstrating the interconnectivity between corporate governance, accounting, internal audit, forensics, bankruptcy, and ethics within academic research.

Results and discussions

The data set obtained by combining the concepts was further analyzed using a mix of tools, like Vos Viewer, excel, and Jasp to assess what kind of analysis would help young researchers in their quest. Performing descriptive statistics in Excel we find that out of a total of 5,990 articles, 15% benefited from funding, 28% are open access and 89% have an identification DOI number, as per the below figure for open access frequencies analysis, worked in the statistical program Jasp.

Figure 1: Descriptive statistics: frequencies for open access articles

Frequencies for Open Access

Open Access	Frequency	Percent	Valid Percent	Cumulative Percent
All Open Access; Bronze Open Access	185	3.088	11.171	11.171
All Open Access; Bronze Open Access; Green Open Access	57	0.952	3.442	14.614
All Open Access; Gold Open Access	308	5.142	18.599	33.213
All Open Access; Gold Open Access; Green Open Access	262	4.374	15.821	49.034
All Open Access; Green Open Access	461	7.696	27.838	76.872
All Open Access; Green Open Access; Hybrid Gold Open Access	213	3.556	12.862	89.734
All Open Access; Hybrid Gold Open Access	170	2.838	10.266	100.000
Missing	4334	72.354		
Total	5990	100.000		

Source: authors

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Examining the number of articles written over time from 1978 to early 2024, we find that very few articles combine the author's keywords corporate governance and forensic (50 articles in total representing 1%) and bankruptcy (366 articles in total representing 6%).

Table 1: Breakdown of the dataset into categories

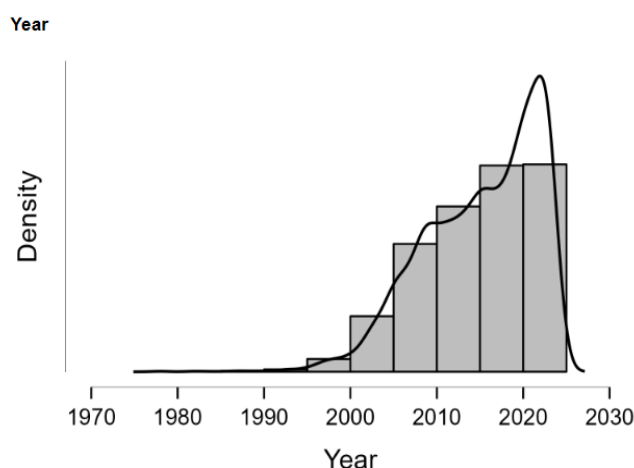
Keywords	No. of Titles	%	No. of FundingDetails	%	No. of Open Access	%	No. of DOI	%
Accounting	3,271	55%	573	62%	956	58%	2,920	55%
Bankruptcy	366	6%	53	6%	94	6%	304	6%
Ethics	799	13%	117	13%	232	14%	686	13%
Forensic	50	1%	7	1%	12	1%	44	1%
Internal audit	1,504	25%	178	19%	362	22%	1,364	26%
Grand Total	5,990	100%	928	100%	1,656	100%	5,318	100%
%	100%		15%		28%		89%	

Source: authors

Generating a histogram for the number of articles within the time frame, we find an asymmetrical distribution, a left-skewed distribution (negatively-skewed), with high density for the years 2000 to 2024, when we have an average of 236 articles per year, comparing with the previous period 1978 – 1999 when we had an average of 6 published articles per year. The pivot table output generated in Excel can be reviewed in the Annex of this article.

