



# Bibliometric Analysis of Performance Audit Research in the Public Sector: Key Insights

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**Abstract.** This research examines trends in public sector performance audit research from time to time. This research uses a bibliometric method that examines the number of publications each year, influential sources, influential authors, trending topics, co-occurrences, thematic evolution, and co-authors using VOSviewer and Bibliometric R software. The findings show that research in the last decade (2013-2023) has experienced enhancement. Keywords related to the public sector, audit performance, accountability, audit, effectiveness, supreme audit institution, audit performance, efficiency, and internal audit have experienced significant development. There are changes in research themes from period to period, which reflect changes in researchers' interests. However, the themes of "performance audit" and "public sector" remained consistent over the period. This research contributes as a guide for researchers studying the topic of performance audits in the public sector in the future so that it becomes a policy for governments and companies in allocating research budgets on this topic. In addition, this research contributes to government policy in the field of performance audits in the public sector. Future research can be carried out on a literature review of this topic with an exploratory aspect, namely the network of countries and institutions that contribute most to performance auditing in the public sector. Apart from that, future research can be carried out using other literature review methods, namely meta-analysis. Topics that have opportunities and need to be studied further are corporate social responsibility, public audits, external audits, state audits, and the effectiveness of internal audits.

**Keywords:** audit, performance, bibliometric, financial, public sector

## 1 Introduction

One of the essential pillars of an excellent organizational governance framework is the audit committee, which is expected to improve the quality of financial reporting, auditor performance, independence, and objectivity, as well as the risk management function and financial decision-making [1, 2, 3]. To improve the quality of personnel, government organizations implement performance audits [4, 5]. The rationality of this research arises from the need for an in-depth understanding of performance auditing in the public sector. The financial and auditing literature has long recognized the potential

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for competition and auditor-auditee conflict [6, 7, 8]. Currently, studies of public sector performance audit practices still have significant uncertainties. It is important to review performance audits in the public sector because performance audits play a central role in ensuring accountability, transparency, and the effective use of public resources.

Previous researchers have conducted literature reviews on public sector performance audits [9, 10, 11, 12, 13, 14]. This research reveals independent research: continuous auditing, fraud detection, data analysis, and technological innovation [13]. The growth of public sector performance audit scientific articles over the last ten years has averaged 3% or 3 to 4 articles per year. The words effectiveness, efficiency, and economy are very few [12]. Research Garengo et al., [9] publications and four themes related to human resource management in performance measurement and management. Based on the bibliometric analysis of variables, audit quality is the most studied aspect of the keyword auditor performance. The novelty idea variable is big data [10]. Australia is the most significant contributing country to performance audits; in terms of citations, it is English [14]. Based on several previous studies, bibliometric research on public sector performance audits has not explained the development of research trends over the last decade (2013-2023). In addition, recommendations for research topics are given only based on the occurrence level without paying attention to research segments with great opportunities for future research. This research fills this gap by adding a research topic segment that has a high chance of becoming a trend in the future. This research aims to examine trends in public sector performance audit research topics over the last decade (2013-2023) using a bibliometric approach. The contribution of this research is a guide for researching the topic of future performance audits in the public sector as government and company policies allocate research budgets. Furthermore, this research contributes to government policy in the field of performance audits in the public sector.

## **2 Literature Review**

### **2.1 Performance Audits**

Performance audit focuses on evaluating the effectiveness, efficiency, and impact of specific programs, policies, or activities carried out by public or private entities to assess the extent to which the entity achieves its stated objectives. This audit analyzes programs or policies that benefit the community or stakeholders [15]. A management performance audit is an analytical tool that efficiently measures an organization's economic resources [16]. Misuse of funds causes significant losses to welfare and public trust and increases corruption cases [17].

Government audits have a mandate to monitor compliance with program regulations [18]. Government audit supervision is essential to the national government system regarding government behavior [19, 20, 21, 22, 23]. In addition, the overlap between members of the risk management committee and audit committee has an impact on reducing the level of risk taken [24, 25].

## **2.2 Public Sector Organizations**

Public sector organizations play an essential role in carrying out government functions. The existence of a public sector audit organization can prevent and overcome acts of corruption [26, 27]. Organizational innovation encourages increased organizational performance [28]. The organization must develop a unique individual identity by differentiating itself from its competitors; on the other hand, reducing population ambiguity requires developing common ground to spur new forms [29, 30]. Hybrid forms of organizing can coexist with multiple value-creation mechanisms, underscoring the unique dynamics of hybridization as it relates to the corporatization of public services [31, 32, 33].

Accountability is integral to organizational actors understanding stakeholder responsibilities [34]. The organization's primary goal is to ensure that essential services, such as education, health, infrastructure, and social protection, are available and affordable for all levels of society [35, 36]. Public sector organizations are responsible for maintaining economic balance, encouraging sustainable growth, and maintaining public security and order [34, 37]. Failure to integrate communication, values, and goals between actors hinders the successful implementation of performance-based budgeting reforms [38, 39, 40, 41].

## **3 Methodology**

### **3.1 Bibliometric Analysis**

Bibliometrics quantitatively analyzes scientific publications and literature to measure impact, trends, and patterns in a particular research field. Researchers use this analysis to identify topic trends, intellectual structures, and research features and dig deeper into specific field collaboration patterns in the current literature. The analysis includes the number of publications each year, influential sources, influential authors, trend topics, co-occurrence, thematic evolution, and co-authorship using VOSviewer and Bibliometrix R.

