GOLDEN RATIO OF AUDITING RESEARCH
VOLUME 7, ISSUE. 1 (2027)
Website: https://goldenratio.id/index.php/grar

GOLDEN RATIO
ISSN [Online]: 2776-6780

AUDITING | RESEARCH ARTICLE

Research Trends in Governance, Risk and Compliance (GRC): A Scopus-Based Bibliometric Analysis Using Biblioshiny (2020–2026)

Kalmet Nehru[1], Fitriana Dachlan[2], Rachmat Agus Santoso[3]

[1] Master of Accounting, Universitas Sangga Buana, Bandung, Indonesia. Email: kalmet.bprlpm@gmail.com
[2] Master of Accounting, Universitas Sangga Buana, Bandung. Email: fitrianadachlan64@gmail.com
[3] Department of Accounting, Faculty of Economics, Sekolah Tinggi Ilmu Ekonomi STAN IM, Bandung, Indonesia. Email: rachmatagussantoso@gmail.com

ARTICLE HISTORY

Received: June 8, 2026
Revised: July 14, 2026
Accepted: July 20, 2026

DOI
https://doi.org/10.52970/grar.v7i1.2368

ABSTRACT
This study examines the development of Governance, Risk and Compliance (GRC) research in the fields of finance and accounting during the 2020–2026 period using a bibliometric approach. The study analyzed metadata from 464 Scopus-indexed journal articles retrieved through a systematic search and screening process. Bibliometric analysis was conducted using Biblioshiny integrated with the Bibliometrix package in R to examine publication trends, influential publications, conceptual structures, thematic development, and emerging research topics. The findings reveal a substantial increase in GRC-related publications, particularly during 2025–2026, indicating growing academic interest in integrated governance, risk management, and compliance. The most influential studies were associated with corporate governance, enterprise risk management, sustainability, and digital governance, while conceptual mapping demonstrated strong interrelationships among governance, compliance, sustainability, and information systems. Trend analysis further identified artificial intelligence, ESG performance, and sustainability reporting as emerging research themes that are expected to shape future GRC research. This study contributes to the bibliometric literature by providing a comprehensive scientific mapping of GRC research and offers practical insights for researchers, practitioners, regulators, and policymakers in identifying future research directions and strengthening governance, risk management, and compliance strategies.

Keywords: Governance, Risk Management, Compliance, Bibliometric Analysis, Biblioshiny.
JEL Code: E44, F31, F37, G15

I. Introduction

Governance, Risk and Compliance (GRC) has increasingly become a critical component in modern organizational management due to its close association with business sustainability, the effectiveness of internal control systems, and organizational compliance with regulatory requirements. The growing complexity of business activities, rapid digital transformation, increasing cyber risks, and heightened stakeholder demands for transparency have encouraged organizations to integrate governance, risk management, and compliance into more coordinated and structured management systems. Papazafeiropoulou & Spanaki, (2016) explain that GRC has evolved into an integrated system capable of supporting organizational decision-making processes in a more effective and measurable manner. Similarly, Seidenfuss et al., (2023) emphasize that the integration of governance, risk, and compliance is essential for

ISSN [Online]: 2776-6780

strengthening risk oversight quality while enhancing organizational accountability. In addition, the quality of data and information within GRC management has become a major concern, particularly for organizations that rely heavily on digital information systems in their operational activities (Sillaber et al., 2019). These conditions indicate that GRC-related studies have become increasingly relevant within the fields of finance and accounting, both from academic and practical perspectives.

The growing urgency of GRC implementation has been accompanied by a substantial increase in scientific publications addressing organizational governance, compliance, auditing, risk management, and internal control systems. However, these studies remain fragmented across various themes and methodological approaches, creating a need for systematic scientific mapping to identify knowledge structures, research trends, and future research directions. Bibliometric analysis has become a widely adopted science mapping approach for examining the evolution of scientific literature through publication metadata, citation patterns, collaboration networks, and keyword relationships (Donthu et al., 2021). Furthermore, Biblioshiny, integrated with the Bibliometrix package in R, enables comprehensive visualization and analysis of intellectual structures and thematic evolution, making it an effective tool for bibliometric research (Aria & Cuccurullo, 2017). Recent studies also emphasize that bibliometric analysis provides valuable insights into emerging research themes and the development of scientific knowledge across academic disciplines (Passas, 2024).

In recent years, bibliometric studies have demonstrated substantial growth across various fields of accounting and finance. In the auditing domain, bibliometric analysis has been applied to examine research trends in auditing and good corporate governance (Santoso, 2022), fraud risk assessment (Santoso et al., 2023), external auditing (Madu et al., 2023), audit switching (Anisa et al., 2025), forensic auditing (Kurniawan et al., 2025; Nazara et al., 2024), audit quality (Nurachman et al., 2025), audit report lag (Jazadi et al., 2024), internal auditing (Firdausi et al., 2025), fraud prevention (Bahrul et al., 2024), and financial statement fraud detection (Suandani et al., 2024). Beyond auditing, bibliometric approaches have also been employed to investigate taxation research (Halawa et al., 2024; Hulu et al., 2024), digital taxation (Rahmat et al., 2025), Islamic banking and financial technology adoption (Yazid et al., 2023), as well as the relationship between the Human Development Index and technology (Rukhviyanti et al., 2023). Collectively, these studies demonstrate the increasing adoption of bibliometric analysis for mapping publication trends, identifying conceptual structures, and examining the evolution of scientific knowledge across accounting and finance disciplines. Nevertheless, most existing studies remain focused on specific research topics, while comprehensive bibliometric investigations examining Governance, Risk and Compliance (GRC) as an integrated research domain remain limited. This fragmentation provides the primary motivation for conducting the present study. This fragmentation highlights the need for a comprehensive bibliometric investigation capable of mapping the intellectual structure, thematic evolution, and emerging research directions of Governance, Risk and Compliance (GRC) as an integrated field of research

Despite these developments, bibliometric research specifically addressing Governance, Risk and Compliance (GRC) remains limited, particularly within the finance and accounting disciplines. Existing studies have generally focused on individual dimensions of governance, risk management, compliance systems, or information technology rather than examining GRC as an integrated research domain. Moreover, previous bibliometric studies have primarily emphasized publication productivity or citation analysis without comprehensively integrating multiple bibliometric techniques, such as annual scientific production, most globally cited documents, co-occurrence networks, thematic mapping, and trend topics analysis, to explain the intellectual structure and thematic evolution of GRC research. These limitations indicate several research gaps. Conceptually, there is limited understanding of how Governance, Risk and Compliance has evolved as an integrated research field. Methodologically, comprehensive bibliometric studies employing multiple complementary analytical techniques remain scarce. Contextually, studies focusing specifically on GRC research within finance and accounting using Scopus-indexed publications from the 2020–2026 period are still limited. Consequently, academics and practitioners lack a comprehensive scientific map that illustrates publication trends, conceptual relationships, emerging themes, and future research directions in Governance, Risk and Compliance.

