
Bibliometric Analysis Research on Audit Nexus in Corporate Governance

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ABSTRACT: *Audit study on corporate governance and its influence on the corporate organisation is expanding exponentially. It has been undeniable after the 2007-2008 financial crisis and corporate scandals. This article provides an overview of the evolution of scholarly literature on the relationship between audit and corporate governance in peer-reviewed publications published between 2010 and 2020. The bibliometric method is progressively used when studying various aspects of scientific fields and in the ranking of institutions and universities around the world. An adequate number of studies have been conducted, and with the resulting literature, the bibliometric method can be used using its methodology. Through our bibliometric technique research, we discovered the most influential journals, authors, and influential articles and the annual production of journals, source documents, trending topics, and keyword co-occurrence networks. This study contributes to our understanding of audit in corporate governance studies by reviewing documents systematically using bibliometric techniques and VOSviewer analysis for the study period. Finding results indicated the most influential journals, authors, impactful articles, annual production, source documents, trending themes, and keywords co-occurrence network. The paper also highlights the new trends that have emerged over the decades and suggests future avenues for research in this area.*

KEYWORDS: corporate governance, audit, vosviewer, bibliometric analysis

INTRODUCTION

Many big firms worldwide have faced financial distress and even bankruptcy following the financial crises in the early 2000s and 2007-2008. These corporate scandals have triggered uncertainty, and the consequences of these economic meltdowns have significantly contributed to a thoughtful corporate dissatisfaction and mistrusted capital market (Soltani, 2014). Akbar et al. (2017) found out in the literature that the executive board of directors' underperformance is one of the main factors blameable for the meltdowns. Also, ineffective corporate governance, lack of transparency, and no audit structure are part of this global catastrophe and other financial scandals and fraud (Gupta & Sharma, 2014; Sinnakkannu & Nassir, 2008).

Auditing plays a crucial role in the corporate governance of both public and private firms. They monitor and control executives' performance on behalf of shareholders and help to direct the firm strategic directions. Therefore, corporate governance in private sector companies is based on a managerial level of principal-agent relationship: the owners are the principal, and the board of directors is the agents. The board must be kept to account by the shareholders to ensure the maximisation of shareholder wealth (Ellwood & Garcia-Lacalle, 2015). On the other hand, the public sectors operate differently from the private sector. Corporate governance in the public sector ensures that entities attain their intended outcomes while acting in the public interest at all times (IFAC, 2014). Moreover, corporate governance within public sector organisations is based on a policy level: the impact of their policies on the community or society at large in terms of policy outcomes or value for public money and are focused on service delivery (Almqvist et al., 2013). As a result, it is imperative for a country's rules and regulatory bodies to enforce corporate governance practices for better financial reporting to safeguard shareholders' interests (Gebrayel, Jarrar, Salloum, & Lefebvre, 2018; Kooli, 2019).

The corporate governance scandals raise discussions about the importance of auditing in corporate governance structures and the role of audit attributes. The corporate governance structures' effectiveness and efficiency hang on these within the organisation (Gramling & Hermanson, 2009; Sarens & De Beelde, 2006; Hopt, 2002; Crawford & Stein, 2002). As essential parts of good corporate governance, they monitor the risk and report the internal control system, including risk management (Abdullah et al., 2018; Gebrayel et al., 2018; Kooli, 2019). They also facilitate the quality of financial reporting of credible accounting information in a financial statement of dispersed business operations to shareholders (Alzeban, 2018; Knechel et al., 2008). The alignment of audit functions oversight responsibilities is to provide assurance services to shareholders and employees and, more importantly, to stakeholders to ensure compliance with the company's policies and procedures concerning financial transactions. Although, extant literature rises separately regarding the role and impact of auditing on corporate governance.

The bibliometric method is widely used to analyse written publications quantitatively (Ellegaard & Wallin, 2015). and it's primarily focused on influential mapping publications within a subject and their interrelationships and assessing the evolution of thought on a particular topic (Janssen, 2007). In addition, the method is increasingly being utilised to offer information about the interactions of different groups in the scientific community (Barth et al., 2014). Finally, this method is often used to extract and manipulate data based on the content and citation analysis (Wallin, 2005).

Following the benefits of bibliometric methods to achieve our aim, we used this approach to identify the most influential papers that informed the literature review. Therefore, this review study was focused on the subject pattern of publications, including some production, discipline or subject type, source documents, type of journals, authors, institutions, geographical locations, trending articles, and keywords. We picked papers ranked in the top 10 positions for each bibliometric indicator and removed duplicates to identify the list of documents to be reviewed. Finally, we explored the most influential papers published in the audit journals that offer insights into the audit and corporate governance studies following

corporate scandals and business failures in the 2007-2008 era. Our study, which employs a bibliometric analytical approach, intends to help corporate scholars and researchers better understand the audit role in corporate governance and how past research might help control future occurrences. Furthermore, the intended audience for this study is summarising scientific papers that are scattered across fields. Therefore, the critical discussion is centred on review literature to describe, assess and share information from diverse areas, following these research questions:

RQ1. What are the total number of the document type, sources documents, distribution by periods, and influential journal types on the subject field?

RQ2. What are the leading influential: authors, institutions, impactful trending academic cited documents on the subject field?

RQ3. What are scholars' keywords which have drawn attention to the subject area in the present and future directions using Vos Viewer?

RQ4. What are the research trending theme areas identified in the literature review?.

Justification and significance of the study

Researchers have attempted empirically to study the effectiveness of the audit nexus on corporate governance or addressed the impact of audit on the corporate performance relationship after the global financial crisis in 2009. Therefore, there is a need to review empirical studies of the effects and effectiveness of the audit nexus on corporate governance. The evaluation methodology is bibliometric analysis, one of the newest methods, showing the general overview of the study (Ellegaard & Wallin, 2015). Also, the bibliometric analysis examines the underlying scope, current status, and achievements (Tunger & Eulerich, 2018; Castriotta, Loi, Marku, & Naitana, 2019). This method is equally applicable to all review studies and any scientific field of subjective categories. Therefore, it is imperative to review the audit nexus in corporate governance. This study is the first that offers evidence of audit nexus on corporate governance from only audit journals to show the practical process of all categories involved from extraction to the general overview and show the trend of audit themes identified in the review for future research from 2010-2020.

The study adds to the existing literature by sharing more ideas and gaining an in-depth understanding of audit and corporate governance scholars and practitioners interested in investigating the role of audit on corporate governance. Furthermore, it contributes to future research discussion and the direction of bibliometric methods. Moreover, it will attempt to review evolution documents to provide researchers and practitioners with complete and insightful research reviews of collaboration networks of the author's keywords using VoSviewer.

The subsequent sections discuss the literature review, the methodology used for information retrieval, and bibliometric indicators and conclusions.

LITERATURE REVIEW

Bibliometric Analysis Studies of Audit and Corporate Governance

Macias-Chapula (1998) bibliometric analysis is a methodology that cares about the scientific production register and disseminating and using registered information. However, its contribution is only accepted after it is published, judged, criticised, and grouped with the existing knowledge after others have acquired the research through papers published in scientific journals. And for this reason, it is imperative to value a scientific field by following several research papers (Souza et al., 2008).