Figure 2: Frequencies histogram chart for the number of articles

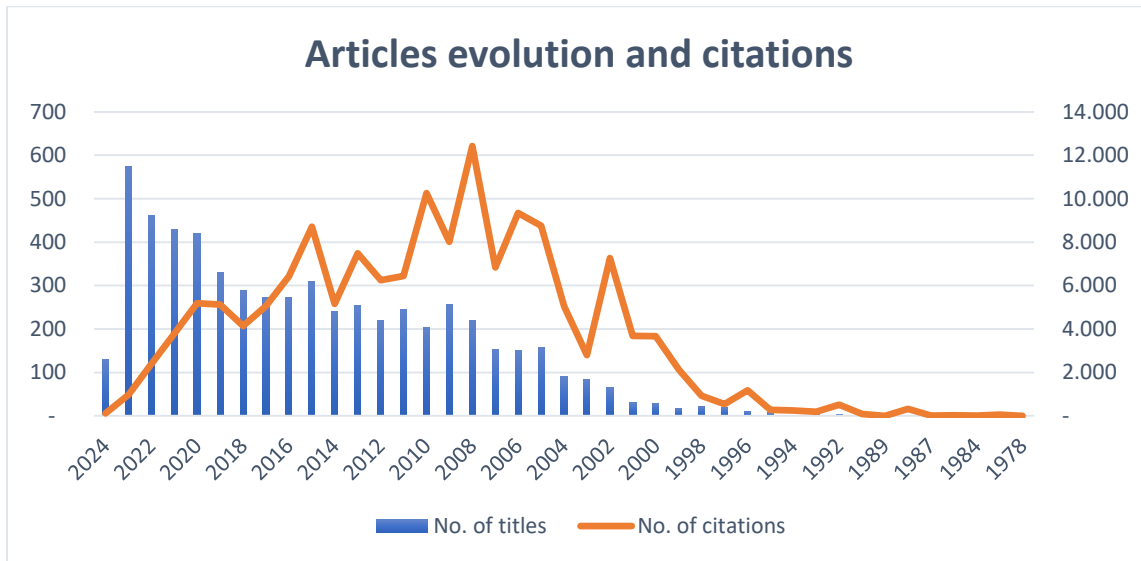
Distribution Plots



Source: authors

In Excel we generated a combo chart to combine the number of articles written per year with the number of citations, resulting a table showing the maximum number of articles have been published in 2023 (a total of 574 articles) and the highest number of citations are met in the year 2008 (12,424), followed closely by the year 2010 (10,263). Most probably the articles written in the last 10 years will generate more citations within the next years, as new academic research will probably follow.

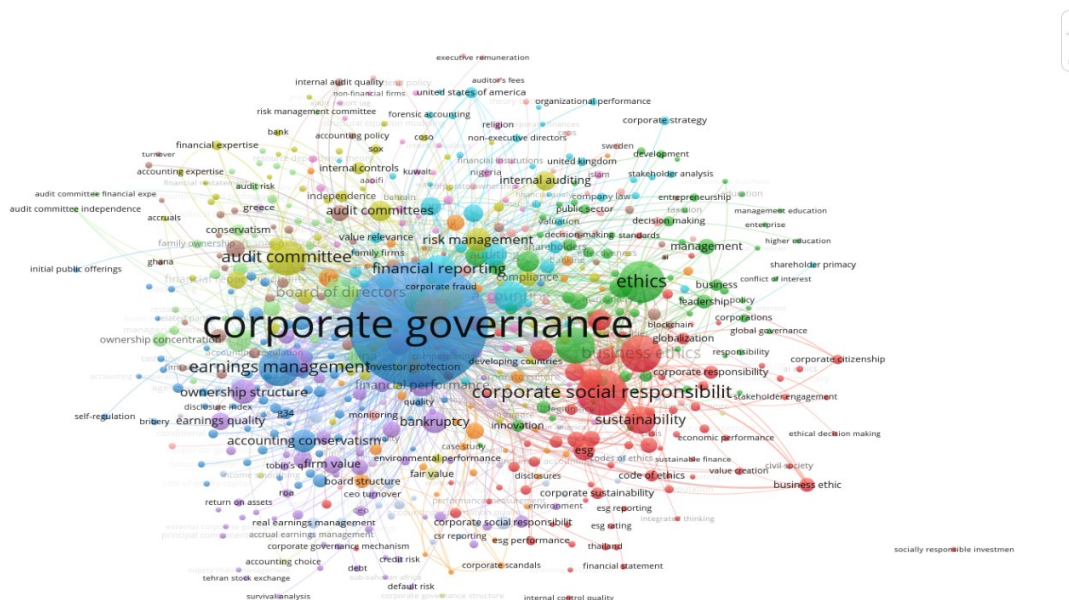
Figure 3: Chart for articles evolution and citations



Source: authors

Below we can find the generated image extracted from Vos Viewer after combining all five .csv documents extracted from the Scopus database for co-occurrence of the authors keywords selection. It was expected for corporate governance to be the most visible since it is the common link to all the datasets and searches.