This study addresses these gaps by providing a comprehensive bibliometric mapping of Governance, Risk and Compliance research based on Scopus publications using Biblioshiny. Unlike previous studies that

ISSN [Online]: 2776-6780

focused on specific governance-related topics, this study integrates annual scientific production analysis, most globally cited documents, co-occurrence network analysis, thematic mapping, and trend topics analysis to present a more comprehensive overview of the intellectual structure and development of GRC research. The findings are expected to contribute theoretically to the bibliometric literature while providing practical insights for researchers, practitioners, regulators, and policymakers in understanding the future direction of Governance, Risk and Compliance research. Based on these research gaps, this study aims to analyze the development of scientific publications related to Governance, Risk and Compliance (GRC) during the 2020–2026 period. Specifically, the study identifies the most influential publications, maps the conceptual structure of GRC research through co-occurrence network analysis, examines thematic development using thematic mapping, and explores the evolution of research topics through trend topics analysis. The findings are expected to make three important contributions. First, this study enriches the bibliometric literature by providing a comprehensive scientific mapping of GRC research within the finance and accounting disciplines. Second, it demonstrates the value of integrating multiple Biblioshiny analytical techniques to explain the intellectual structure and thematic evolution of GRC research. Third, the findings provide practical insights for researchers, practitioners, regulators, and policymakers in identifying emerging themes and future research directions in Governance, Risk and Compliance.

II. Literature Review and Hypothesis Development

2.1. Governance, Risk and Compliance (GRC)

Governance, risk and compliance (GRC) is an integrated management approach that aligns governance, risk management, and regulatory compliance within a unified organizational framework. As organizations face increasing business complexity, rapid technological change, evolving regulations, and growing stakeholder expectations, GRC has become an essential mechanism for strengthening organizational oversight, improving decision-making, enhancing risk management, and ensuring regulatory compliance (Papazafeiropoulou & Spanaki, 2016; Vicente & Silva, 2016). Rather than operating as separate organizational functions, governance, risk management, and compliance are integrated to improve coordination, reduce control redundancies, and support organizational resilience in dynamic business environments. Within the fields of finance and accounting, the implementation of GRC plays a crucial role in maintaining the quality of financial reporting, improving the effectiveness of internal controls, mitigating operational risks, and ensuring compliance with applicable standards and regulations. Information system-based GRC approaches also assist organizations in managing compliance and risk oversight in a more structured and efficient manner (Butler & Mcgovern, 2012). Consequently, GRC has evolved beyond a regulatory compliance mechanism into a strategic organizational framework that supports accountability, transparency, operational resilience, and sustainable organizational performance. This evolution reflects the increasing integration of governance principles with enterprise risk management and organizational decision support systems.

The development of GRC research has attracted increasing academic attention alongside digital transformation and changes in the global regulatory environment. GRC studies are no longer limited to corporate governance and organizational compliance issues but have expanded into areas such as data security, cloud governance, digital governance, and information technology-based risk management. The implementation of GRC within cloud computing environments has become increasingly important as organizations face emerging challenges related to data security, regulatory compliance, and information technology risk control (Brandis et al., 2019). At the same time, data quality and information integrity have become critical determinants of effective modern GRC management because organizational decision-making processes heavily depend on the validity of the data utilized (Sillaber et al., 2019). These developments further demonstrate that GRC integration has become increasingly relevant in supporting the effectiveness of modern organizational oversight models through adaptive and technology-oriented approaches (Seidenfuss et al., 2023). Although previous studies have extensively discussed individual aspects of governance, risk management, compliance, digital governance, and cloud-based control systems, research integrating these themes into a comprehensive mapping of the GRC scientific landscape remains relatively limited. This condition highlights the need for bibliometric studies capable of identifying the intellectual structure,

ISSN [Online]: 2776-6780

thematic evolution, and emerging research directions of Governance, Risk and Compliance. Therefore, the present study seeks to provide a comprehensive overview of the development of GRC research within the finance and accounting disciplines using a bibliometric approach.

2.2. Bibliometric Analysis

Bibliometric analysis is a quantitative science mapping approach used to examine the development of scientific knowledge through bibliographic metadata, including authors, keywords, citations, journal sources, and references. It enables researchers to identify publication trends, citation patterns, collaboration networks, and conceptual relationships, thereby providing an objective overview of the intellectual structure and evolution of a research field (Berger & Baker, 2014; Donthu et al., 2021). Compared with conventional narrative literature reviews, bibliometric analysis offers a more systematic and reproducible approach for evaluating scientific development, making it particularly appropriate for mapping Governance, Risk and Compliance (GRC) research in this study. In practice, bibliometric analysis is not only used to measure scientific productivity but also to map research themes, identify topic developments, and examine the evolution of scientific knowledge. The application of bibliometric methods continues to expand alongside the increasing demand for evidence mapping and systematic literature review studies. Bibliometric approaches provide comprehensive insights into research evolution through co-authorship, co-citation, bibliographic coupling, and keyword co-occurrence analyses (Donthu et al., 2021). Furthermore, bibliometric analysis has become an effective approach for objectively assessing the development of academic publications because it relies on measurable and well-documented research metadata (Ninkov et al., 2022). Within the context of literature reviews, this method is also utilized to identify the most influential articles, dominant research themes, and potential directions for future studies. Science mapping in bibliometric analysis enables relationships among research topics to be visualized systematically, thereby facilitating researchers in understanding the intellectual structure of a particular field of study (Passas, 2024).

These capabilities make bibliometric analysis particularly appropriate for identifying research gaps, tracing thematic evolution, recognizing influential scientific contributions, and predicting future research directions. Consequently, bibliometric analysis has become one of the most widely adopted approaches for evaluating the maturity and development trajectory of emerging scientific disciplines. The advancement of bibliometric methods has also been supported by the emergence of various scientific analytical software applications, including Biblioshiny integrated with R software. Biblioshiny is a web-based interface of the bibliometrix package in R designed to facilitate bibliometric analysis and science mapping visualization processes (Aria & Cuccurullo, 2017). This software enables researchers to systematically process bibliographic data through several analytical features, including annual scientific production, co-occurrence network analysis, thematic mapping, trend topics analysis, and citation analysis. In addition to supporting large-scale data processing, Biblioshiny also provides interactive visualizations that assist researchers in understanding conceptual relationships among research topics. The use of Biblioshiny in scientific studies continues to increase due to its ability to efficiently integrate statistical analysis and bibliometric visualization across various disciplines, including management, accounting, auditing, and organizational governance. The integration of these analytical features enables researchers to examine scientific productivity, intellectual influence, conceptual structures, thematic development, and research evolution within a single analytical framework. Therefore, Biblioshiny has become one of the most widely used bibliometric tools for producing comprehensive and reproducible science mapping analyses.