### **3.2 Identification of Keywords**

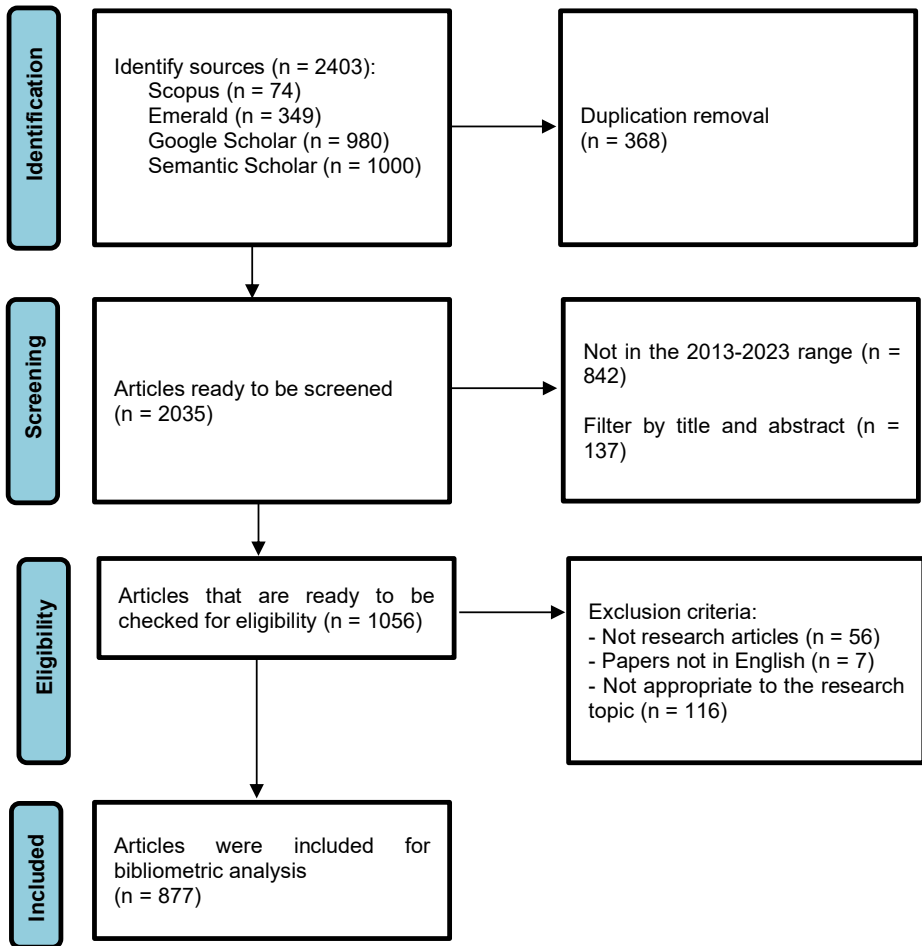
The researcher conducted a search for the keywords "performance audit" AND "public sector" using the Publish or Perish (PoP) software. These keywords are used as search items in the title section and keyword field. These keywords were obtained from the Scopus, Google Scholar, Semantic Scholar, and Emerald databases. Specifically for the Emerald database, the researcher conducted a direct search and imported it into the PoP software to obtain data metrics.

### **3.3 Identification and Screening of Data**

A data search was conducted on August 24, 2023, at 16.33 (GMT+8). At the identification stage, 2403 documents were obtained from 1960-2023. After deleting duplicate documents (n=368), 2035 documents were obtained and ready to be screened. In the process, various inclusion and exclusion criteria were applied. A total of 842 documents were removed because they were published before 2013. A total of 137 documents were removed because the title and abstract did not reflect the topic of audit performance in the public sector.

### **3.4 Eligibility**

Researchers using Mendeley screened papers based on inclusion and exclusion criteria. A total of 1056 documents successfully passed data screening. There are inclusion and exclusion criteria for this stage. A total of 56 documents were discarded because they were not research papers/articles; 7 needed to speak English, and 116 did not fit the topic of performance audit in the public sector. So, 877 papers meet the requirements for bibliometric analysis. The document screening process is presented in Figure 1.



**Fig. 1.** PRISMA Flow Diagram

## 4 Results

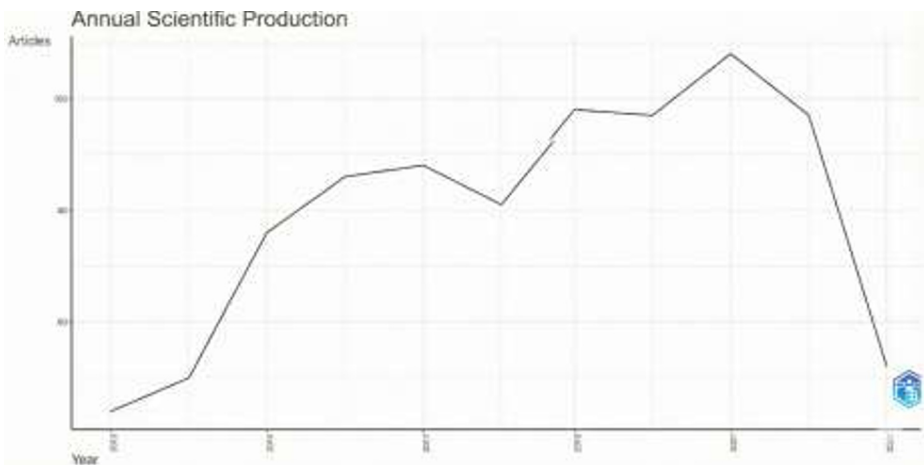
### 4.1 Metrics and Annual Scientific Production

Research on performance audits in the public sector was conducted in the period (2013-2023). Eight hundred seventy-seven papers were obtained based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method. Paper data metrics for the last decade are shown in Table 1.

**Table 1.** Metric data

Citation years	10 (2013-2023)
Papers	877
Citations	5085
Citations/year	508.50 (acc1=241, acc2=137, acc5=48, acc10=24, acc20=10)
Citations/paper	5.80
Citations/author	2950.14
Papers/author	519.71
Authors/paper	2.24/2.0/1 (mean/median/mode)
Age-weighted citation rate	1117.10 (sqrt=33.42), 595.30/author
Hirsch h-index	31 (a=5.29, m=3.10, 2311 cites=45.4% coverage)
Egghe g-index	53 (g/h=1.71, 2891 cites=56.9% coverage)
PoP hI, norm	23
PoP hI, annual	2.30
Fassin hA-index	14

Table 1 outlines the impact and performance of publications from 2013 to 2023. During that period, 877 articles were published, 5085 citations. On average, each article received 5.80 citations, while each author averaged 2950.14 citations. One author contributed about 519.71 articles. The majority of articles have one author. The age-weighted citation rate metric gives an idea of the impact of citations based on the age of the article, with an average of 1117.10 and 595.30 per author. The Hirsch h-index of 31 shows 31 articles having 31 citations. Egghe's G-index of 53 shows a collection of 53 articles receiving 2891 citations. The other metrics are PoP hI, norm with a value of 23, and PoP hI, annual 2.30, which evaluate annual impact. Fassin hA-index has a value of 14.



**Fig. 2.** Annual Scientific Production

Figure 2 shows the development of research frequency in 2013-2023, which has fluctuated. In 2013, the number of studies was 44. In 2014, it was 50; in 2021, with 108 studies. There will be a sharp decline in 2023 to only 52 studies. There was a significant increase in research during this period; there were fluctuations from year to year, with some years increasing and others decreasing.

## 4.2 Influential Sources

Figure 3 lists the ten most influential sources in research related to audit performance in the public sector. The number of articles published by each source reflects the level of research activity and the contribution of researchers in developing knowledge in this field.