Figure 4: Vosviewer co-occurrence of keywords



Source: authors

Vos viewer generated a number of 14 clusters for 637 items with 9505 links between them. Changing to density visualization we can assess better the dimension of the clusters connecting corporate governance with ethics, financial reporting, risk management, audit committee, earnings management, corporate social responsibility, and very small density for bankruptcy, forensic, and internal auditing.

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Figure 5: Vosviewer co-occurrence of keywords by density



Source: authors

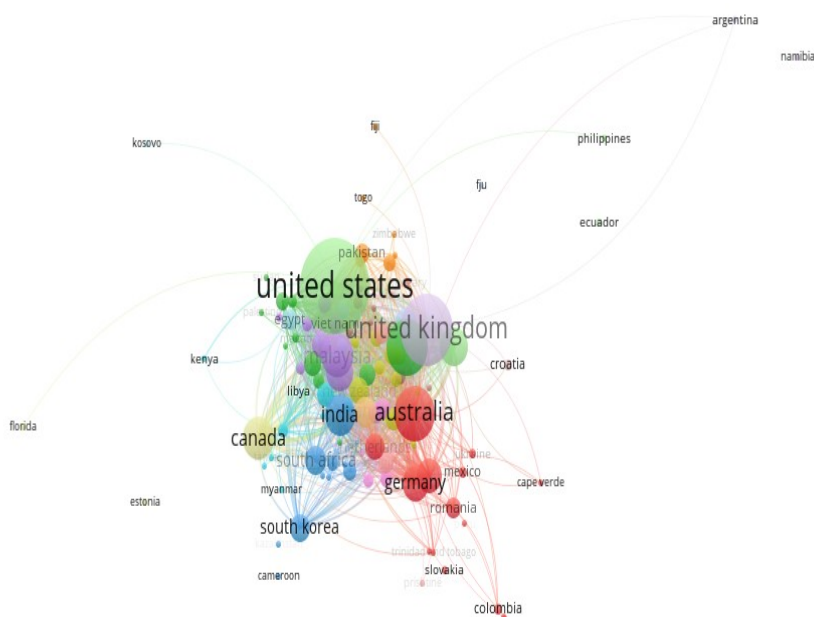
To have a better understanding of the Vosviewer network visualization analysis, since there are so many items, a clusterst review was performed, choosing for each cluster the most relevant keywords considered by the authors helpful for further literature review research.

- Cluster 1 (79 items) built around the keyword corporate social responsibility brings co-occurrence connectivity with the main keywords selected as important by the authors in their research: governance, business ethics, sustainability, integrated reporting, accountability, financial performance, accounting, transparency, sustainable development.
- Cluster 2 (69 items) is built around the keyword ethics brings co-occurrence connectivity with the main keywords selected as important: management, fraud, risk management, auditing, accounting, compliance, corruption, corporate culture, corporate social responsibility, artificial intelligence, business ethichs, decision making, sustainability.
- Cluster 3 (68 items) is built around the keyword corporate governance brings connectivity with earnings management, accounting conservatism, accounting conservatism, financial regulation, earnings management, risk-taking, ceo duality.
- Cluster 4 (61 items) is built around the keyword board of directors brings connectivity with audit committee, financial reporting quality, internal control, risk management, internal auditing, risk assessment, ethics, corporate responsibility.
- Cluster 5 (61 items) is built around the keyword firm performance brings connectivity with accounting fraud, bankruptcy prediction, corporate social responsibility disclosure, machine learning, survival analysis, performance measures, financial ratios, default risk, agency problem, credit risk.
- Cluster 6 (45 items) is built around the keyword accounting brings connectivity with: auditing, corporate fraud, forensic accounting, information technology, fraud triangle, organizational performance, fraud detection, corporate strategy, fraud prevention, corporate fraud.

- Cluster 7 (42 items) is built around the main keywords: bankruptcy risk, corporate governance standards, financial crisis, organizational culture, crash risk , code of best practice, corporate scandals, accounting standards.
- Cluster 8 (42 items) is built around the main keywords: artificial intelligence, internal audit function, management accountability, financial accounting, corporate governance mechanisms, international financial reporting standard.
- Cluster 9 (35 items) is built around the main keywords: bibliometric analysis, financial statement fraud, cybersecurity, Vosviewer, accounting and finance, audit report lag, control.
- Cluster 10 (35 items) is built around the main keywords: accounting research, theory of the firm, corporate ethics, agency theory, Sarbanes-oxley.
- Cluster 11 (34 items) is built around the main keywords: accounting scandals, meta-analysis, external auditing, internal governance, audit committee independence, restatement.
- Cluster 12 (34 items): codes of conduct, multinational companies, related party transactions, corporate social responsibility (csr), accounting disclosure, sustainable development goals.
- Cluster 13 (19 items): accounting choice, international accounting, profitability, crisis management, income smoothing.
- Cluster 14 (14 items): agency conflicts, external audit, management accounting, external audit, top management team, supervisory board.