Within the fields of accounting and organizational governance, Scopus-based bibliometric analysis has increasingly been utilized to map research developments and identify the evolution of scientific studies. Previous studies demonstrate that bibliometric methods can provide systematic insights into the development of auditing, good corporate governance, fraud, taxation, and sustainability governance research through publication productivity analysis, citation analysis, and thematic relationship mapping (Santoso, 2022). These conditions indicate that bibliometric analysis has become increasingly relevant as a science mapping approach for understanding the development of GRC research. Nevertheless, most previous bibliometric studies have concentrated on specific topics within accounting and governance rather than examining Governance, Risk and Compliance (GRC) as an integrated research domain. Consequently,

ISSN [Online]: 2776-6780

comprehensive bibliometric evidence explaining the intellectual structure, thematic evolution, and emerging research directions of GRC remains relatively limited. This condition highlights the importance of conducting a comprehensive bibliometric analysis capable of providing a broader understanding of the development of GRC research within the finance and accounting disciplines.

2.3. Bibliometric Analysis Framework

The bibliometric analysis framework is employed to understand the development of scientific knowledge through a quantitative approach based on publication metadata. Bibliometric analysis enables researchers to identify publication patterns, research trends, conceptual relationships, and the influence of scientific articles within a particular academic field. This approach is not only used as a quantitative literature review method but also as a science mapping technique capable of systematically illustrating the intellectual structure of a research discipline (Donthu et al., 2021). By integrating multiple analytical techniques, bibliometric analysis provides a comprehensive understanding of scientific development from different perspectives, including publication productivity, intellectual influence, conceptual relationships, thematic evolution, and emerging research directions. Therefore, the bibliometric framework adopted in this study was designed to generate a holistic overview of Governance, Risk and Compliance (GRC) research rather than relying on a single bibliometric indicator. The analytical stages in Biblioshiny-based bibliometric studies generally begin with the Main Information analysis. This analysis is used to present the general characteristics of the research dataset, including the number of documents, journal sources, authors, average citations, publication year range, and the number of research keywords. Such information is important because it provides an initial overview of the quality and scope of the dataset before conducting further analysis (Aria & Cuccurullo, 2017). The identification of dataset characteristics also assists in ensuring the relevance and consistency of the research data used in bibliometric analysis (Ninkov et al., 2022). Accordingly, Main Information analysis serves as the foundation for subsequent bibliometric analyses by confirming that the dataset is sufficiently representative and appropriate for science mapping.

The next stage involves Annual Scientific Production analysis, which is used to identify the development of scientific publications based on publication years. This analysis is commonly visualized through trend graphs illustrating increases or decreases in publication output during specific periods. Such analysis is important because it reveals the dynamics of academic attention toward a research topic over time. Publication growth trends can also be utilized to identify the early, growth, and maturity phases of a scientific field or research theme (Passas, 2024). Consequently, this analysis provides evidence regarding the evolution of scholarly interest in GRC and helps identify periods of accelerated research development. In addition to publication trends, bibliometric analysis also emphasizes the importance of identifying influential articles through the Most Global Cited Documents analysis. This analysis is conducted to identify the most highly cited articles within the Scopus database, thereby illustrating studies that have made significant contributions to scientific development. A high citation count indicates that an article possesses substantial academic influence and is frequently referenced in subsequent research. Therefore, this analysis is essential for understanding the foundational studies that shape the development of GRC research. Citation analysis also enables researchers to recognize the intellectual foundations upon which subsequent GRC studies have been developed, thereby illustrating the scientific influence of seminal publications within the field.

The bibliometric analysis framework also includes Co-occurrence Analysis, which is utilized to map the conceptual structure of research based on relationships among keywords. This analysis generates network visualizations illustrating the interconnections among concepts within a research field. Node size represents keyword occurrence frequency, while connecting lines indicate the strength of relationships among keywords. Co-occurrence analysis assists researchers in understanding the intellectual structure of a scientific discipline through conceptual relationships among research topics and in identifying dominant and emerging research themes (Donthu et al., 2021). As a result, this analysis provides a conceptual overview of how different GRC themes are interconnected and how the discipline has developed through the integration of governance, risk management, compliance, sustainability, and digital technologies. Another important analytical component is the Thematic Map, which is used to identify the position and development of research themes based on centrality and density levels. Thematic map visualizations are generally divided into four quadrants,

ISSN [Online]: 2776-6780

namely motor themes, niche themes, basic themes, and emerging or declining themes. This analysis helps researchers understand the significance and developmental stage of specific themes within scientific research structures while also identifying potential research opportunities for future investigation (Aria & Cuccurullo, 2017). In GRC research, thematic mapping can be used to identify major themes such as corporate governance, risk management, compliance management, and digital governance. Furthermore, thematic mapping provides strategic insights into the maturity and relevance of research themes, enabling researchers to distinguish between established topics and emerging areas that warrant further investigation.

In addition to thematic mapping, bibliometric studies also utilize Trend Topics Analysis to observe the evolution of research topics over specific time periods. This analysis presents the keywords that appear most frequently during particular years, thereby illustrating shifts in research focus over time. Trend topics plots demonstrate the relationships between keywords and their dominant periods of occurrence, allowing researchers to dynamically interpret the evolution of research themes. This analysis is particularly important for understanding changes in research directions related to organizational governance, digital risk, sustainability governance, organizational compliance, and technology-based control systems within GRC studies. Collectively, the integration of Main Information, Annual Scientific Production, Most Global Cited Documents, Co-occurrence Analysis, Thematic Map, and Trend Topics Analysis enables this study to examine GRC research from complementary perspectives. Rather than providing isolated bibliometric indicators, these analytical techniques collectively explain publication growth, intellectual influence, conceptual structures, thematic development, and the evolution of research trends. Consequently, the proposed bibliometric framework provides a comprehensive basis for understanding the development of Governance, Risk and Compliance research and directly supports the achievement of this study's research objectives.

III. Research Method

This study employed a descriptive quantitative design using a bibliometric literature review approach. Secondary data were retrieved from the Scopus database in May 2026. The literature search was conducted using the Scopus search string TITLE-ABS-KEY ("Governance, Risk and Compliance"), which searches for the specified phrase within the title, abstract, and author keywords of indexed publications. Scopus was selected because it is one of the largest multidisciplinary citation databases, providing comprehensive journal coverage and standardized bibliographic metadata, making it particularly suitable for bibliometric research. To ensure dataset relevance and consistency, predefined inclusion and exclusion criteria were applied. The inclusion criteria comprised English-language journal articles indexed in Scopus, published between 2020 and 2026, and classified under the Business, Management and Accounting subject area. Conference papers, book chapters, editorials, notes, errata, duplicate records, and publications unrelated to Governance, Risk and Compliance (GRC) were excluded prior to bibliometric processing. The data collection process consisted of four sequential stages, as illustrated in Figure 1. First, an initial search was conducted in the Scopus database using the predefined search string. Second, the retrieved records were restricted to the Business, Management and Accounting subject area. Third, additional screening was performed by limiting the document type to journal articles and the publication language to English. Finally, the remaining publications that satisfied all inclusion criteria were retained as the final dataset for bibliometric analysis. This systematic screening procedure ensured that only publications relevant to the research objectives were included in the study.