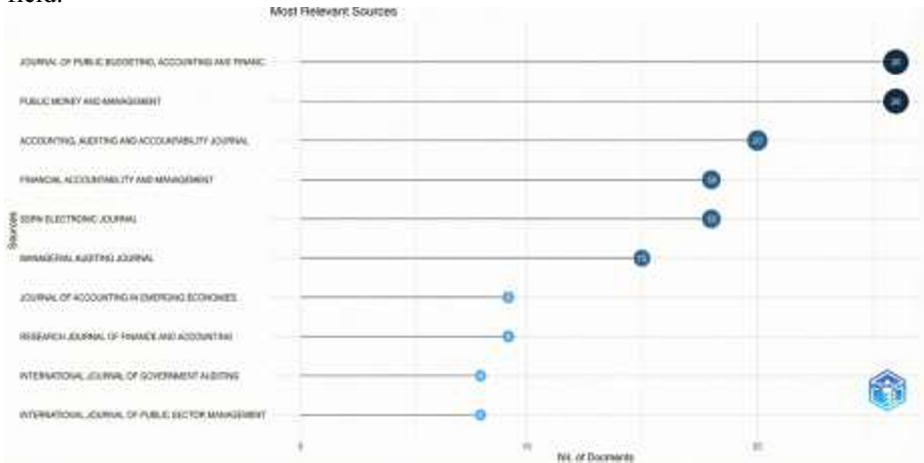


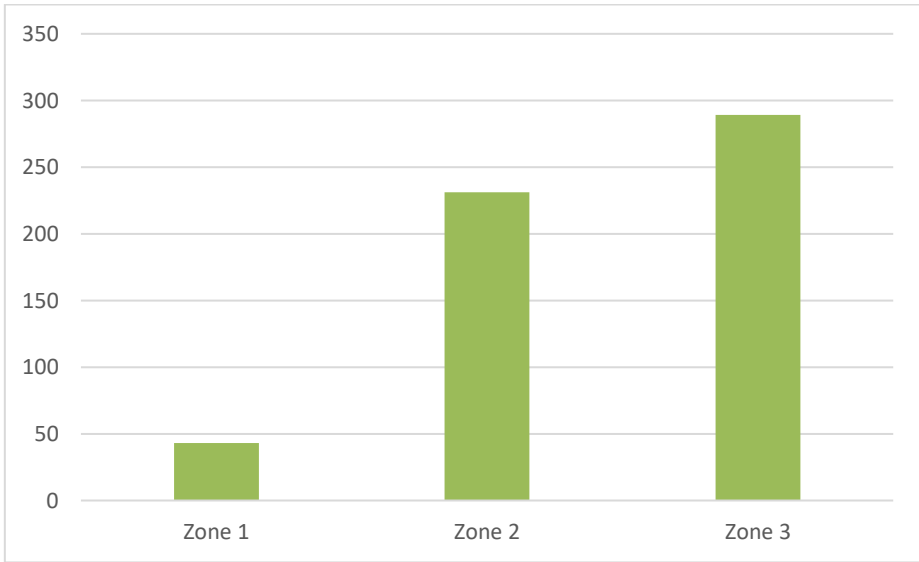
Fig. 3. Most Relevant Sources

Journal of Public Budgeting, Accounting, and Financial Management, and Public Money and Management were the two most productive sources, with 26 articles. These journals have good reputations and highly influence public finance and accounting research. Accounting, Auditing, and Accountability Journal has a significant contribution with 20 articles, showing its essential role in developing academic literature in this field.

Table 2. Top 10 Influential Sources

Sources	Articles
Journal of Public Budgeting, Accounting and Financial Management	26
Public Money and Management	26
Accounting, Auditing and Accountability Journal	20
Financial Accountability and Management	18
SSRN Electronic Journal	18
Managerial Auditing Journal	15
Journal of Accounting in Emerging Economies	9
Research Journal of Finance and Accounting	9
International Journal of Government Auditing	8
International Journal of Public Sector Management	8

Source: Primary data



**Fig. 4.** Distribution of publication zones

Most of the information (43 sources) is in the first zone. This indicates that many primary sources are at the center of attention on this topic. However, the second zone (231 sources) and third zone (289 sources) contain additional relevant sources, even though their number is greater than that of the first zone. The topic of audit performance in the public sector has a variety of literature sources that are important for understanding the subject. Researchers or practitioners who wish to explore this topic do not only focus on the first zone but involve sources from the second and third zones to gain complete insight.

Zone 1 of the topic of performance audit includes the highest frequency of publications, which reflects the central role of related literature. Several prominent publications include the Journal of Public Budgeting, Accounting, and Financial Management, which focuses on public budgets and financial accounting, and Public Money and Management, which examines the management of public funds. Accounting, Auditing, and Accountability Journal is relevant to performance auditing because it discusses accounting and accountability. Furthermore, the Financial Accountability and Management and the SSRN Electronic Journal provide insight into financial accounting and electronic literature related to performance auditing. Thus, Zone 1 is an important starting point for researchers as a basis for the literature on this topic and for starting in-depth research.

the publication productivity of performance audit research in the public sector in 2013-2023 reflects significant growth. In 2013, only one article was published in the

Journal of Public Budgeting, Accounting, and Financial Management, while there were no related articles in other journals. In 2019, there was a surge in publication productivity, with eight articles in the Journal of Public Budgeting, Accounting, and Financial Management and a more significant number in other journals; until 2023, the Journal of Public Budgeting, Accounting, and Financial Management was the most productive journal with 26 articles.

### 4.3 Influential Authors

Researchers play the role of understanding audit performance in the public sector. The most influential researcher, Grossi G., produced nine performance audit articles. This is shown in Figure 5.

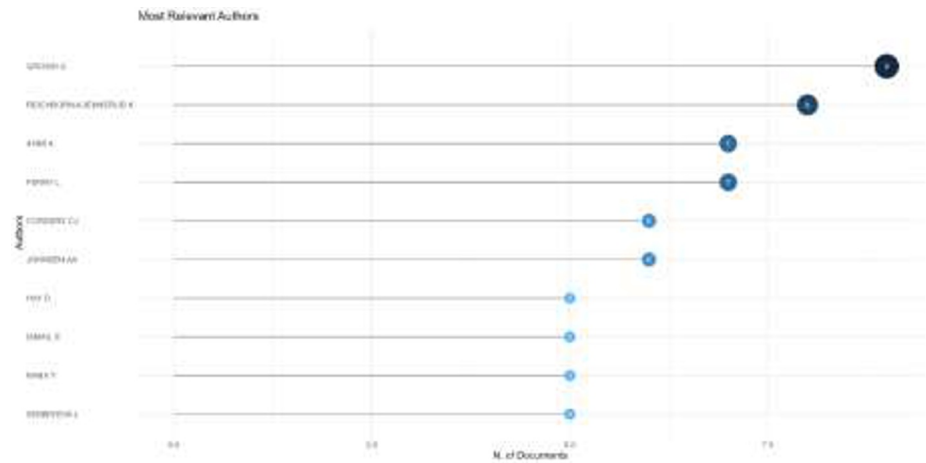


Fig. 5. Top 10 Most Influential Authors

Reichborn-Kjennerud K. 8 articles, Ahmi A. and Ferry L. deserve 7. These three form a solid foundation for developing performance auditing in the public sector. Although other researchers contributed, these four researchers were the most influential.