Behrend and Eulerich (2019) conducted bibliometric analysis research on the rising of internal audits in the post-SOX era using 170 articles from 5 leading accounting journals from 1926- to 2016. The results indicate that internal auditors work in accounting fragmented from other corporate governance parties. In post-SOX, Behrend and Eulerich (2019) further conducted a bibliometric analysis on the audit committee of 92 published articles in six leading accounting journals from 1977-2018. It reveals that audit committee corporate oversight and its effect on financial reporting and internal control quality shows a higher homogeneity in audit committee-related studies in leading accounting journals, especially regarding sampling selection. Moreover, Cunha et al. (2016) surveyed the international scientific production of audit committee bibliometric review from 130 international journals database from Scopus and ISI Web Knowledgebase from 2000-2012. They found out that the independence of the audit committee and effective corporate governance are among the most addressed. Aside from this, the academic trend toward author's collaboration is receiving much attention in the internal audit community.

Ali et al. (2018) assessed the literature published in the internal audit field using empirical and bibliometric indicators. The research discovered 557 documents from the Scopus database to identify the relevant research in the domain categorised by title, keyword, type of documents, authors, growth of publications, research productivity, and countries. The United States of America ranked the highest in productivity, while Business, Management, Accounting and Economics, Econometrics and Finance are listed as the top choices in the subject area.

The previous bibliometric analysis study noted that research on this emerging trend in literature adds to established scholarly literature technique study to understand the prospect outcome of obtaining appropriate documentation for future direction.

RESEARCH METHOD

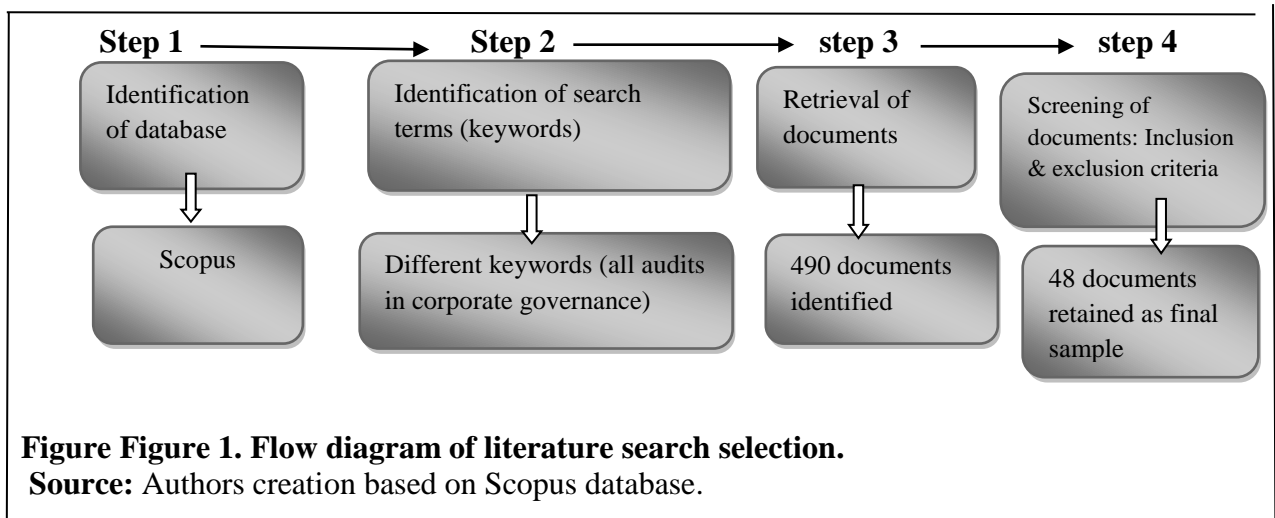
Bibliometric analysis is a statistical analysis method that enables a quantitative understanding of scientific literature (Benckendorff and Zehrer, 2013). It provides the activity yield and the relation Indexes. While the result determines the effect or influence of impact, link indicators measure the interaction between the study researchers and their related fields. For this study, data information analysis was related to auditing work on corporate governance and retrieved from the Scopus repository, which contains the most considerable database than the Web of

Science (Falagas et al. 2008). At the same time, it has a broader citation database coverage in the social sciences, especially in 1996 (Vieira & Gomes, 2009).

Identification of data extraction of literature (Search strategy)

The data for this research was obtained from the Scopus database. First, we searched Scopus for specific keywords-. "corporate governance," AND audit* AND "audit quality," AND ("external audit" OR "audit committee" OR "internal audit." The search produced an initial number of 490 documents and then restricted to auditing journals which produced 410 papers for this study. Secondly, our Scopus search refined into business, management, and accounting as a subject area reduced to 265. Finally, a further investigation was done on the years from 2010 to 2020 as of 20/12/2020 to 185 documents. The documents extracted were exported to an excel spreadsheet. We checked for papers focused on audit and corporate governance issues in selecting relevant papers. After eliminating duplicates, 48 documents are left to consider within the study period, as shown in Figure Figure 1.

The study addressed the method comparisons of the total number of publications by authors, institutions, countries, discipline areas, year growth, document types, and journals. A sample size of 10 top players was chosen from the repository to present the table analyses on the field to evaluate the publications. Related 10 top papers for this study aimed to compare the total number of publications and influence by authors, institutions, countries, disciplines areas, year growth, types of documents, and journals. The findings were grouped into total production (TP), total citations (TC), and highly indexed (h-index) in a table format and VOS viewer for frequency ranking of authors' keywords to identify the gap for future research.



3.2. Data Analysis

After completing the data extraction strategy, the analysis was done through processes like the total number of publications, citations count, and the h-index. Merigo et al. (2015) believe the three most practical papers that define a group value are the number of publications, citations, and h-index. The publication count has received much consideration since it is classified as establishing the author, institutions, and country influence (Borokhovich et al.,

1995). Furthermore, the h-index is a modern technique that combines both publications and citation counts under one framework (Hirsch, 2005). The study used bibliometric analysis indicators and identified the most relevant research area in the scientific field that considered years of growth of publications, document type, source documents, journals, keywords, documents titles, research productivity by institutions, countries, and authors.

4. Research Analysis and Findings

Balancieri (2004) bibliometric is a quantitative aspect of study productions, dissemination, register, and information use. The results obtained were to review documents of audit nexus in corporate governance research published between 2010-2020 to provide researchers and practitioners with complete and insightful research reviews using bibliometric analysis indicators as in **Error! Reference source not found.** In addition, this study will display the evolution of the main constituents of knowledge mapping of collaborations research and identify research frontiers.