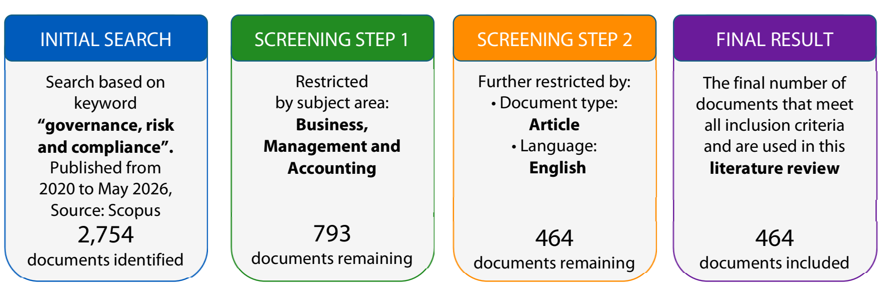

Figure 1. Research Data Screening Process
Theme: Governance, Risk and Compliance (GRC)

ISSN [Online]: 2776-6780

Based on Figure 1, the initial search retrieved 2,754 publications from the Scopus database. After restricting the dataset to the Business, Management and Accounting subject area, 793 publications remained. Subsequently, the inclusion criteria were applied by limiting the dataset to English-language journal articles, while duplicate and irrelevant records were excluded, resulting in a final dataset of 464 publications. Accordingly, the research population comprised all Scopus-indexed publications related to Governance, Risk and Compliance (GRC), whereas the research sample consisted of the 464 articles that satisfied the predefined inclusion criteria through purposive sampling. The research instrument consisted of bibliographic metadata, including article titles, abstracts, author keywords, author information, publication years, journal sources, citations, and references. Data validity was ensured through a systematic screening process based on the established inclusion and exclusion criteria, while data reliability was supported by the credibility, standardized indexing, and metadata quality of the Scopus database.

Data analysis was performed using Biblioshiny, the web interface of the Bibliometrix package (version 5.3.0) running on R software (version 2026.04.0). Bibliographic data were exported from Scopus in CSV format and imported into Biblioshiny for data cleaning, duplicate verification, metadata standardization, and bibliometric analysis using the default analytical parameters provided by Bibliometrix. The software was employed because it enables comprehensive and reproducible bibliometric analyses, including descriptive analysis, citation analysis, conceptual structure analysis, thematic mapping, and trend topics analysis. Several bibliometric techniques were applied to address the research objectives. Main Information analysis was used to describe the general characteristics of the dataset. Annual Scientific Production analysis examined publication growth over time. Most Global Cited Documents analysis identified the most influential publications. Co-occurrence Network Analysis was employed to map conceptual relationships among research keywords. Thematic Map Analysis identified the maturity and strategic importance of research themes, while Trend Topics Analysis examined the evolution of research topics during the observation period.

The findings were interpreted through descriptive analysis of bibliometric visualizations, citation patterns, keyword networks, and conceptual relationships among research themes. The systematic search strategy, transparent screening process, and clearly documented analytical procedures enhance the reproducibility of the study and enable future researchers to replicate the analysis using comparable datasets and search criteria.

IV. Results and Discussion

4.1. Main Information

Based on the results of the Main Information analysis presented in the main information table, Governance, Risk and Compliance (GRC) research during the 2020–2026 period demonstrated a significant development in scientific publications, as presented in the following table.

Table 1. Main Information

Description	Results
Timespan	2020 : 2026
Sources (Journals, Books, etc)	256
Documents	464
Annual Growth Rate %	38,02
Document Average Age	1,58
Average citations per doc	7,485
References	26718
DOCUMENT CONTENTS	
Keywords Plus (ID)	784
Author's Keywords (DE)	1924
AUTHORS	
Authors	1260
Authors of single-authored docs	87
AUTHORS COLLABORATION	
Single-authored docs	87

ISSN [Online]: 2776-6780

Description	Results
Co-Authors per Doc	2,81
International co-authorships %	28,02
DOCUMENT TYPES	
article	464

Based on the results of the Main Information analysis presented in Table 1, the research dataset comprised 464 journal articles published between 2020 and 2026, originating from 256 scientific sources. The annual publication growth rate reached 38.02%, indicating a substantial increase in academic interest in Governance, Risk and Compliance (GRC) during the observation period. The dataset also recorded an average document age of 1.58 years and 7.485 citations per document, suggesting that GRC remains a relatively recent and rapidly developing research field that has attracted considerable scholarly attention. Furthermore, the analysis identified 784 Keywords Plus**,** 1,924 Author's Keywords, and 26,718 references, reflecting the breadth of concepts and knowledge supporting GRC research. The dataset involved 1,260 authors, with an average of 2.81 authors per publication and an international co-authorship rate of 28.02%, indicating active collaboration among researchers across countries. These findings demonstrate that GRC has evolved into a multidisciplinary research field integrating accounting, finance, governance, risk management, sustainability, and information systems. Overall, the Main Information analysis confirms the rapid growth and increasing internationalization of GRC research, supporting the argument of (Donthu et al., 2021) that bibliometric indicators provide valuable evidence for understanding the maturity and intellectual development of a scientific discipline.

4.2. Annual Scientific Production Analysis

The results of the Annual Scientific Production analysis generated using Biblioshiny are presented in Table 2. This analysis describes the annual distribution of scientific publications and illustrates the development of Governance, Risk and Compliance (GRC) research during the 2020–2026 observation period.

Table 2. Annual Scientific Production

Year	Articles
2020	23
2021	26
2022	33
2023	29
2024	50
2025	144
2026	159

Based on the annual publication data presented in Table 2, GRC research demonstrates a generally increasing publication trend throughout the observation period. The number of publications increased from 23 articles in 2020 to 33 articles in 2022, followed by a slight decline to 29 articles in 2023. Publication output then increased substantially to 50 articles in 2024**,** 144 articles in 2025, and 159 articles indexed by May 2026, indicating a significant acceleration of academic interest in GRC research. The annual publication pattern indicates that GRC remains in a rapid growth phase. The substantial increase in publications during 2025–2026 reflects the growing importance of integrated governance, enterprise risk management, regulatory compliance, digital transformation, and sustainability within both academic research and organizational practice. These developments suggest that GRC has evolved from a relatively specialized topic into a multidisciplinary research field integrating accounting, finance, corporate governance, information systems, sustainability, and organizational management.