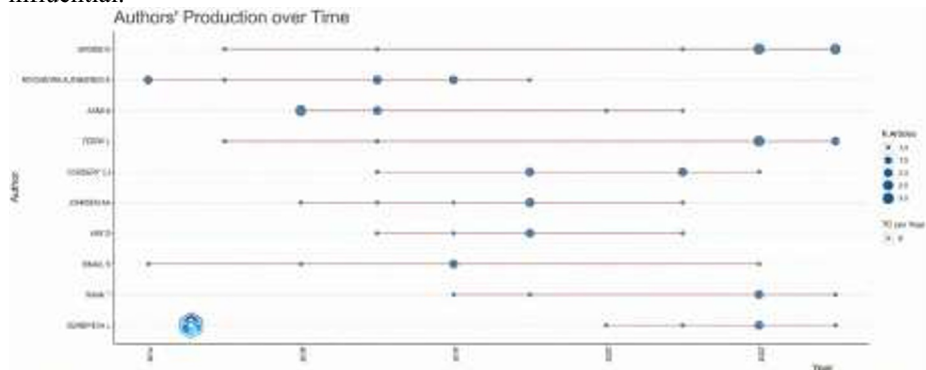


Fig. 6. Top 10 Most Productive Authors

Figure 6, the productivity of researchers examines performance audits, and the public sector is assessed from various aspects, including publications and the impact of research. Researchers Grossi G. and Reichborn-Kjennerud K. became significant contributors to this field. They published many papers, such as: "Changing the Boundaries of Public Sector Auditing" (Grossi, 2023) and "Performance Audit as a Contributor to Change and Improvement in Public Administration" (Reichborn-Kjennerud, 2017).

Researchers, such as Ferry L. and Corder CJ. contributed by publishing works such as "Regulatory Space in Local Government Audit: An International Comparative Study of 20 Countries" (Ferry, 2023) and "Public Sector Audit in Uncertain Times" (Cordery, 2022). This shows the diversification of research they carry out in performance audits, including aspects of regulation and governance of the public sector.

Researchers Ahmi A. and Sembiyeva L. examine performance audits with their research on internal and external public sector performance management audits. Researcher productivity is described using Lotka's law, which describes the distribution of researcher productivity as an inverse square distribution. The study measured the number of author articles and the frequency distribution of author productivity. This is shown in Figure 8.

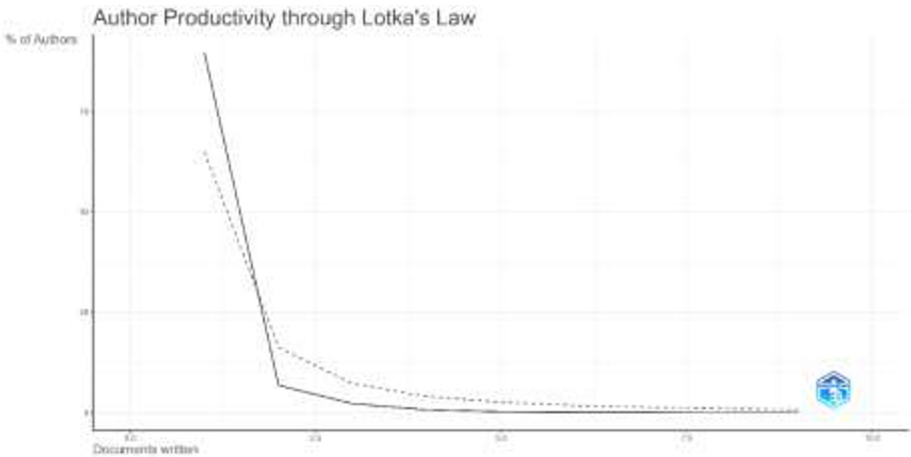
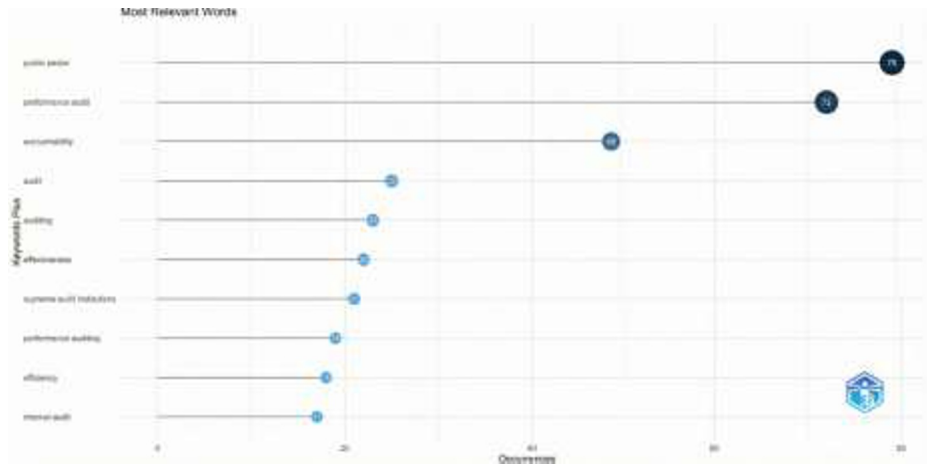


Fig. 7. Author Productivity through Lotka's Law

Most researchers (0.89%) produced one article, while a small proportion (0.07%) produced two. Only a few researchers produced three (0.02%), four (0.007%), or five (0.002%) articles. Even more rarely, researchers produced a measly six (0.001%) or more articles. According to Lotka's law predictions, most researchers have low productivity.

#### 4.4 Trend Topics and Co-occurrence

The frequency of relevant keywords related to performance audits reflects the importance of accountability and transparency of government actions. The dominant keyword is "public sector," with a frequency of 79. Performance audit is very relevant in the public sector, which focuses on the actions of government and entities that serve the public. "Performance audit" frequency of 72 predominates, indicating the importance of performance evaluation. This is shown in Figure 8 and Figure 9.



**Fig. 8.** Top 10 Most Frequent Keywords

Keywords "accountability" frequency 49, "efficiency" frequency 18, and "effectiveness" frequency 22 reflect a focus on the efficient use of resources and the impact of government actions on society. "Supreme audit institutions" frequency 21 reflects the role of the highest audit institution in ensuring accountability and transparency.

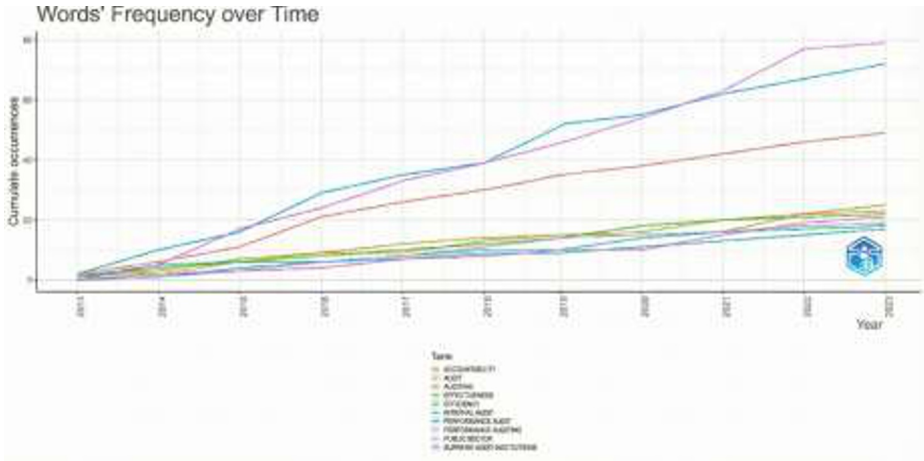


Fig. 9. Words' Frequency over Time

Figure 9 shows the frequency of the keywords public sector, performance audit, accountability, audit, effectiveness, highest audit institution, performance audit, efficiency, and internal audit have experienced significant developments. There is an increase in keywords in a variety of sources and contexts. This reflects the growing concern for transparency, accountability, and effectiveness in the public sector.