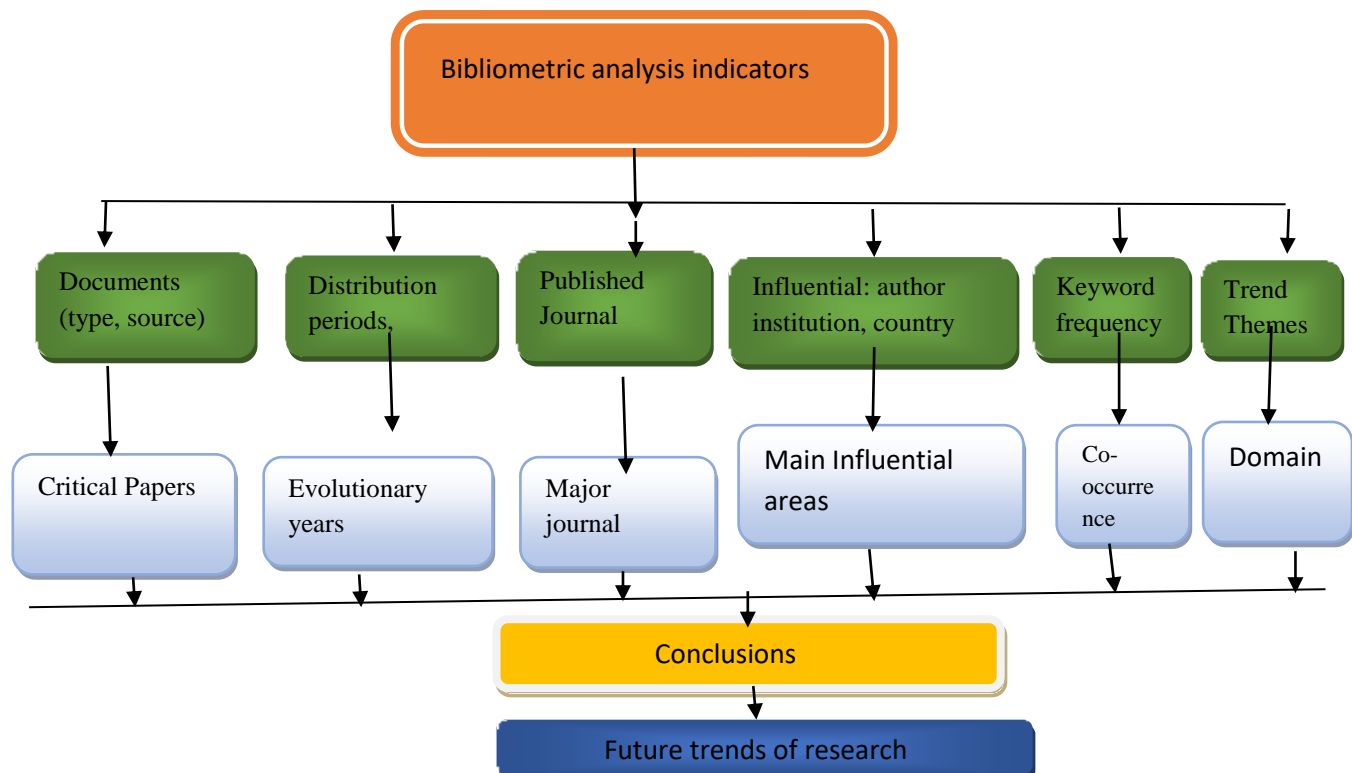


Figure 2. Flow diagram of bibliometric analysis indicators

Source: Authors creation based on Scopus database

Document Types

Table 1 below shows the document types for studying the scientific field of audit impact on corporate governance, as the title developed within the auditing framework in corporate governance. The document consists of 45 articles, 2 books, and 1 review document. The documents impacting the other author's work have 510 reference citations from the articles with the highest index of 14, followed by 18 total counts from just 1 review document. The 2

books have 5 citations. These documents provide an important signal about spreading the scientific field on articles and other publications.

Table 1. The type of documents source

Document Types	TP	TC	H-Index
Articles	45	510	14
Book	2	5	1
Review	1	18	1

Source: Authors creation based on Scopus database.

Documents source

Table 2 below shows that out of 48 documents published from 2010 to 2020, 46 publications were from journal articles, including 1 review paper on the audit, which will be published later, and 2 books related to corporate governance issues. This section comparatively shows how influential auditing journals are, with 528 total citation counts, 15 highly indexed, while the factor of the impacting book is 5. Those journals relating to auditing aspects have more relation with corporate governance than books on the scientific field.

Table 2. The type of source document

Source	TP	TC	H-Index
Journal	46	528	15
Books	2	5	1
Total	48	533	16

Source: Authors creation based on Scopus database

Publication output and growth of interest

As you can see from Figure 3 primarily, there was an increasing trend of papers in the scientific field under review from 2010 to 2020. The ups and downs movement has a reason for that effect. Journal, institutional publications, and authors' productions are the main courses within these periods. Note that 2015 recorded the highest rate of papers - 10, followed by 2019 with 7 works. The rest of the years recorded appreciable papers, as some might have published on other websites like Weber of Science, Emerald and JSTO. However, the publications are not so bad since science is gradually receiving attention.

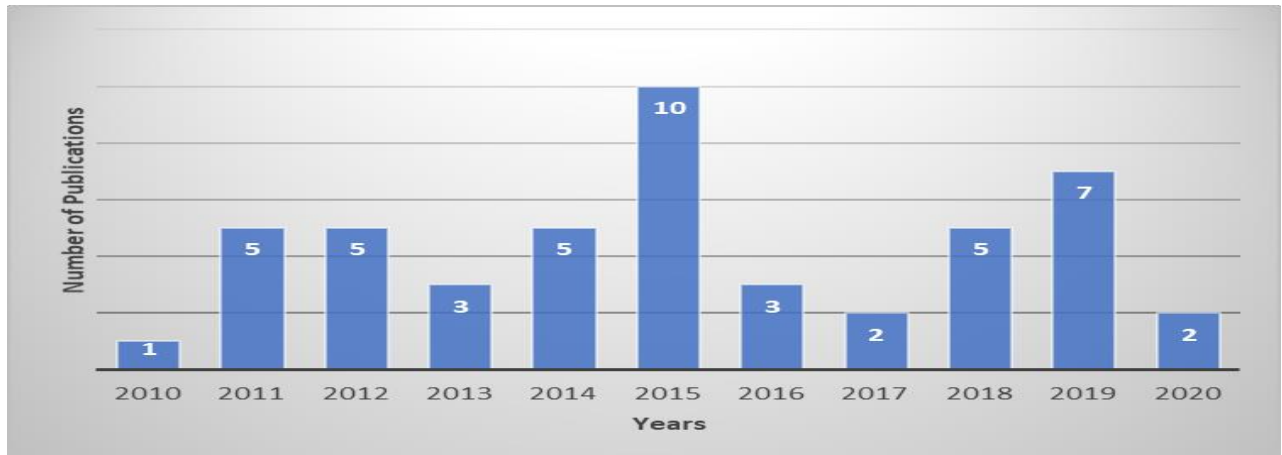


Figure 3. Number of publications by year

Source: Authors creation based on Scopus database

Preferred Journal Type

This section looks into the type of journals that articles of corporate governance and audit mostly published. Table 3 illustrates total publications indicating how many papers have been published in each journal type, and the percentage shows the contribution of each journal overall. Among the ten chosen journals relating to auditing with impact in corporate governance, the Management Accounting Journal has 20 publications representing 42 %. The closest journals to the highest are the International Journal of Auditing, Journal of International Auditing Accounting and Taxation, with 8 and 6 publications, respectively. Accounting, Auditing and Accountability Journal, International Journal of Accounting, Auditing and Performance Evaluation have three papers each. Of the last seven ones, three of them have two publications, while the remaining one has one paper, respectively.