The increasing publication trend identified in this study is consistent with previous bibliometric studies reporting continuous growth in governance, auditing, and internal audit research (Firdausi et al., 2025; Santoso, 2022). This similarity indicates that increasing organizational complexity, digital transformation, and evolving regulatory requirements continue to stimulate scholarly interest in Governance, Risk and Compliance research. Consequently, GRC is expected to remain an important area for future interdisciplinary research.

ISSN [Online]: 2776-6780

4.3. Most Global Cited Documents Analysis

The Most Global Cited Documents analysis was conducted to identify the publications that have made the greatest intellectual contribution to the development of Governance, Risk and Compliance (GRC) research. Citation frequency reflects the scientific influence of a publication and indicates the studies that have shaped subsequent research within the field. The results are presented in Table 3.

Table 3. Most Global Cite Document

Paper	DOI	Total Citations	TC per Year	Normalized TC
Reber (2022), Journal of Business Ethics	10.1007/s10551-021-04847-8	339	67,80	10,0332
Graham Jr. (2022), Journal of Financial Economics	10.1016/j.jfineco.2022.07.008	251	50,20	7,4287
Galletta (2023), Business Strategy and the Environment	10.1002/bse.3129	142	35,50	9,7815
Koirala (2020), Journal of Corporate Finance	10.1016/j.jcorpfin.2018.08.007	126	18,00	5,0842
Peukert (2022), Marketing Science	10.1287/mksc.2021.1339	106	21,20	3,1372
Yallop (2020), Journal of Tourism Futures	10.1108/JTF-10-2019-0108	101	14,40	4,0754
Lee (2020), European Business Organization Law Review	10.1007/s40804-020-00200-0	100	14,30	4,0351
Demaria (2021), Business Strategy and the Environment	10.1002/bse.2651	79	13,20	4,5543
Kabir Hassan (2021), Research in International Business and Finance	10.1016/j.ribaf.2021.101500	59	9,80	3,4013
Alhares (2020), International Journal of Accounting Information Management	10.1108/IJAIM-11-2019-0127	58	8,30	2,3404

As presented in Table 3, the most highly cited publications primarily address corporate governance, enterprise risk management, sustainability, and digital governance. These studies provide the theoretical and conceptual foundations for contemporary GRC research by emphasizing governance effectiveness, organizational resilience, accountability, regulatory compliance, and the integration of sustainability into corporate decision-making. More recent highly cited publications also demonstrate increasing scholarly attention to digital transformation, information systems, and technology-enabled governance, reflecting the changing organizational environment in which GRC is implemented. Overall, the citation patterns indicate that GRC research has evolved from a primary focus on governance and risk management toward a broader interdisciplinary perspective incorporating sustainability and digital technologies. These findings are consistent with previous bibliometric studies reporting an increasing integration of governance, technology, and sustainability within accounting and finance research (Santoso et al., 2023; Yazid et al., 2023). Consequently, the most influential publications not only constitute the intellectual foundation of GRC research but also illustrate the emerging directions that are likely to shape future studies in this field.

4.4. Co-occurrence Network Analysis

Based on the visualization results of the Co-occurrence Network Analysis generated using Biblioshiny, the conceptual structure of Governance, Risk and Compliance (GRC) research is formed through several interconnected keyword clusters representing the major themes within GRC studies, as illustrated in Figure 2. Co-occurrence analysis is one of the principal bibliometric techniques used to identify conceptual relationships among research topics by examining the frequency with which keywords appear together within scientific publications. Consequently, this analysis provides valuable insights into the intellectual structure and thematic organization of a research field.

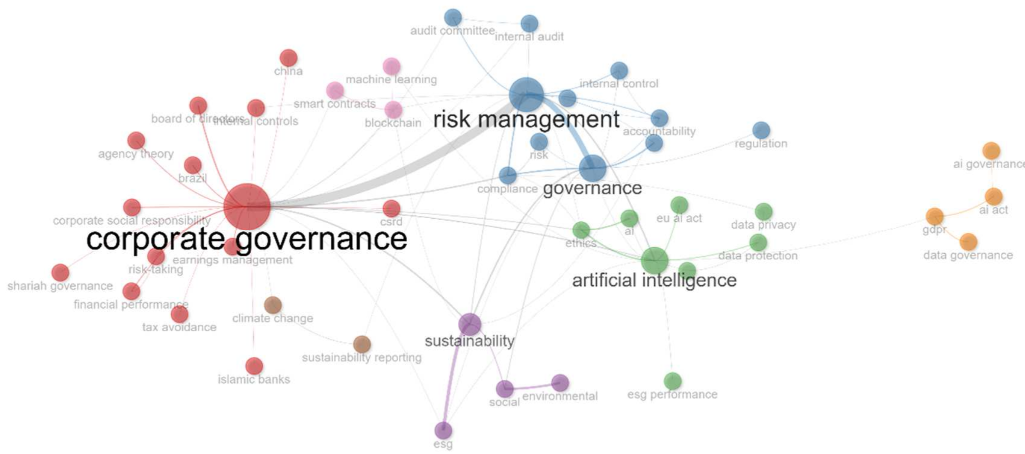

Figure 2. Co-occurrence Network

In the co-occurrence network visualization, node size represents the frequency of keyword occurrences, while the connecting lines illustrate the strength of relationships among keywords within scientific publications. Larger node sizes and thicker connecting lines indicate stronger conceptual relationships among research themes. Based on the visualization, several dominant clusters can be identified within Governance, Risk and Compliance (GRC) research, particularly those associated with corporate governance, risk management, compliance management, sustainability, digital governance, and information systems. The concentration of these dominant keywords indicates that contemporary GRC research is increasingly characterized by the integration of governance mechanisms, organizational risk management, regulatory compliance, and digital technologies rather than treating these concepts as separate research domains. The primary nodes positioned at the center of the network indicate that GRC research has evolved into a multidisciplinary field with strong connections to organizational governance, internal control systems, risk management, and the digital transformation of modern organizations. Furthermore, the existence of multiple clusters represented by different colors demonstrates that GRC research has expanded into various interconnected research directions and thematic areas. The presence of several closely connected clusters also suggests that GRC research has experienced substantial conceptual diversification. While corporate governance and risk management remain the core research themes, newer topics such as sustainability, digital governance, cybersecurity, cloud computing, and information systems have become increasingly integrated into the GRC research landscape.