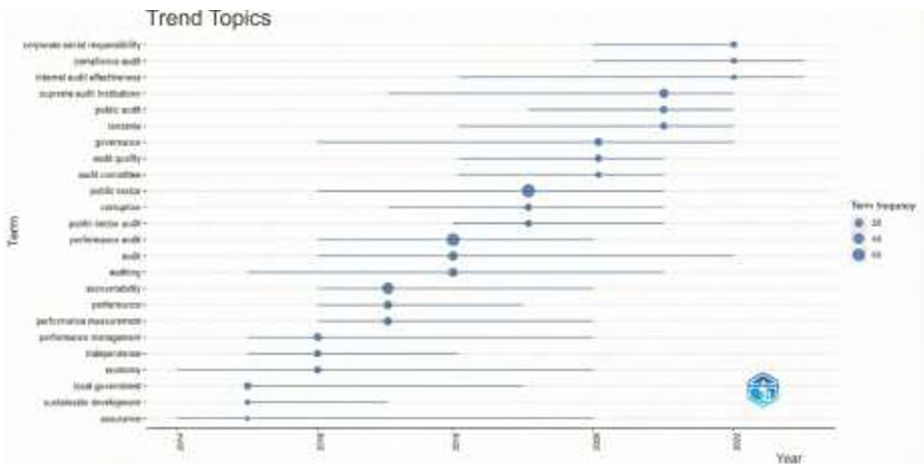
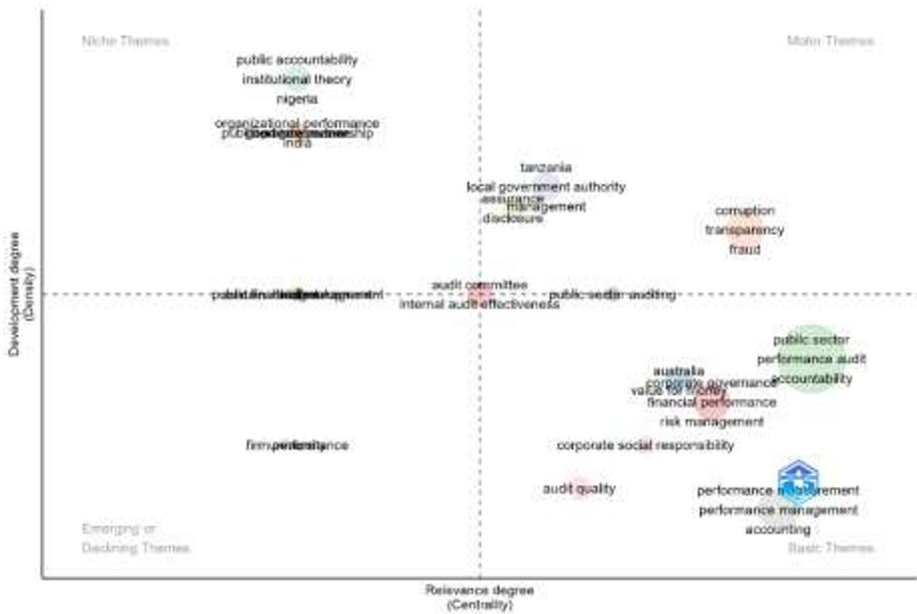


Fig. 10. Trend Topics

The development of trending topics related to performance audits experienced several significant changes. In the early 2010s, "performance audit" became a prominent trend, with increased publications and research. Peak interest in this topic between 2016 and 2020, the frequency of the keyword "performance audit" peaked at 72 occurrences. Performance audits became the main focus of the public sector during this period. The keywords "performance management," "performance measurement,"







**Fig. 13.** Overall Thematic Map

The "public sector" and "public financial management" clusters have Call on Centrality values of 1.39 and 0, indicating different levels of interconnectedness. The "public sector" cluster has a high level of linkage with other topics, while "public financial management" has a low level of linkage. Public sector" has a high Cluster Frequency (612), indicating this topic is dominant. The "public accountability" and "corruption" clusters have a Call-on Density of 28.75 and 20.23, respectively. These topics have many connections with other topics. The "audit" cluster quality" Rank Centrality value (14), indicating that this topic frequently appears in the literature is relatively high. The "assurance" cluster has a Density Rank (15), indicating its connection with other topics. The "corporate governance" and "sustainable development" clusters have a low-density Rank (5.5), indicating these topics have fewer connections with other topics. The clusters "audit committee," "budget," and "public sector auditing" Rank Density is low (5.5), indicating more limited connections with other topics. Figure 14 shows the evolution of research themes over several periods, namely 2013-2016, 2017-2019, 2020-2021, and 2022-2023.

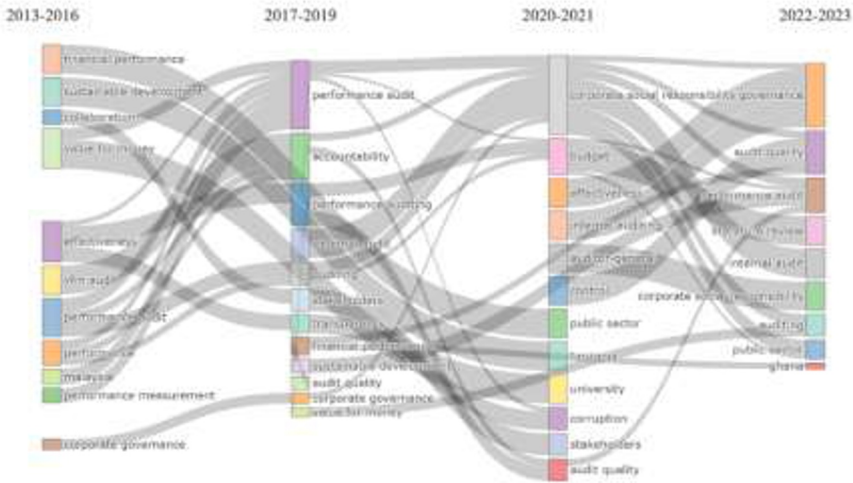
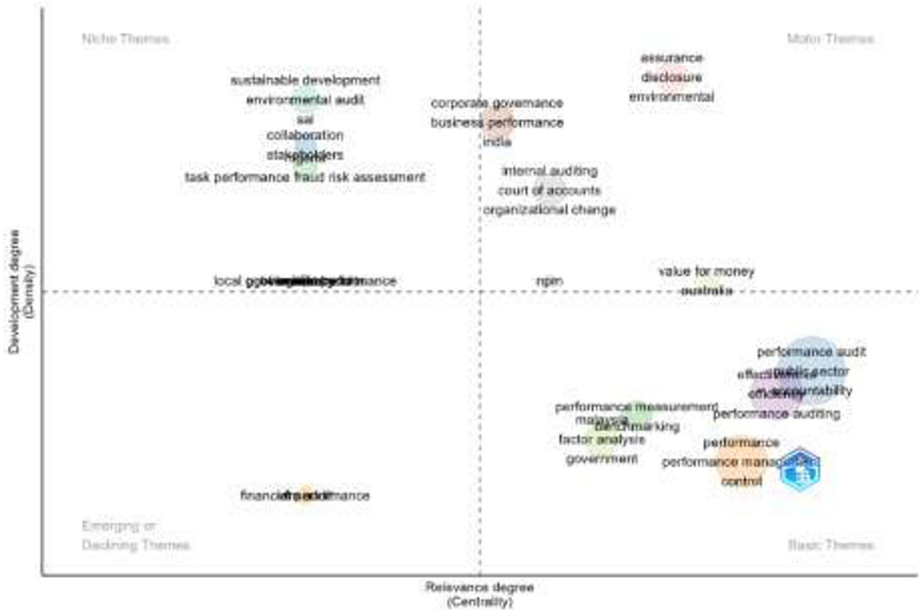