Table 3. The 10 top influential journals

Journal	Abbreviations	Total Publications	Percentages
Management of Auditing Journal	MAJ	20	42
International Journal of Auditing	IJA	8	17
Journal of International Auditing Accounting And Taxation	JIAAT	6	13
Accounting Auditing And Accountability Journal	AAAJ	3	6
International Journal of Accounting Auditing And Performance Evaluation	IJAAPE	3	6
Auditing	A	2	4
Current Issues In Auditing	CIA	2	4
Journal of Accounting Auditing And Finance	JAAF	2	4
Audit Committee Essentials	ACE	1	2
Audit Committee Hard Book Edition	ACHBE	1	2

Source: Authors creation based on Scopus database

List of published documents on the field of audit on corporate governance

Table 4 shows the most influential document sorted by citation of each paper. This section provides whether the document received more citations at the end of the time of the period studied. The document with higher citation shows the impact the document has on the other papers. The documents retrieved and analysed were forty-eight, out of which forty-six are strictly articles, including a review paper, and the other two are book references from **Error! Reference source not found.** Sarens and Abdolmohammadi (2011) paper is the most cited and influential paper, with 48 citations. These review documents demonstrate how to audit the impact on corporate governance issues. The remaining documents have respective citations, however, few have not had any citations at the end of the retrieved period.

Table 4. The influential documents

Authors	Title	Year	Source Type	Citations
<i>Yapa P.W.S., Ukwatte Jalathge S.L., Siriwardhane</i>	The professionalisation of auditing in less developed countries: the case of Sri- Lanka	2017	Managerial Auditing Journal	5
<i>Srivastava V., Das N., Pattanayak J.K.</i>	Impact of corporate governance attributes on cost of equity: Evidence from an emerging economy	2019	Managerial Auditing Journal	1
<i>Jizi M., Nehme R.</i>	Board monitoring and audit fees: the moderating role of CEO/chair dual roles	2018	Managerial Auditing Journal	5
<i>Halbouni S.S., Obeid N., Garbou A.</i>	Corporate governance and information technology in fraud prevention and detection: Evidence from the UAE	2016	Managerial Auditing Journal	7
<i>Matonti G., Tucker J., Tommasetti A.</i>	Auditor choice in Italian non-listed firms	2016	Managerial Auditing Journal	3
<i>Appuhami R., Bhuyan M.</i>	Examining the influence of corporate governance on intellectual capital efficiency evidence from top service firms in Australia	2015	Managerial Auditing Journal	20
<i>Buckby S., Gallery G., Ma J.</i>	An analysis of risk management disclosures: Australian evidence	2015	Managerial Auditing Journal	17
<i>Alzeban A.</i>	Influence of audit committees on internal audit conformance with internal audit standards	2015	Managerial Auditing Journal	11
<i>Mustafa S.T., Ben Youssef N.</i>	Audit committee financial expertise and misappropriation of assets	2010	Managerial Auditing Journal	15
<i>Al-Najjar B., Abed S.</i>	The association between disclosure of forward-looking information and corporate governance mechanisms: Evidence from the UK before the financial crisis period	2014	Managerial Auditing Journal	15
<i>Harjoto M.A., Laksmiana I., Lee R.</i>	The impact of demographic characteristics of CEOs and directors on audit fees and audit delay	2015	Managerial Auditing Journal	16
<i>Chung H.H., Wynn J.P.</i>	Corporate governance, directors' and officers' insurance premiums and audit fees	2014	Managerial Auditing Journal	8
<i>Lenard M.J., Petruska K.A., Alam P., Yu B.</i>	Indicators of audit fees and fraud classification: Impact of SOX	2012	Managerial Auditing Journal	8

<i>Johl S.K., Kaur Johl S., Subramaniam N., Cooper B.</i>	Internal audit function, board quality and financial reporting quality: Evidence from Malaysia	2013	Managerial Auditing Journal	33
<i>Bhattacharya A., Banerjee P.</i>	An empirical analysis of audit pricing and auditor selection: evidence from India	2019	Managerial Auditing Journal	0
<i>Fachriza, Z.S., Mardijuwono, A.W.</i>	Corporate governance, ownership concentration and audit quality	2020	Cuadernos de Economia	0
<i>Omer W.K.H., Al-Qadasi A.A.</i>	Board of directors' effectiveness and monitoring costs: The role of family control. Malaysian evidence	2019	Managerial Auditing Journal	0
<i>Mitra S., Hossain M., Marks B.R.</i>	Corporate ownership characteristics and timeliness of remediation of internal control weaknesses	2012	Managerial Auditing Journal	5
<i>Romano G., Guerrini A.</i>	Corporate governance and accounting enforcement actions in Italy	2012	Managerial Auditing Journal	4
<i>Greco G.</i>	Determinants of board and audit committee meeting frequency: Evidence from Italian companies	2011	Managerial Auditing Journal	22
<i>Feng Y., Gao S., Li W., Lv H.</i>	Determinants of audit committee meeting frequency: Evidence from Chinese listed companies	2012	Managerial Auditing Journal	8
<i>Lobanova O., Mishra S., Raghunandan K., Aidov A</i>	Dual-class ownership structure and audit fees	2020	International Journal of Auditing	0
<i>Sarens G., Abdolmohammadi M.J.</i>	Monitoring effects of the internal audit function: Agency theory versus other explanatory variables	2011	International Journal of Auditing	48
<i>Eklöv Alander G.</i>	Clash of corporate governance logics obscuring auditor independence	2019	International Journal of Auditing	0
<i>Abdullah R., Ismail Z., Smith M.</i>	Audit committees' involvement and the effects of quality in the internal audit function on corporate governance	2018	International Journal of Auditing	1
<i>Soh D.S.B., Martinov-Bennie N.</i>	Factors associated with internal audit's involvement in environmental and social assurance and consulting	2018	International Journal of Auditing	0
<i>Gebrayel E., Jarrar H., Salloum C., Lefebvre</i>	Effective association between audit committees and the internal audit function and its impact on financial reporting quality: Empirical evidence from Omani listed firms	2018	International Journal of Auditing	0
<i>Houqe M.N., Ahmed K., van Zijl T.</i>	Audit Quality, Earnings Management, and Cost of Equity Capital: Evidence from India	2017	International Journal of Auditing	6
<i>Liu S.</i>	Corporate governance and forward-looking disclosure: Evidence from China	2015	Journal of International Accounting, Auditing and Taxation	6