The results of the co-occurrence network analysis indicate that the conceptual structure of GRC research is primarily shaped by the integration of corporate governance, risk management, regulatory compliance, sustainability, and technology-based information systems. The strong interconnections among these keywords demonstrate that contemporary GRC research has evolved beyond traditional governance and compliance issues toward digital governance, sustainability governance, and technology-enabled risk management. Consistent with Aria and (Aria & Cuccurullo, 2017) and (Donthu et al., 2021), co-occurrence analysis reveals the intellectual structure and thematic relationships of a scientific discipline. These findings are also consistent with previous bibliometric studies showing that governance, risk management, and digital transformation constitute the dominant conceptual clusters within accounting and governance research (Santoso, 2022; Yazid et al., 2023). Overall, the findings confirm that Governance, Risk and Compliance has developed into an integrated and multidisciplinary research field, while suggesting that future studies will increasingly focus on artificial intelligence, ESG integration, cybersecurity governance, and technology-enabled compliance systems.

ISSN [Online]: 2776-6780

4.5. Thematic Map Analysis

Based on the visualization results of the Thematic Map Analysis generated using Biblioshiny, the thematic structure of Governance, Risk and Compliance (GRC) research is classified into four major quadrants according to the levels of centrality and density, as illustrated in Figure 3. Thematic Map Analysis is one of the principal bibliometric techniques used to identify the conceptual maturity and strategic importance of research themes within a scientific discipline. By simultaneously evaluating centrality and density, thematic mapping enables researchers to distinguish between well-developed themes, emerging topics, specialized research areas, and foundational concepts that collectively describe the evolutionary structure of Governance, Risk and Compliance (GRC) research (Aria & Cuccurullo, 2017).

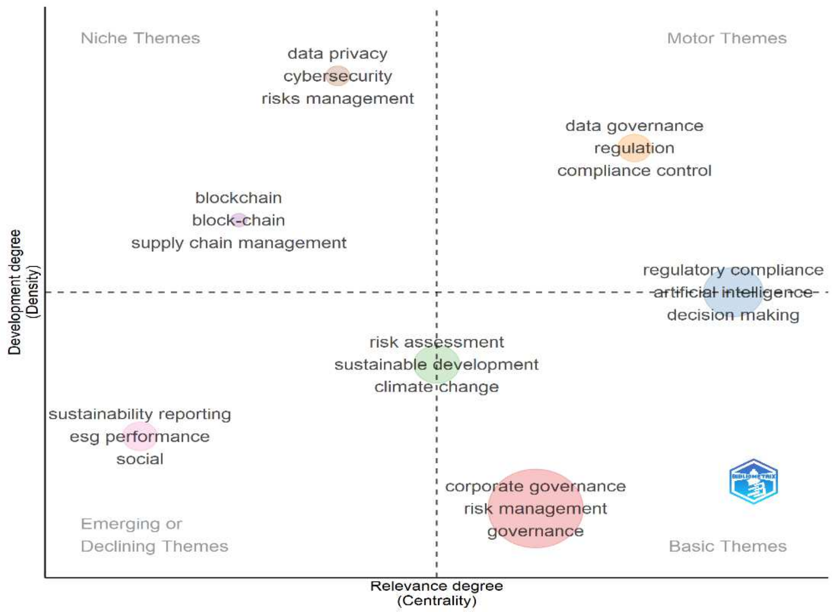

Figure 3. Thematic Map

The horizontal axis (centrality) represents the level of relevance and interconnectedness of a research theme with other themes, while the vertical axis (density) indicates the level of internal development or conceptual maturity of a research theme. Higher centrality values indicate that a theme possesses greater importance within the overall research structure. Meanwhile, higher density values reflect more conceptually developed and structured research themes. Therefore, thematic mapping is utilized to understand the position of research themes, identify research development directions, and explore future research opportunities. In the upper-right quadrant (Motor Themes), several themes were identified, including data governance, regulation, and compliance control. This quadrant represents themes characterized by both high relevance and strong internal development, indicating that these themes function as the primary drivers of GRC research development. These themes demonstrate strong interconnections with various other studies and have evolved conceptually within the scientific literature. The presence of data governance and compliance control highlights that data management, compliance monitoring, and organizational regulation have become major focuses in modern GRC research. In addition, themes such as regulatory compliance, artificial intelligence, and decision making, which are positioned close to the Motor Themes area, indicate that GRC research has increasingly expanded toward the integration of digital technologies and artificial intelligence to support organizational decision-making and compliance oversight processes. The strategic position of these themes suggests that future GRC research will increasingly depend on the integration of digital governance, artificial intelligence, and regulatory technology (RegTech) to strengthen organizational transparency, accountability, and compliance effectiveness.

ISSN [Online]: 2776-6780

In the lower-right quadrant (Basic Themes), themes such as corporate governance, risk management, and governance appeared with relatively larger node sizes compared to other themes. This quadrant represents foundational themes characterized by high relevance but relatively lower internal development. These findings indicate that such themes serve as the core foundation of GRC research and maintain broad relationships with various other research topics. The large node sizes associated with corporate governance and risk management demonstrate that corporate governance and risk management remain the central focus of GRC research development during the 2020–2026 period. These findings further suggest that GRC research continues to emphasize the strengthening of organizational oversight, internal control systems, and integrated risk management practices. Although these themes are considered foundational, their relatively lower density indicates that considerable opportunities remain for further theoretical refinement and interdisciplinary integration, particularly with emerging digital governance and sustainability issues.

In the upper-left quadrant (Niche Themes), themes including data privacy, cybersecurity, and risk management were identified. These themes exhibit high levels of internal development but relatively limited connections with other research themes. Themes within this quadrant are generally more specialized and developed intensively within specific research clusters. The emergence of cybersecurity and data privacy indicates that GRC research has increasingly expanded into issues related to data protection, information security, and digital risk management. In addition, themes such as blockchain, block-chain, and supply chain management also appeared within this quadrant, reflecting the development of GRC research in blockchain technology and digitally integrated supply chain governance. The high density values associated with these themes indicate that studies related to digital security and information technology have reached a relatively mature stage within GRC research. The emergence of these specialized themes reflects the growing complexity of organizational digital ecosystems, where cybersecurity, data privacy, and blockchain technologies have become increasingly important in strengthening governance, managing digital risks, and ensuring regulatory compliance. Their position as niche themes suggests that these topics have reached considerable conceptual maturity while still offering opportunities for broader integration into mainstream GRC research.

Meanwhile, the lower-left quadrant (Emerging or Declining Themes) included themes such as sustainability reporting, ESG performance, and social. This quadrant represents themes characterized by relatively low relevance and lower levels of development, suggesting either emerging themes or themes experiencing declining academic attention. In the context of this study, sustainability and ESG-related themes are more appropriately interpreted as emerging themes because issues related to organizational sustainability, ESG reporting, and corporate social responsibility have increasingly gained attention within modern business and accounting literature. In addition, themes including risk assessment, sustainable development, and climate change occupy the central area of the thematic map, indicating substantial potential for future development. Collectively, these findings demonstrate that GRC research is increasingly expanding beyond traditional governance and compliance toward sustainability governance, climate-related risk management, and environmental accountability. This thematic evolution reflects the growing integration of environmental, technological, and governance perspectives within contemporary organizational control and risk management systems. The emergence of sustainability reporting, ESG performance, and digital governance as strategic themes is also consistent with recent bibliometric studies highlighting the increasing importance of sustainability and technology-oriented governance in accounting and finance research (Firdausi et al., 2025; Rahmat et al., 2025).