Fig. 14. Overall Thematic Evolution in Four-Time Slices

In the 2013-2016 period, the dominant theme of "financial performance" value 1 shows the main focus is financial performance. The theme "corporate governance" has a value of 0.36, and "sustainable development" weighs 1, indicating considerable interest in corporate governance and sustainable development. For the 2017-2019 period, the theme "performance audit" weighs 0.75, and "stakeholders" weighs 0.5, indicating that performance audits and stakeholders are the main focus of the research. The theme "transparency" weighs 0.64, indicating a more significant concern for transparency and preventing corruption. For 2020-2021, the theme "audit quality" weighs 0.25, and "public sector" weighs 0.53, indicating that audit quality and the public sector are the primary concern. The theme "corporate social responsibility," weight 1, and "internal auditing," weight 1, shows a strong interest in corporate social responsibility and internal audit. For the 2022-2023 period, the "performance audit" theme weights 0.43, and "public sector" weights 0.53, indicating continued interest in performance audits and the public sector. The theme "governance" weighs 0.21, indicating a growing concern for the governance and management of public institutions.

Overall, there are shifts in research themes from period to period, reflecting changes in the interest of researchers in specific fields. However, the themes of "performance audit" and "public sector" have remained consistent over several periods, demonstrating the urgency of these topics in academic research.

**Thematic Evolution in 2013-2016.** Figure 15, the development of the research theme (thematic evolution) for the 2013-2016 period, considers several parameters: Call on Centrality, Call on Density, Rank Centrality, Rank Density, and Cluster Frequency.

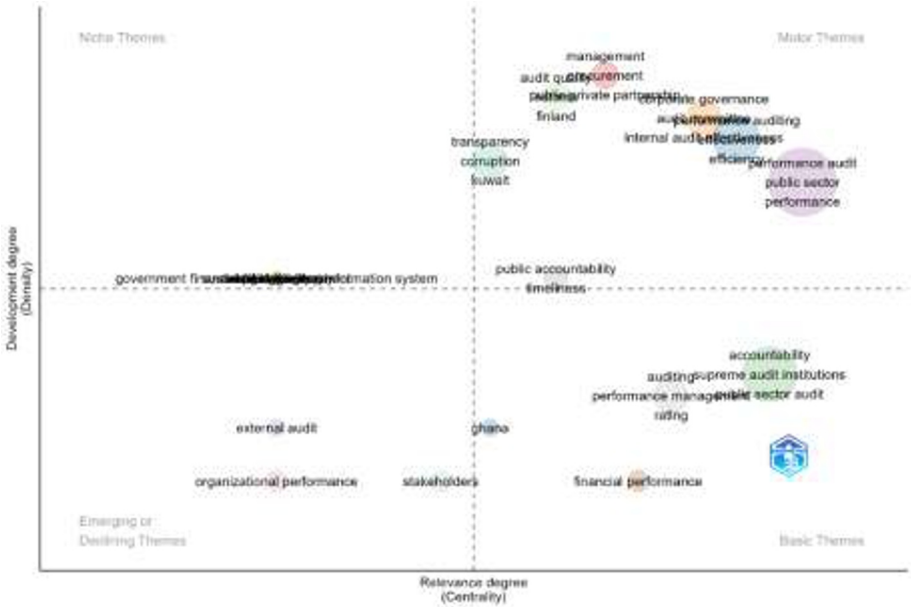


**Fig. 15.** Thematic Evolution in 2013-2016

The dominating theme is "performance audit," with a Call on Centrality of 2.367 and a Call on Density of 45,805. This theme is ranked 20th in Rank Centrality and 7th in Rank Density, which indicates a high level of importance in the research. The theme of "assurance" significantly influences the Call on Centrality 0.583 and the Call on Density 81.25. However, having a high Call on Centrality, this theme ranks 16th in Rank Centrality, perhaps due to specific influences.

The themes "value for money," "performance measurement," and "corporate governance" show a reasonably good level of importance. In contrast, the themes "sustainable development" and "financial performance" are lower. Changes in cluster frequency reflect the development of research themes, with several themes experiencing an increase, such as "performance audit" and "assurance." This suggests that these themes were the main research focus in that period.

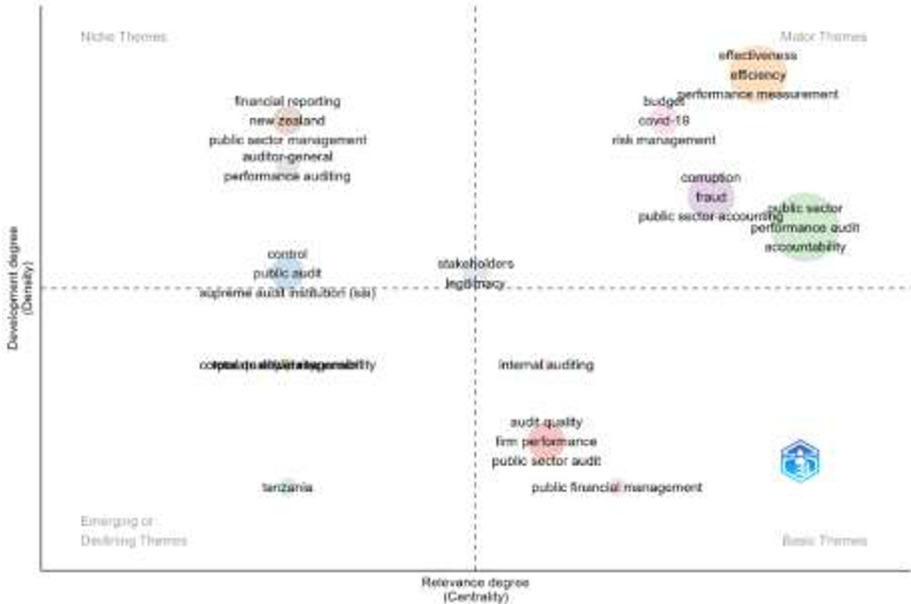
**Thematic Evolution in 2017-2019.** Figure 16 shows the development of research themes (thematic evolution) for 2017 -2019.