<i>Pinto I.</i>	Asset value management in the Portuguese real estate sector	2013	Journal of International Accounting, Auditing and Taxation	1
<i>Gao L., Kling G.</i>	The impact of corporate governance and external audit on compliance to mandatory disclosure requirements in China	2012	Journal of International Accounting, Auditing and Taxation	24
<i>Zéghal D., Chtourou S., Sellami Y.M.</i>	An analysis of the effect of mandatory adoption of IAS/IFRS on earnings management	2011	Journal of International Accounting, Auditing and Taxation	47
<i>Kovermann J., Velte P.</i>	The impact of corporate governance on corporate tax avoidance—A literature review	2019	Journal of International Accounting, Auditing and Taxation	0
<i>Samaha K., Khlif H., Hussainey K.</i>	The impact of board and audit committee characteristics on voluntary disclosure: A meta-analysis	2015	Journal of International Accounting, Auditing and Taxation	46
<i>Shan Y.G.</i>	The impact of internal governance mechanisms on audit quality: A study of large listed companies in China	2014	International Journal of Accounting, Auditing and Performance Evaluation	6
<i>O'Leary C., Boolaky P., Delaney D.</i>	Accounting regulation changes: Differing attitudes of directors and auditors	2013	International Journal of Accounting, Auditing and Performance Evaluation	0
<i>Samaha K., Dahawy K.</i>	An empirical analysis of corporate governance structures and voluntary corporate disclosure in volatile capital markets: The Egyptian experience	2011	International Journal of Accounting, Auditing and Performance Evaluation	40
<i>Ackers B., Eccles N.S.</i>	Mandatory corporate social responsibility assurance practices: The case of king III in South Africa	2015	Accounting, Auditing and Accountability Journal	35
<i>Brennan N.M., Kirwan C.E.</i>	Audit committees: Practices, practitioners, and praxis of governance	2015	Accounting, Auditing and Accountability Journal	18
<i>Maroun W.</i>	Exploring the rationale for integrated report assurance	2019	Accounting, Auditing and Accountability Journal	0
<i>Kleinman G., Lin B.B., Palmon D.</i>	Audit quality: A cross-national comparison of audit regulatory regimes	2014	Journal of Accounting, Auditing and Finance	10
<i>Brockman P., Krishnan G., Lee H.S., Salas J.M.</i>	Implications of CEO Succession Origin and In-House Experience for Audit Pricing	2019	Journal of Accounting, Auditing and Finance	0

<i>Cohen J.R., Gaynor L.M., Krishnamoorthy G., Wright A.M.</i>	The impact on auditor judgments of CEO influence on audit committee independence	2011	Auditing	33
<i>Gold A., Klynsmi P., Wallage P., Wright A.M.</i>	The impact of the auditor selection process and audit committee appointment power on investment recommendations	2018	Auditing	0
<i>Almer E.D., Philbrick D.R., Rupley K.H.</i>	What drives auditor selection?	2014	Current Issues in Auditing	8
<i>Brown J.O., Popova V.K.</i>	The interplay of client management and the audit committee on auditor performance	2016	Current Issues in Auditing	0
<i>Braiotta L., Jr., Gazzaway R.T., Colson R.H., Ramamoorti S.</i>	The Audit Committee Handbook: Fifth Edition	2015	The Audit Committee Handbook: Fifth Edition	0
<i>Verschoor C.C.</i>	Audit Committee Essentials	2015	Audit Committee Essentials	5

Source: Authors creation based on Scopus database

Influential author

From

Table 5 illustrates the most influential author in the research field of audit and corporate governance studies. The study of influential authors is among the essential factors in the bibliometric analysis, whose contribution to the scientific field and growth is needed (Nerur et al., 2007). The section looks at the total retrieved publications (TP), and total citations (TC) received on each published document. The most influential author rank the highest citation on the documents published relative to the scientific field. Sarens and Abdolmohammadi (2011), with 1 production, received the highest total citation of 48. This is followed by Samaha et al. (2015), who had 1 documents with 46 total citations among the top ten most influential authors. Other authors have documents with or without total citations on their respective published documents. Most the top authors find their documents in the leading journals relating to auditing than in other journals. International Journal of Auditing

has the most published works from the authors, appearing five times, followed by Auditing and Management of Auditing Journal. The rest maintain one paper each from the selected journals. This suggests that research study in this scientific remains important and suitable for subsequent analyses.

Table 5. The 10 most influential authors

Authors Names	TP	TC	Year	Journal
Sarens G., Abdolmohammadi M.J	1	48	2011	International Journal of Auditing
Samaha K., Khlif H., Hussainey K	1	46	2015	Journal of International Accounting, Auditing and Taxation
Samaha K., Dahawy K.	1	40	2011	International Journal of Accounting, Auditing and Performance Evaluation
Ackers B., Eccles N.S	1	35	2015	Accounting, Auditing and Accountability Journal
Cohen J.R., Gaynor L.M., Krishnamoorthy G., Wright A.M	1	33	2011	Auditing
Al-Najjar B., Abed S.	1	15	2014	Managerial Auditing Journal
Houqe M.N., Ahmed K., van Zijl T.	1	6	2017	International Journal of Auditing
Abdullah R., Ismail Z., Smith M	1	1	2018	International Journal of Auditing
Lobanova O., Mishra S., Raghunandan K., Aidov A	1	0	2020	International Journal of Auditing
Gold A., Klynsmi P., Wallage P., Wright A.M	1	0	2018	Auditing

Source: Authors' creation based on Scopus database

Influential Institution and country

This area presents the discussion of audit and corporate governance research by examining the research's institution and country of origin. Table 6 presents the top ten institutions and country domicil contributions by total publication and the citation influence received on the scientific field. The ranking was based on publications, citation counts, and the h-index factor. With two publications each, The America University in Cairo, which is based in Egypt, Macquarie University in Australia, North-Eastern University in the USA, Università di Pisa in Italy, and Kent State University in the USA ranked first among the top ten. The evidence also shows that the remaining institutions had one publication, respectively. The America University in Cairo remains an influential institution with 86 citations. This shows how influential the institution's papers have on readers and researchers. Not forgetting the next cited one, the Bentley University in the US had forty-eight citations. In addition, other institutions have quite a number of citations. According to Hirsch (2005), the h-index is a modern technique that combines both measures of publications and citation counts under one framework. The America University in Cairo and Università di Pisa have two h-indexes compared to other institutions. Interestingly, the remaining had one, except the University of South Africa and Infogix Inc., with no h-index. Moreover, the two most 2 influential institutions are located in Egypt and the USA. Finally, it is worth noting that most of the institutions or universities are mainly from the United States of America (USA), followed by Australia and Italy. South Africa and Egypt are the only developing countries with current papers in this scientific field. This indicates that research in the scientific field has gone on and still takes shape in these significant institutions.

Table 6. The 10 top institutions and country's location

Institution	TP	TC	H-Index	Country
The America University in Cairo	2	86	2	Egypt
Macquarie University	2	20	1	Australia
North-Eastern University	2	33	1	USA
Università di Pisa	2	26	2	Italy
Kent State University	2	17	1	USA
University of South Africa	1	0	0	South Africa
Bentley University	1	48	1	USA
RMIT University	1	5	1	Australia
Infogix, Inc	1	0	0	USA
Management and Innovation System	1	3	1	Italy

Source: Authors' creation based on Scopus database

Co-occurrence Analysis

The co-occurrence depicts the presence of terms or words that are often used and highly correlated in publications relevant to a given field of research. Comerio and Strozzi (2019), keywords provide adequate details about the content of an article. They can serve as an additional measure for identifying the flow of knowledge and tracing any scientific research trend (Madani & Weber, 2016). It also provides insight into significant study themes in the field (Van Eck & Waltman, 2014). According to Donthu et al. (2021), the co-occurrence of

the objectives and fit into the bibliometric method research, making it easy for researchers to find related articles.