4.6. Trend Topics Analysis

Trend Topics Analysis was conducted to examine the temporal evolution of research themes in Governance, Risk and Compliance (GRC) during the 2020–2026 period. Unlike co-occurrence analysis, which explains conceptual relationships among keywords, Trend Topics Analysis identifies when specific research themes emerged and how their prominence changed over time. By examining keyword frequency together with their temporal distribution, this analysis provides insights into the shifting research priorities that characterize the evolution of GRC literature. The results of the Trend Topics Analysis generated using Biblioshiny are presented in Table 4.

ISSN [Online]: 2776-6780

Table 4. Trend Topics

Term	Frequency	Year (Q1)	Year (Median)	Year (Q3)
agency theory	8	2021	2023	2025
compliance	16	2023	2024	2026
corporate social responsibility	10	2023	2024	2025
financial performance	9	2024	2024	2025
corporate governance	65	2022	2025	2026
risk management	42	2023	2025	2026
governance	31	2023	2025	2025
artificial intelligence	33	2025	2026	2026
esg performance	10	2025	2026	2026
sustainability reporting	10	2025	2026	2026

Note: Q1 represents the first quartile (early occurrence), Median indicates the median publication year, and Q3 represents the upper quartile (later occurrence) of each keyword within the observation period.

As presented in Table 4, corporate governance was the most dominant research topic, appearing 65 times during the observation period. This was followed by risk management (42 occurrences), artificial intelligence (33 occurrences), governance (31 occurrences), and compliance (16 occurrences). These findings indicate that governance and risk management continue to serve as the intellectual foundations of GRC research, while technology-oriented themes have gained increasing prominence in recent years. The relatively high frequency of governance-related keywords demonstrates that organizational governance, enterprise risk management, and regulatory compliance remain central issues within contemporary GRC research. The temporal distribution further illustrates the evolution of research priorities throughout the study period. Agency theory emerged as one of the earliest research themes, first appearing in 2021 and continuing to receive scholarly attention through 2025, highlighting its enduring role as a theoretical foundation for explaining governance relationships, organizational oversight, and risk control. Between 2023 and 2025, research increasingly focused on corporate governance**,** governance, risk management, compliance, corporate social responsibility, and financial performance, reflecting growing academic interest in integrated governance systems, organizational accountability, and enterprise risk management.

A notable thematic shift occurred during 2025–2026, when artificial intelligence, ESG performance, and sustainability reporting emerged as prominent research topics. The appearance of these themes indicates that GRC research has expanded beyond traditional governance and compliance issues toward technology-enabled governance, sustainability management, and ESG-oriented organizational practices. This transition reflects increasing organizational reliance on digital technologies, artificial intelligence, and sustainability frameworks to strengthen governance effectiveness, improve risk management, and support regulatory compliance in increasingly complex business environments. These findings are consistent with previous bibliometric studies that reported a growing integration of governance, digital transformation, and sustainability within accounting and finance research (Firdausi et al., 2025; Santoso et al., 2023; Yazid et al., 2023). However, the present study extends earlier research by demonstrating that artificial intelligence, ESG performance, and sustainability reporting have become emerging strategic themes within Governance, Risk and Compliance research during the most recent observation period. This finding suggests that future GRC research will increasingly adopt interdisciplinary perspectives that integrate governance, technological innovation, sustainability, and organizational resilience to address evolving regulatory and business challenges.

V. Conclusion

This study provides a comprehensive bibliometric mapping of Governance, Risk and Compliance (GRC) research in the fields of finance and accounting based on 464 Scopus-indexed journal articles published during the 2020–2026 period. The findings demonstrate that GRC research has experienced substantial publication growth, particularly during 2025–2026, reflecting increasing academic interest in integrated governance, enterprise risk management, regulatory compliance, sustainability, and digital transformation.

The bibliometric analyses further reveal that corporate governance and risk management remain the intellectual foundation of the field, while thematic evolution indicates a growing integration of sustainability, information systems, and digital governance within contemporary GRC research. This study also demonstrates that integrating multiple Biblioshiny analytical techniques, including Main Information, Annual Scientific Production, Most Global Cited Documents, Co-occurrence Network Analysis, Thematic Map Analysis, and Trend Topics Analysis, provides a more comprehensive understanding of the intellectual structure, thematic development, and future direction of GRC research than relying on a single bibliometric indicator. The identification of emerging themes such as artificial intelligence, ESG performance, sustainability reporting, cybersecurity governance, and Regulatory Technology (RegTech) extends current bibliometric evidence and offers a broader perspective on the evolution of GRC as an integrated research domain.

From a practical perspective, the findings provide useful insights for researchers, practitioners, regulators, and policymakers in identifying strategic research priorities and strengthening integrated Governance, Risk and Compliance frameworks. In particular, the growing prominence of artificial intelligence, ESG, digital governance, cybersecurity, and sustainability governance suggests that organizations should continue to strengthen integrated GRC systems capable of responding to technological innovation, evolving regulations, and increasing stakeholder expectations. This study has several limitations because it relied exclusively on Scopus-indexed English-language journal articles published during the 2020–2026 period. Consequently, relevant publications indexed in other databases or published in other languages may not have been captured. Furthermore, the findings are limited to bibliometric evidence and do not evaluate the empirical implementation or effectiveness of GRC practices within organizations. Future research is encouraged to expand data sources by incorporating databases such as Web of Science, Dimensions, or Crossref, while combining bibliometric techniques with systematic literature reviews or empirical research. Further studies may also examine emerging themes identified in this research, including artificial intelligence governance, ESG integration, cybersecurity governance, digital compliance, Regulatory Technology (RegTech), and sustainability risk management, as well as explore their implications across different industrial sectors and organizational contexts.