**Fig. 16.** Thematic Evolution in 2017-2019

Bibliometric data for the 2017-2019 period, several themes have evolved. One of the themes is "performance audit" with Call on Centrality 3.130 and Call on Density 51.902. This theme is ranked first in Rank Centrality at number 21 and Rank Density at number 16. Performance audit studies experienced a significant increase in that period. The number of cluster frequencies is 121. This theme is widely discussed in the academic literature. In addition, the theme of "accountability" was the main focus of the period, with a Call on Centrality at 0.846 and a Call on Density at 48.503. Although not as dominant as "performance audit," this theme has a Rank Centrality of 20 and a Rank Density of 7. C luster frequency 46, the theme of "accountability," is the primary concern of academic research. These two themes, along with other themes such as "corporate governance," "transparency," and "performance auditing," reflect significant attention to management and accountability issues in academic literature for the 2017-2019 period.

**Thematic Evolution in 2020-2021.** Figure 17 shows the development of research themes (thematic evolution) in the period 2020 - 2021.

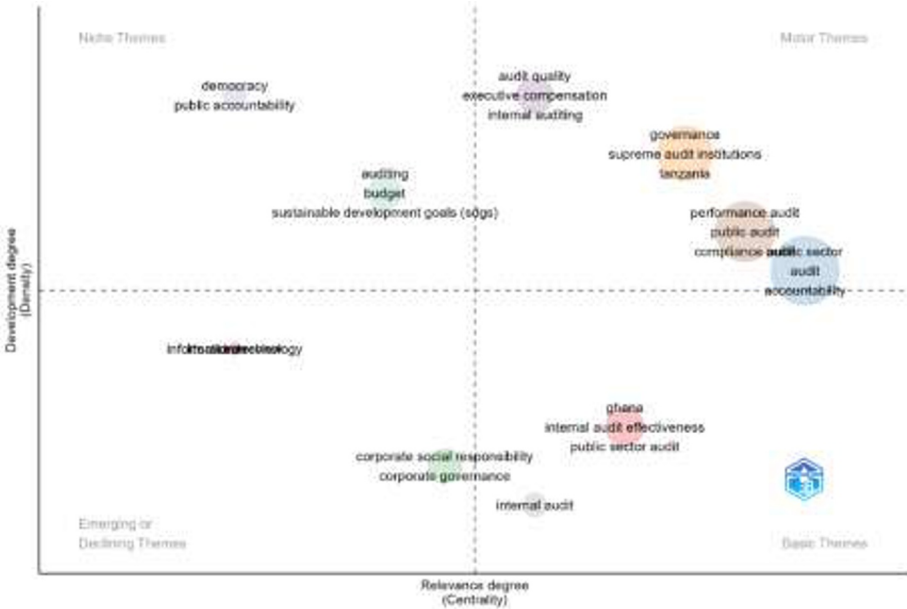


**Fig. 17.** Thematic Evolution in 2020-2021

A bibliometric analysis of interesting research themes' 2020-2021 evolution pattern. The "public sector" cluster stands out with Call on Centrality 2.30, showing the importance of public sector issues in that period. The "corruption" cluster has a significant Call-on Centrality of 1.03, indicating corruption is the leading research focus in this context. The theme of "effectiveness" is essential with a Cal-on Centrality value 1.17. In general, themes related to public financial governance, corruption, and public sector effectiveness dominated research in that period.

In addition, the "public sector" cluster has a high Cluster Frequency of 83, which indicates this theme appears most often. Meanwhile, the "corruption" Cluster has a reasonably high-Rank Density and Rank Centrality, namely 11 and 13, indicating that although the number of research on corruption is not as large as the "public sector," corruption research has a significant impact on research networks. In conclusion, in the period 2020-2021, themes related to public financial governance, corruption, and effectiveness in the public sector have become the center of attention in the academic literature, with the theme "public sector" being the most dominant and "corruption" having a substantial impact on research network.

**Thematic Evolution in 2022-2023.** Figure 18 shows the development of research themes (thematic evolution) in 2022 -2023.



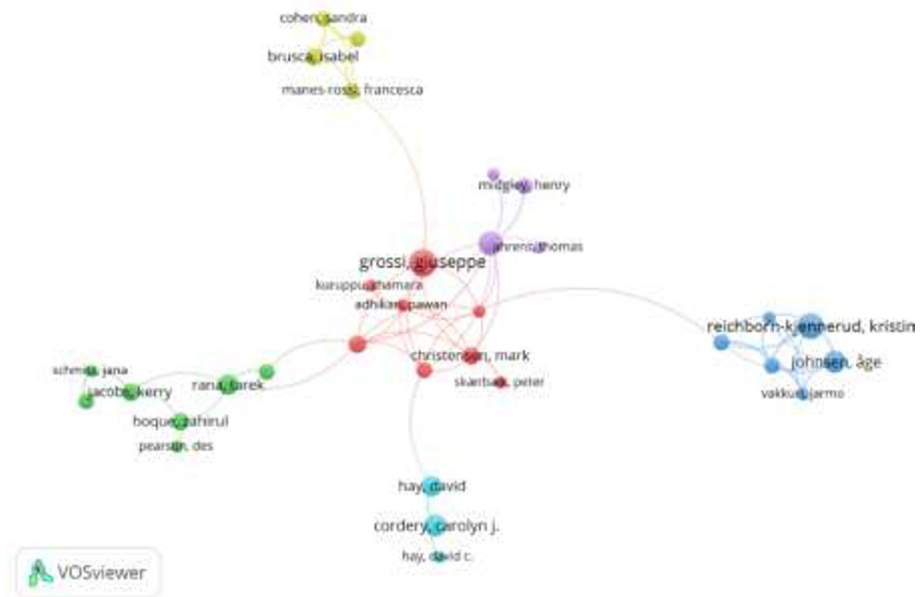
**Fig. 18.** Thematic Evolution in 2022-2023

Data for the 2022-2023 period, several themes are the main focus of the research. The central theme, "public sector audit," frequency is 51. This theme has a high centrality value, 1.69, indicating that this theme plays a significant role in the research topic network. The theme "performance audit" is of great concern, with a frequency of 31. This theme has a high centrality value, namely 0.94, indicating the vital role of performance audits in the research context in that period.