We selected the base of the most popular and related documents in audit journals and matched them against this study objective. The aim is to give a general overview of the impact of audits on corporate governance based on the research questions. We identified three main groups of audit studies in corporate governance research. All three main groups have diverse audit attributes in corporate governance research; however, they share the same interest irrespective of geographical location and operational direction.

Our first observation is that studies around internal audits about corporate governance coverage indicate positive and significance. Many literature reviews find that internal audit quality and controls strengthen firms' and organisations' corporate governance systems in emerging economies. Our studies had supported previous research appropriately to internal audit functions, which directly impact the importance of corporate governance (see. Vadasi, Bekiaris, & Andrikopoulo, 2020; Al-Matari & Mgammal, 2019; Abdullah et al., 2018; Sarens & Abdolmohammadi, 2011).

Secondly, auditing research is diverging into external audits, a range of review documents discussing the relative importance of the relationship between audit and corporate governance. Unlike an internal audit, an external audit tends to prevent, detect, and report an organisation's fraud to protect the various stakeholders' interests by providing reasonable assurance that the management's financial statements are free from material misstatements. It envisages that reliance on external audit reports has economic consequences and implications for corporate governance efficiency and effectiveness. A review of all prior literature shows that an effective external audit ensures a firm's corporate governance transparency and accountability. This implies a significant positive relationship between external audits and corporate performance. The corporation cannot submit altered information supported by empirical proof (see. O'Leary, Boolaky, & Delameu, 2013; Gaoa & Kling, 2012; Kooli, Jamrah, & Al-Abri, 2019).

Thirdly, the audit committee, which plays positive monitoring or serves as a link between a company board, an internal monitoring system, and external auditors' financial reporting, is diving into more studies. Audit committees and corporate governance have a perceived alignment because they focus on internal audit and external audit reporting. By matching the functions of an audit committee with corporate governance in the literature reviews, we found the quality of an audit committee attributes research on corporate governance is positive when associated with firm performance (Kooli & Abadli, 2021; Kooli, 2019; Alander, 2019; Gebrayel et al., 2018; Brown, Popova, & Velina, 2016; Samaha, Khlif, & Hussainey, 2015; Al-Najjr & Abed, 2015).

DISCUSSIONS AND FUTURE SCOPE FOR RESEARCH

This study answers the research questions provided and offers an overview of the research review of literature in the field of audit and corporate governance study using bibliometric analysis.

RQ1 deals with document type, source, periods, and journal on the subject field. We found that the entire research document published over the years has increased upward trend (RQ1). As a result of the failure of multiple banks and corporate bodies worldwide, academics have attempted to study the role of audits in many of these failed corporations, both within and across country boundaries. Although the concept of corporate scandals started almost decades ago, the research output in this area has not yet reached. It hit a new high in 2015 after the 2007-2008 financial crisis that affected many banks and corporate entities. With the world facing a financial crisis, the auditing activities in the corporate organisation have been severely criticised, which provides new opportunities for research in the field. We find that article was the primary document type than others in the scientific audit field in corporate governance. Another area of interest is identifying the quantitative and qualitative studies that focus on corporate governance and audit. The Management of Audit journal has more research publications among audit journals, making it an influential journal.

RQ2 deals with influential papers, authors, and institutions areas on the subject field?. In terms of the most influential author in the field, Sarens and Abdolmohammadi (2011) 48 citations, making them the most influential authors. The most influential institution in citation came from The America University in Cairo. Also, because developed countries' institutions published most documents, the United States of America has many institutions that published papers in the scientific field. A few developing countries, such as Egypt and South Africa, are also included in the top 10 productive countries due to the meaningful contributions of their papers. Another area of interest is the impact of academic papers, which highlight specific works that have set the groundwork for certain concepts in audit and corporate governance research. These influential papers are generally conceptual or empirical studies conducted globally that have influenced the current research. The "*Monitoring effects of the internal audit function: Agency theory versus other explanatory variables*" by Sarens and Abdolmohammadi (2011) is the most influential document at the end of retrieving the document.

RQ3 deals with co-occurrence keywords that have drawn attention to the subject area in the present and future directions. The keyword co-occurrence analysis highlights the most common keywords consistent with our theme sets derived from VOSview visualiasation. Over time, keywords like "corporate governance," "audit," "audit quality," "external audit," "audit committee," and "internal audit" have evolved in recent years. These novel keywords have entered the domains of scholars, resulting in the expansion of research studies, all of which have an impact or may affect the literature.

RQ4. deal with the primary trending themes identified in the literature evaluation in the study. The review process has been examined from several angles. The first debate focuses on the impact of the audit nexus on the dynamics of corporate governance. Scholars have demonstrated that corporate failures have prompted audit and corporate governance studies. Research, in particular, can facilitate knowledge sharing, even amongst companies in the same market. Other researchers have looked at the effectiveness of having an audit function in a company's corporate governance system to increase a company's shareholders' protection from pure corporate failure. Another line of research has focused on the relationship between audit and corporate governance studies and developing internal control capabilities inside

companies to benefit fully. These are brought to light through the impactful papers' review and content analysis. The themes built the literature of audit and corporate governance studies.

CONCLUSION AND FUTURE DIRECTIONS

This paper presents a retrospective review of audit relationships in corporate governance studies from 2010 to 2020. The review analysis was done using bibliometric indicators to give a general overview of prior studies, a trend of studies, and future directions. This study attempts to capture the extent of this study's growth and contribute to the literature. First, it tracks the development of research and interest in this topic over the years, document type, sources documents, and Preferred Journal Type on the subject field? Second, it highlights the most influential authors, countries, institutions, and impactful research papers, highlighting the research studies in this area. Third, it uses VoSviewer to reveal the keywords' co-occurrences by bringing keywords together in this area of research. Fourth, use the literature to examine trending theme areas to understand various concepts and themes that have arisen and taken shape over the years and the new dimensions of sub-topics. To better understand the study, we developed four research questions. The summary of each result findings is provided as follows:

Concerning our RQ1, many of the research studies were from articles, whereas journals recorded the highest source documents on this topic. The study witnessed a publication growth in 2015 with ten papers; however, it suddenly dropped years later, showing that research has not reached saturation. Following this, journal documents receive the boost sources with Management of Audit (MAJ), the most influential journal with the most productive and cited papers in the study area.

With regards to Q2. As the authors' interest increased in the research field, productivity and influence increased concurrently. We found that Sarens and Abdolmohammadi (2011) were the most influential authors. Similarly, to the top, we found most institutions came from the United States of America. In addition, we find that Sarens and Abdolmohammadi (2011) have the most impactful trend of articles with 48 counts, on the title: "Monitoring effects of the internal audit function: Agency theory versus other explanatory variables".