Further research of the nationality of the authors who published these articles brings us a total of 107 countries, generating 17 clusters, out of which Romania is interconnected with other 14 countries: Australia, Cape Verde, Colombia, Germany, Iceland, Malta, Mexico, Netherlands, Panama, Peru, Slovakia, Spain, Trinidad and Tobago, Ukraine.

Figure 6: Vosviewer network visualization of authors per country



Source: authors

CONCLUSIONS

This study extends previous research by demonstrating the complementary roles of internal controls, forensic accounting, credit risk management, and ethics initiatives in governance's influence. When integrated within an ethical culture and robust control environment, these functions contribute to effective governance in practice for resilience and sustainability.

This research identified the gap between several limited articles written on bankruptcy, forensic accounting, and ethics within the area of corporate governance. The internal audit component can be the link of governance principles and audit procedures to better enhance the company's resilience in terms of risk management for financial sustainability and fraud detection for resilience purposes as well.

Another aspect since the bibliometric study was performed combining accounting, ethics, bankruptcy risk management, internal audit, and forensic accounting was the lack of financial indicators and ratios involved taken into account for corporate resilience and sustainability except only one cluster where financial ratios had the occurrence 7 times. In the authors' opinion, all techniques and tools for fraud detection, risk management, and internal auditing are done on the accounting information in the form of ratios, and financial indicators.

A search involving a large amount of data can have limitations in terms of lacking the in-depth search of the area, going article by article, which would mean a lot of time allocation to identify other gaps as well, maybe having a more qualitative significance than the quantitative approach by using Vosviewer. Maybe artificial intelligence tools will offer shortly the possibility to interconnect big data analysis with qualitative information generated in an easier way for both the scientific committee and corporations.

In conclusion, this study provides empirical evidence of the intricate relationship between corporate governance, internal controls, forensic accounting, ethics, and bankruptcy risk. To enhance sustainability, organizations should consider these issues holistically, adopting an enterprise risk management approach rather than addressing them in isolation. Therefore, a comprehensive examination of the interplay between soft and hard controls is warranted. The findings offer guidance to practitioners on strengthening organizational resilience through coordinated reforms in these interconnected domains.

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Annex 1: Pivot table analysis of the dataset

Year	No. of ISBN	No. of ISSN	No. of titles	No. of citations	No. of DOI	No. of Open Access
2024	3	129	130	116	127	64
2023	86	501	574	970	543	211
2022	58	413	462	2,392	447	208
2021	61	373	429	3,784	392	191
2020	44	381	419	5,186	380	168
2019	31	302	331	5,125	285	119
2018	40	251	289	4,142	262	93
2017	51	225	273	5,050	239	63
2016	45	228	274	6,431	242	67
2015	39	276	310	8,710	263	77
2014	45	205	241	5,161	205	53
2013	29	231	254	7,492	229	54
2012	43	178	220	6,249	198	50
2011	49	200	246	6,442	206	45
2010	41	164	204	10,263	174	31
2009	54	207	256	8,023	217	37
2008	32	194	219	12,424	189	38
2007	23	129	153	6,831	132	21
2006	37	119	151	9,350	132	29
2005	24	137	157	8,755	136	14
2004	5	86	91	5,046	80	7
2003	11	73	84	2,799	52	6
2002		63	65	7,269	53	4
2001		30	30	3,688	29	1
2000		29	29	3,669	25	3
1999		18	18	2,132	15	1
1998		22	22	927	20	
1997		12	19	547	12	
1996		10	10	1,177	8	
1995		7	7	280	7	
1994		2	2	244	2	
1993		4	5	194	5	
1992		4	4	511	2	
1990		2	2	83	2	1
1989		1	1	1		
1988		1	1	323	1	
1987		2	2	19	2	
1986		1	1	21	1	
1984		1	1	20	1	
1982		2	2	61	2	
1978		2	2	4	1	
Grand Total	851	5,215	5,990	151,911	5,318	1,656

Source: authors