Apart from these two main themes, some are pretty significant in this period, such as "governance" with a centrality value of 0.46 and "corporate social responsibility" with a centrality of 0.24. The theme "audit quality" is quite focused, with a frequency of 8. These themes reflect research interest and attention in governance, corporate social responsibility, and audit quality in 2022-2023. Although several other themes emerge in the data, these main themes dominate the research thematic evolution of the period.

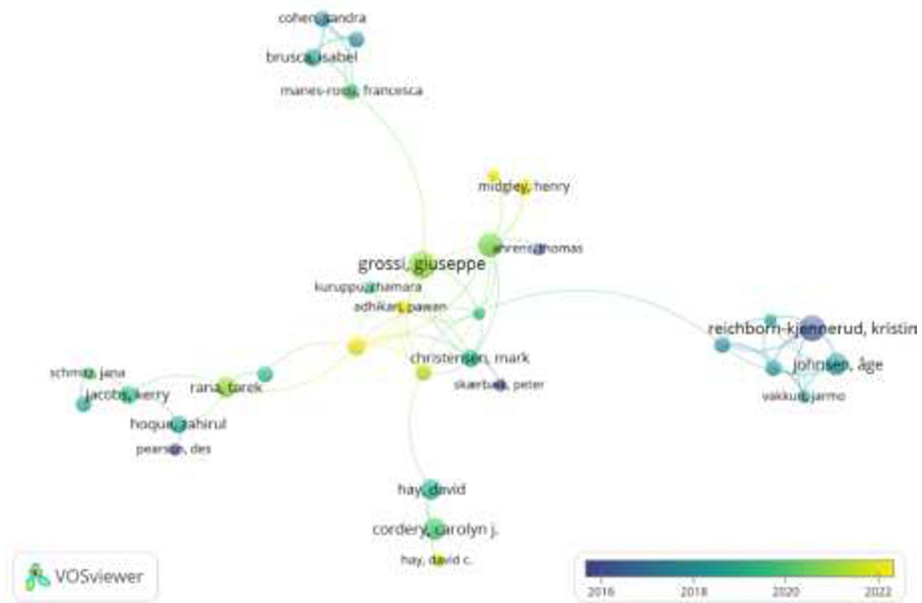
**4.6 Co-authorship**

A visualization of the co-authorship network related to the research topic "performance audit in the public sector" has been created using VOSviewer software. Several research clusters are identified based on the linkages of researcher collaboration shown in Figure 19.



**Fig. 19.** Co-authorship network visualization

Cluster 1 consists of researchers such as Adhikari, Christensen, Grossi, Cordery, Raudla, Skærbaek, Steccolini, and Kuruppu, a total of 7 collaboration links with a total link weight of 7. This cluster has 2 relevant research documents. Cluster 2, researchers Hoque, Jacobs, Mihret, Parker, Pearson, Rana, and Taro have 3 collaboration links with a link weight of 3. This cluster has 4 relevant research documents. This cluster research may focus more on specific aspects of performance auditing in the public sector. Cluster 3 involves researchers Carrington, Jeppesen, Johnsen, Reichborn-Kjennerud, Taro, and Vakkuri and has 5 collaborative links with a link weight of 11. This cluster has 3 relevant research documents. Cluster 4 researchers Brusca, Caperchione, Cohen, and Manes-Rossi have 3 collaborative links with a link weight 8. This cluster has 4 relevant research documents. Cluster 5 involves researchers Ahrens, Ferry, and Midgley and has one collaboration link with a link weight 1. This cluster has 2 relevant research documents. Perhaps this cluster represents more specialized research or a limited contribution to this topic.



**Fig. 20.** Co-authorship overlay visualization

Researchers who study the topic of performance auditing in the public sector, namely Carrington, Reichborn-Kjennerud, and Rana, have high links with more than one cluster, indicating they have an essential role in connecting various aspects of performance audit research. By understanding the structure of this co-authorship network, researchers can identify potential collaborations and understand the development of public sector performance audit research.

## 5 Discussion

Research findings show that research for the period (2013-2023) has increased. The Journal of Public Budgeting, Accounting, and Financial Management and Public Money and Management are the two most prolific sources, each publishing 26 articles. This is in line with research that shows the growth of scientific articles by public sector performance audit researchers for ten years (2010-2020), an average of 3% or 3 to 4 articles per year [12]. There are fluctuations in the frequency of publishing articles related to performance audits [14].

The most influential researcher, Grossi G., produced 9 performance audit articles. Reichborn-Kjennerud K. played a significant role in developing the understanding of performance audits and published eight articles. Ahmi A. and Ferry L. are worth mentioning because they have published seven articles related to performance audits. Researchers Grossi G. and Reichborn-Kjennerud K. became significant contributors to this field. Researchers who study the topic of performance auditing in the public sector,

namely Carrington, Reichborn-Kjennerud, and Rana, have high links with more than one cluster, indicating they have an essential role in connecting various aspects of performance audit research in the public sector. Other research states that the article with the highest total link power is Reichborn-Kjennerud. Then, articles with high total link strength are Parker, Rana, Nath, and Kells [14]. However, other studies dominating during the 2010-2020 period are Akaalumi, Cheku, Okiro, Chege, and Bulilo [12].

Keywords related to the public sector, performance audit, accountability, audit, effectiveness, highest audit institution, performance audit, efficiency, and internal audit experienced significant developments. There are shifts in research themes from period to period, reflecting changes in researchers' interests in specific fields. However, the themes of "performance audit" and "public sector" remained consistent over several periods. This underscores the shift from static to dynamic performance measurement and management systems in organizations that are expected to be more in line with current and future contexts [9]. Based on the results of the bibliometric analysis, it can be concluded that the variable or aspect that has been widely studied in terms of auditor performance is audit quality [10]. The topics of supreme auditing institutions, financial audits, budgets, financial control, and accounting fraud are constantly discussed in performance audits [14].

## 6 Conclusion

Research on performance audits in the public sector for the period (2013-2023) is continuously increasing. Researchers Grossi G. and Reichborn-Kjennerud K. are critical contributors to this field. Researchers who study the topic of performance audit in the public sector, namely Carrington, Reichborn-Kjennerud, and Rana, have high links with more than one cluster, indicating that they have an essential role in connecting various aspects of performance audit research in the public sector. Keywords related to the public sector, performance audit, accountability, audit, effectiveness, highest audit institution, performance audit, efficiency, and internal audit experienced significant developments. There is a shift in the research theme as a change in the researcher's interest.

This research contributes as a guide for researchers studying the topic of performance audit in the public sector in the future so that it becomes a policy for governments and companies in allocating research budgets on this topic. Furthermore, this research contributes to government policy in the field of audit performance in the public sector.

The limitations of this research are opportunities for further research. This research has yet to reveal the country and institutional variables that contribute most to research on audit performance in the public sector. Therefore, future research could explore aspects of state and institutional networks. In addition, future research can use meta-analysis methods. Topics that have opportunities and need to be studied further are corporate social responsibility, public audit, external audit, state audit, and internal audit effectiveness.

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