Q3. The co-occurrence network analysis on keywords in search of the papers using VOSviewer, reveals consistent flow with the theme. All the keywords co-occurrence has identified each link and the strength of closeness to "corporate governance" as the strongest link, followed by the audit committee.

Q4. Furthermore, the proposed study trend theme for the future could help academicians and practitioners who want to promote bibliometric research, follow-up studies, and updates. Simultaneously, a gap in the existing corpus of literature will be filled.

The paper makes a significant contribution to literature in terms of methodology. This paper's main methodological contribution is introducing a method for identifying a comprehensive yet concise list of documents in the field, considering yearly production, influential and

impactful publications, and network link strength. Researchers who seek to combine systematic literature reviews and bibliometric analysis (Dabić et al., 2019). Secondly, it proposes diversifying studies of audit relations in corporate governance in countries and institutions. Finally, it suggests a new lens of analysis for researchers and practitioners who want a diverse theme and keyword studies using a bibliometric approach.

The main limitations are that the data was only retrieved from Scopus, which may not include all relevant papers for this review paper. Furthermore, the Scopus data may not have been designed expressly for bibliometric analysis and may contain inaccuracies that affect the outcome. In addition, the available information is limited to 2010-2020, which may influence the outcome. Furthermore, a few keywords were used to obtain content from the chosen database. In the future, other keywords relating to this field of study may be used.

Future directions

The study highlighted the relevant literature of 48 documents, and the bibliometric analysis methods used in the study of auditing in corporate governance have helped our review of keyword co-occurrence analysis of existing research.

Contributions from countries

Developed countries such as the United Kingdom, Canada, Italy, and France are among the top ten research documents. Nonetheless, there is a scarcity of research investigations in this scientific field. As a result, additional research and studies from these countries might be a source of learning to completely grasp the evolution of the audit and corporate governance system.

Research studies from emerging economies for understanding auditing's function in corporate governance may differ from country to country due to political restrictions, legal environment, and governance systems. As a result, there is a need to conduct an audit and corporate governance research, considering the implications of studies from developed countries as a helpful framework for researchers. Among the countries are Egypt, India, Lebanon, and China are examples of developing economies in the top 10 have the few studies, and these must continue.

Keywords

The audit quality, which is created for reviewing the work in a corporate failure, is relatively unexplored. Audit independence research is an area for future viability that may be performed to understand better the independence of audit work in an effective corporate governance system. Research on these keyword areas can provide significant insights into the understanding of audit works in corporate governance for practitioners and researchers in practice.

Collaborations

Collaborations between authors from advanced and emerging economies are particularly appealing. Such cooperation, if pursued, would allow for the expansion of ideas and the development of globally recognised best practices in auditing and corporate governance studies.

Studies using networks

There is comprehensive coverage of research studies using bibliometric analysis to explore many areas, however comparing collaboration such as co-authorship, author-institutions, or author-to-country specifics. There is the need to use networkings like VOSviewer, biblioshany, CitNetExploere, CiteSpace, Gephi and Histcite. This will help provide the best practice guide on how the bibliometric method can be effectively interlinked within the auditing and corporate governance studies.

References

- Abdullah, R., Ismail, Z., & Smith, M. (2018). Audit committee involment and the effects of quality in the internal audit function on corporate governance. *International Journal of Auditing*, 22(3), 385–403.
- Akbar, S., Kharabsheh, B., Poletti-Hughes, J., & Shah, S. Z. . (2017). “Board structure and corporate risk-taking in the UK financial sector.” *International Review of Financial Analysis*, 50(March), 101–110.
- Al-Matari, E. ., & Mgammal, M. . (2019). The moderating effect of internal audit on the relationship between corporate governance mechanisms and corporate performance among Saudi Arabia listed companies. *Contaduria y Administracion*, 64(4), 1–27.
- Al-Najjr, B., & Abed, S. (2015). The association between disclosure of forward-looking information and corporate governance mechanisms: Evidence from the UK before the financial crisis period. *Managerial Auditing Journal*, 29(7), 578–595.
- Alander, E. . (2019). Clash of corporate governance logics obscuring auditor independence. *International Journal of Auditing*, 32(2), 336–351.
- Ali, A., Ahmi, A., & Ahmad, W. N. . (2018). The Current State of the Internal Audit Research: A Bibliometric Analysis. *5th International Conference on Accounting Studies (ICAS 2018) 16-17 October 2018, Penang, Malaysia*.
- Almqvist, R. G., Grossi, J., van Helden, C., & Reichard. (2013). “Editorial. Public Sector Governance and Accountability.” *Critical Perspectives on Accounting*, 24, 479–487.
- Alzeban, A. (2018). “CEO involvement in selecting CAE, internal audit competency and independence, and financial reporting quality.” *Journal of Business Economics and Management*, 19(3), 456–473.
- Balancieri, R. (2004). *Análise de redes de pesquisa em uma plataforma de gestão em ciência e tecnologia: uma aplicação à Plataforma Lattes*. Universidade Federal de Santa Catarina,.
- Barth, M., Haustein, S., & Scheidt, B. (2014). The life sciences in German–Chinese cooperation: an institutional-level co-publication analysis. *Scientometrics*, 98(1), 99–117.
- Behrend, J., & Eulerich, M. (2019). Four Decades of Audit Committee Research: A Bibliometric Analysis (1977 { 2018). *Retrived 13/03/2020*, 43. [https://doi.org/Behrend, Joel and Eulerich, Marc, Four Decades of Audit Committee Research: A Bibliometric Analysis \(1977–2018\) \(November 30, 2019\). Available at SSRN: https://ssrn.com/abstract=3496040 or http://dx.doi.org/10.2139/ssrn.3496040](https://doi.org/Behrend, Joel and Eulerich, Marc, Four Decades of Audit Committee Research: A Bibliometric Analysis (1977–2018) (November 30, 2019). Available at SSRN: https://ssrn.com/abstract=3496040 or http://dx.doi.org/10.2139/ssrn.3496040)
- Benckendorff, P., & Zehrer, A. (2013). A network analysis of tourism research. *Annals of Tourism Research*, 43, 121–149. <https://doi.org/10.1016/j.annals.2013.04.005>