References

Anisa, A. S., Santoso, R. A., & Fitriana, F. (2025). Bibliometric Analysis of Auditor Switching Development with Vosviewer. Golden Ratio of Auditing Research, 6(17), 284–295. https://doi.org/10.52970/grar.v6i1.1462

Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. Journal of Informetrics, 11(4), 959–975. https://doi.org/https://doi.org/10.1016/j.joi.2017.08.007

Bahrul, B., Fitriana, F., & Santoso, R. A. (2024). Aiming For The Future Of Bibliometric Forecast Research In Fraud Prevention: A Review Of Digital Economy Exploration. Al-Kharaj: Journal of Islamic Economic and Business, 5(4). https://doi.org/10.24256/kharaj.v5i4.4451

Berger, J. M., & Baker, C. M. (2014). Bibliometrics: An Overview. RGUHS Journal of Pharmaceutical Sciences, 4(3), 81–92. https://doi.org/10.5530/rjps.2014.3.2

Brandis, K., Dzombeta, S., Colomo-palacios, R., & Stantchev, V. (2019). applied sciences Governance , Risk , and Compliance in Cloud Scenarios. Applied Sciences, 9(2)(320), 1–21. https://doi.org/10.3390/app9020320

Butler, T., & Mcgovern, D. (2012). A conceptual model and IS framework for the design and adoption of environmental compliance management systems. For special issue on governance , risk and compliance in IS. Information Systems Frontiers, 14(2), 221–235. https://doi.org/10.1007/s10796-009-9197-5

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, M. W. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of Business Research, 133(May), 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Firdausi, Q., Safitri, S., Manulang, N., Daclan, F., & Santoso, R. A. (2025). A Bibliometric Analysis of Internal Audit Research in Indonesia. Golden Ratio of Finance Management, 5(1), 208–218. https://doi.org/10.52970/grfm.v5i1.996

Halawa, D., Fitriana, F., & Santoso, R. A. (2024). Analisis Bibliometrik Atas Penelitian Belanja Perpajakan Menggunakan Aplikasi Vosviewer. Jurnal Akuntansi Dan Pajak, 24(02), 1–7. https://www.jurnal.stie-aas.ac.id/index.php/jap/article/view/11557

ISSN [Online]: 2776-6780

Hulu, A. W. Y., Fitriana, F., & Santoso, R. A. (2024). Tema Yang Muncul Dalam Penerimaan Pajak (Tinjauan Bibliometrik). Jurnal Akuntansi Dan Pajak, 24(2), 1–5. https://www.jurnal.stie-aas.ac.id/index.php/jap/article/view/12149

Jazadi, F. R., Santoso, R. A., & Fitriana, F. (2024). Memetakan Lanskap: Analisis Bibliometrik atas Audit Report Lag. Jurnal Ekonomi, Koperasi & Kewirausahaan, 14(8). https://doi.org/10.59188/covalue.v14i8.4012

Kurniawan, S. A., Mayuri, N. K. L., Fitriana, F., & Santoso, R. A. (2025). Bibliometric Analysis of The Development of Forensic Audit Research Based on VOS-Viewer. Golden Ratio of Finance Management, 5(1), 145–154. https://doi.org/10.52970/grfm.v5i1.1013

Madu, D. H., Fitriana, F., Santoso, R. A., & Rusdiansyah, N. (2023). Analisis Bibliometrik Tren Kolaborasi Penelitian antar Peneliti terkait dengan Audit Eksternal suatu Bisnis serta Instansi Pemerintah di Indonesia (Tahun 2018-2023). Jurnal Aktiva: Riset Akuntansi Dan Keuangan, 6(1), 10–16. https://doi.org/10.52005/aktiva.v6i1.223

Nazara, D. S., Fitriana, F., & Santoso, R. A. (2024). Analisis bibliometrik dengan Vosviewer terhadap perkembangan penelitian forensic audit. Jurnal Sains Dan Teknologi, 5(3), 714–719. https://doi.org/10.55338/saintek.v5i1.2339

Ninkov, A., Frank, J. R., & Maggio, L. A. (2022). Bibliometrics: Methods for studying academic publishing. Perspectives on Medical Education, 11(3), 173–176. https://doi.org/10.1007/s40037-021-00695-4

Nurachman, I. A., Heryana, R. P., Luthfi, D., Fitriana, F., & Santoso, R. A. (2025). The Trend of Audit Quality Development: A Scopus-Based Bibliometric Analysis. Golden Ratio of Social Science and Education, 5(1), 230–237. https://doi.org/10.52970/grsse.v5i1.1086

Papazafeiropoulou, A., & Spanaki, K. (2016). Understanding governance, risk and compliance information systems (GRC IS): The experts view. Information Systems Frontiers, 18(6), 1251–1263. https://doi.org/10.1007/s10796-015-9572-3

Passas, I. (2024). Bibliometric Analysis: The Main Steps. Encyclopedia, 4(2), 1014–1025. https://doi.org/https://doi.org/10.3390/encyclopedia4020065

Rahmat, F., Santoso, R. A., & Fitriana, F. (2025). Analisis Bibliometrik Terhadap Perkembangan Penelitian Perpajakan Digital Dengan Vosviewer Berdasarkan Data Scopus 2018-2025. Jurnal Ilmu Ekonomi, 8(3), 1304–1312. https://doi.org/10.57178/paradoks.v8i3.1422

Rukhviyanti, N., Santoso, R. A., & Hayati, N. (2023). Pemetaan Lanskap Riset Human Development Index dan Technology Menggunakan Data Scopus dengan Analisis Bibliometrik. Media Jurnal Informatika, 15(2), 123–128. https://doi.org/10.35194/mji.v15i2.3480

Santoso, R. A. (2022). Trends in Audit and Good Corporate Governance Research: A Bibliometric Analysis from 1994 to 2022 Based on Scopus Data. Golden Ratio of Data in Summary, 2(2), 97–106. https://doi.org/10.52970/grdis.v2i2.660

Santoso, R. A., Rahmadianti, R., Sari, D. K., & Wahyuni, N. (2023). Bibliometric Analysis Of Developments And Trends In Fraud Risk Assessment Research: Scopus Literature Review 1989-2023. Jurnal Scientia, 12(3), 4145–4153. https://doi.org/10.58471/scientia.v12i03

Seidenfuss, K.-U., Young, A., & Datwani, M. (2023). Integrating governance, risk and compliance? A multi-method analysis of the new Three Lines Model. SN Business & Economics, 3(10), 184. https://doi.org/10.1007/s43546-023-00561-x

Sillaber, C., Mussmann, A., & Breu, R. (2019). Experience: Data and Information Quality Challenges in Governance , Risk , and Compliance Management. Journal of Data and Information Quality (JDIQ), 11(2), 1-14. https://doi.org/https://doi.org/10.1145/3297721

Suandani, R., Dachlan, F., & Santoso, R. A. (2024). Deteksi Kecurangan Laporan Keuangan Dengan Metode Bibliometrik. Jurnal Review Pendidikan Dan Pengajaran, 7(1), 2684–2690.

Vicente, P., & Silva, M. M. (2016). A Conceptual Model for Integrated Governance , Risk and Compliance A Conceptual Model for Integrated Governance ,. International Conference on Advanced Information Systems Engineering, JUNE 2011, 199–213. https://doi.org/10.1007/978-3-642-21640-4_16

Yazid, H., Santoso, R. A., Ismail, T., & Taqi, M. (2023). Islamic Banking Adoption Indexed Biblioshiny Research Dimension. ICOSTELM.