- Borokhovich, K. A., Bricker, R. J., Brunarski, K. R., Simkins, & B.J. (1995). Finance Research Productivity and Influence. *Journal of Finance*, 50(5), 1691–717.
- Brown, J., Popova, O., & Velina, K. (2016). The Interplay of Client Management and the Audit Committee on Auditor Performance. *Current Issues in Auditing*, 10(1), 11–17. <https://doi.org/10.2308/CIIA-51424>
- Castriotta, M., Loi, M., Marku, E., & Naitana, L. (2019). What’s in a name? Exploring the 794 conceptual structure of emerging organizations. *Scientometrics*, 118(2), 407–437.
- Comerio, N., & Strozzi, F. (2019). Tourism and its economic impact: A literature review using bibliometric tools. *Tourism Economic*, 25(1), 109–131.
- Crawford, M., & Stein, W. (2002). ‘Auditing Risk Management: Fine in Theory but who can do it in Practice?’ *International Journal of Auditing*, 6, 119–131.
- Cunha, P. ., Toigo, L., & Picoli, M. . (2016). Scientific production on the Audit Committee: A Bioblimtric and Sociometric Analysis of International Journals. *DIGITAL LIBRARY OF JOURNALS*, 8(1), 26–46. <https://doi.org/http://dx.doi.org/10.5380/rcc.v8i1.35902>
- Dabić, M., Maley, J., Dana, L.-P., Novak, I., Pellegrini, M. M., & Caputo, A. (2019). Pathways of SME internationalization: A bibliometric and systematic review. *Small Business Economics*, 55, 705–725.
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. . (2021). “How to conduct a bibliometric analysis: an overview and guidelines. *Journal of Business Research*, 133, 285–296.
- Ellegaard, O., & Wallin, J. . (2015). The bibliometric analysis of scholarly production: How great is the impact? *Scientometrics*, 105, 1809–1831. <https://doi.org/10.1007/s11192-015-1645-z>
- Ellwood, S., & Garcia-Lacalle, J. (2015). Examining Audit Committees in the Corporate Governance of Public Bodies. *Public Management Review*, 18(8), 1138–1162.
- Falagas, M. ., Pitsouni, E. ., Malietzis, G. ., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *The FASEB Journal*, 22(2), 338–342.
- Gaoa, L., & Kling, G. (2012). The impact of corporate governance and external audit on compliance to mandatory disclosure requirements in China. *Journal of International Accounting, Auditing and Taxation*, 21(1), 17–31.
- Gebrayel, E., Jarrar, H., Salloum, C., & Lefebvre, Q. (2018). Effective association between audit committees and the internal audit function and its impact financial reporting quality: Empirical evidence from Omani listed firms. *International Journal of Auditing*, 22(2), 197–213.
- Gramling, A., & Hermanson, D. (2009). Assisting the Audit Committee during financial crisis. *Corporate Governance and Internal Auditing*, 24(3), 41–44.
- Gupta, P., & Sharma, A. M. (2014). A study of the impact of corporate governance practices on firm performance in Indian and South Korean companies. *Procedia - Social and Behavioral Sciences*, 133, 4–11.
- Hirsch, J. . (2005). An Index to quantify an Individual’s scientific research output. *Proceedings of the National Academy of Sciences of the United States of America*, 102(46), 16569–16572.
- Hopt, K. J. (2002). Modern company and capital market problems: Improving European corporate governance after Enron. *Journal of Corporate Law Studies*, 3(2), 221–268.
- IFAC. (2014). *International Framework: Good Governance in the Public Sector*.

- Janssen, M. A. (2007). An update on the scholarly networks on resilience, vulnerability, and adaptation within the human dimensions of global environmental change. *Ecology and Society*, 12(2), 1–18.
- Knechel, W. ., Niemi, L., & Sundgren, S. (2008). “Determinants of auditor choice: evidence from a small client market.” *International Journal of Auditing*, 12(1), 65–88.
- Kooli, C. (2019). Governing and managing higher education institutions: The quality audit contributions. *Evaluation and Program Planning*, 77(101713), 1–9.
- Kooli, C., & Abadli, R. (2021). Could Education Quality Audit Enhance Human Resources Management Processes of the Higher Education Institutions? *Vision*, 1–9. <https://doi.org/10.1177/09722629211005599>
- Kooli, C., Jamrah, A., & Al-Abri, N. (2019). Learning from Quality Audit in Higher Education Institutions: A Tool for Community Engagement Enhancement. *FIIB Business Review*, 8(3), 218–228.
- Macias-Chapula, C. A. (1998). O papel da informetria e da cienciometria e sua perspectiva nacional e internacional. *Revista Ciência Da Informação*, 27(2), 134–140.
- Madani, F., & Weber, C. (2016). The evolution of patent mining: Applying bibliometrics analysis and keyword network analysi. *World Patent Information*, 46, 32–48.
- Merigo, J. M., Gil-Lafuente, A. M., & Yager, R. R. (2015). An Overview of Fuzzy Research with Bibliometric Indicators. *Applied Soft Computing*, 27, 420–433.
- Nerur, S. P., Rasheed, A. A., & Natarajan, V. (2007). The intellectual structure of the strategic management field: An author co-citation analysis. *Strategic Management Journa*, 29(3), 319–336.
- O’Leary, C., Boolaky, P., & Delameu, D. (2013). Accounting regulation changes: Differing attitudes of directors and auditors. *International Journal of Accounting Auditing and Performance Evaluation*, 9(4), 365–387.
- Samaha, K., Khlif, H., & Hussainey, K. (2015). The impact of board and audit committee characteristics on voluntary disclosure: A meta-analysis. *Journal of International Accounting, Auditing and Taxation*, 24, 13–28.
- Sarens, G., & Abdolmohammadi, M. . (2011). Monitoring effects of the internal audit function: Agency theory versus other explanatory variables. *Internatioanl Journal of Auditing*, 15(1), 1–20.
- Sarens, G., & De Beelde, I. (2006). The relationship between internal audit and senior management’. *International Journal of Auditing*, 10(3), 219–241.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Prentice Hall.
- Seuring, S., Müller, M., Westhaus, M., & Morana, R. (2005). Conducting a literature review- The example of sustainability in supply chains. *Research Methodologies in Supply Chain Management: In Collaboration with Magnus Westhaus*, 91–106. https://doi.org/10.1007/3-7908-1636-1_7
- Sinnakkannu, J., & Nassir, A. M. (2008). Revisiting the causes of the east Asian Financial Crisis: Was it predictable? *International Journal of Economic Perspectives*, 2(2), 78–93.
- Soltani, B. (2014). “The anatomy of corporate fraud: a comparative analysis of high profile American and European corporate scandals.” *Journal of Business Ethics*, 120(2), 251–274.
- Souza, F. C., Rover, S., Gallon, A. V., & Ensslin, S. R. (2008). Análise das IES da Área de

Ciências Contábeis e de seus Pesquisadores por meio de sua Produção Científica. *Revista Contabilidade Vista & Revista*, 19(3), 15–38.

Tunger, D., & Eulerich, M. (2018). Bibliometric analysis of corporate governance research in German-speaking countries: applying bibliometrics to business research using a custom-made database. *Scientometrics*, 117(3), 2041–2059.

Vadasi, C., Bekiaris, M., & Andrikopoulo, A. (2020). Corporate governance and internal audit: an institutional theory perspective. *Corporate Governance*, 20(1), 175–190.

Van Eck, N. ., & Waltman, L. (2014). N. In Ding, R. Rousseau, & D. Wolfram (Eds.), *Measuring scholarly impact. Methods and practice* (pp. 285–320). Springer International Publishing,.

Vieira, E. ., & Gomes, J. A. (2009). A comparison of Scopus and Web of Science for a typical university. *Scientometrics*, 87(587), 1–25.

Wallin, J. . (2005). Bibliometric Methods: Pitfalls and Possibilities. *Basic and Clinical Pharmacology & Toxicology*, 97(5), 261–275.