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Enhancing Professional Skepticism and Audit Decisions: A Scientometric View

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ABSTRACT
This study aims to examine the direction of studies concerning the relationship between professional scepticism and audit decisions. The method used in this research was viewer analysis and also the PRISMA method approach, with 54 years of observation from 1970 to 2024. Of the 980 articles obtained, only 34 eligible articles were published. The research results showed that the article written by Quadackers et al., (2014) was ranked 1st as the most cited article, with 270 citations. The method most widely used with this research theme is the experimental method. Furthermore, the navigation between professional scepticism and audit decisions in the analysis of bibliometrics in cluster 1 is dominated by the keywords of auditor judgment, sceptical judgment, literature and accounting estimate. This study is the first to investigate enhancing relationship between professional skepticism and audit decisions using bibliometrics analysis and a literature review. This study focuses on articles published between 1970 to 2024. This study is important because it connects previous and more recent studies, identifies gaps in understanding, and suggests new ways to study relationship between professional skepticism and audit decisions. The material used in this study was only taken from the Scopus database. Therefore, further research needs to be done by including indexing and other databases.
***Keywords**: professional scepticism; audit decisions; VOSViewer analysis.*

INTRODUCTION

Accounting development with the new paradigm shift has become an essential necessity, specifically in the current era where the world is moving toward fast-technology knowledge-based economy (Fachriaz & Saifudin, 2026). This can be described from quite basic dynamics in the fields of manufacturing to construction and business, data analysis, blockchain, and artificial intelligence. The impact of these dynamic developments will have an impact on audits (Nwachukwu et al., 2021). Based on several studies, audit research is generally based on practical problems (Hay, 2017, 2018). This study raised such practical problems regarding audit decisions. Audit decision or audit decision making is the action done by auditors in making decisions concerning

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the results of the audit judgment. This shows that audit judgment, which includes the formation of ideas, opinions or estimates about a goal, an event, a government unit or other type of phenomenon, is generally followed by decision making (Bonner, 1999). Ashton & Ashton (1995) stated that since the 1980s there has been a shift in research regarding decision making in auditing. Changes in decision making as a passive converter from input to output based on the role of decision making related to knowledge and memory with newer models. The new models in question focus on ways to control or eliminate errors, inconsistencies and biases assisted by mechanical decision aids (Ashton & Willingham, 1988).

Decision making trend in auditing has developed since 2020, i.e. decision making which is based on cognitive abilities for explaining the interaction between an individual's ability, knowledge and experience in making judgments (Hamdam et.al., 2021; Amirul et.al,2020). This is confirmed by Alberti et al.(2022) and Aburisheh et al.(2023) who analysed that in the auditing field, there is still a need to research auditing performance, one of which is audit decision. Performance auditing has relevance to professional competence or expertise (IFAC (International Federation of Accountants), 2014). Based on IFAC (2014), professional competence or expertise is (a) intellectual, (b) interpersonal and communication, (c) personality, and (d) organizational skills that are integrated by public accountants with technical competence and values, ethics and professional behaviour to demonstrate professional competence. Specifically, intellectual expertise according to Wechsler (1975) dan Wechsler et.al (2008), the ability to act globally, reason rationally and deal with the environment effectively. Intellectual expertise greatly influences decision making in auditing (Isyarani & Astuti, 2023; Munidewi et al., 2024). One representative variable for articulating intellectual expertise is professional scepticism (Dimitrova & Sorova, 2016; Janssen et al., 2021; Saifudin et al, 2025b; Saifudin et al, 2025a).

Ho et.al (2022) provide various descriptions of professional scepticism in different incentive structures as well as the description of professional scepticism from Nolder & Kadous (2018). The reason why this research uses the professional scepticism variable is that the conceptualization of professional scepticism in terms of mindset theory has

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implications for researchers to explore possible strategies in order to encourage a sceptical mindset of auditors (Griffith et.al.,2015; Griffith et.al.,2016; Nolder & Kadous, 2018). This dual conceptualization of professional scepticism relies on theories of mindset and attitudes promising to help researchers find answers to the many questions asked by regulators and practitioners about the definition and concept of scepticism and how scepticism can be improved (Griffith et.al.,2015; Griffith et.al,2016; Nolder & Kadous, 2018). Furthermore, studies on professional scepticism in general in its current development cover the area of examining the characteristics of auditors and clients, as well as characteristics of the external environment (Darsono et.al, 2023).

On the other hand, the latest studies on bibliometrics in accounting and auditing discusses some fields including: financial literacy (Idris et al., 2023), audit and technology (Lamboglia et al., 2020), audit quality (Ciger, 2020; Crucean, 2021), behavioural finance and behavioural accounting by Singh (2021), big data and artificial intelligence by Agustí & Perez (2022) and audit reporting by Mashayekhi et al., (2024). Therefore, this research aims to analyse by placing the right direction between professional scepticism and audit decisions by navigating it using a bibliometric view.

THEORETICAL BACKGROUND

Elaboration of the definition of audit decision, according to Arens et al. (2012), audit is the accumulation and evaluation of evidence about information to determine and report on the level of conformity between the information and predetermined criteria. More specifically, an audit decision, according to Johnson & Wiley (2019), is defined as an audit decision for carrying out an audit that uses professional judgment related to the application of relevant training, knowledge and experience as long as this is possessed by the auditor. Ashton & Willingham (1988), emphasized that audit decision is more of a decision making that requires tools to assist the auditor in collecting and evaluating evidence for the purpose of expressing an audit opinion or providing other audit services to other audit service clients. Another definition of audit decision is the stage of the audit process in the form of assessment and decision making which is part of the characterization of audit considered as the process of assessing the validity of a statement

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against specified criteria and reporting the findings to parties whose relevant interests (Solomon & Shield, 1995).

Professional scepticism, according to Hurtt (2010), is defined as an individual characteristic that originates from various dimensions. As an individual characteristic, professional scepticism can be both a relatively stable and enduring trait of an individual and also a temporary condition caused by situational variables. Meanwhile, Nelson (2009) indicates professional scepticism as an auditor's considerations and decisions that reflect a higher assessment of the risk that an assertion is inappropriate based on information which is useful for the auditor. A different point about professional scepticism was conveyed by O'Malley (2000) who defined it as a concept which is often discussed in professional standards, but with little precision. One perspective, introduced in SAS No. 1, is what the panel on audit effectiveness characterized as a neutral view of scepticism. The component of professional scepticism attitude captures the idea that scepticism is reflected in an evaluation activity carried out by the auditor, both cognitively and affectively, on management evidence and assertions (Nolder & Kadous, 2018). Historically, some auditing literature have viewed the auditor's confidence in responding to management's assertions and evidence as an aspect of scepticism (Nelson, 2009; Nelson & Tan, 2005).

The theory proposed in this research is behavioural decision theory which Einhorn & Hogarth (1981) positions it on a broad psychological segmentation, and emphasizes the importance of attention, memory, cognitive representation, conflict, learning, and feedback. At the same time, it is also positioned within interdependence and coordination of processes. This represents an important challenge for understanding complex decision making (Einhorn & Hogarth, 1981; Ghozali, 2020). The paradigm presented by Felix (1974) regarding behavioural decision theory, i.e.; first, about how this research identifies the structure of the probabilistic process. Second, assessments of probability distributions which have previously been published, and third, the payoff functions used above require extension and testing in auditors before the use of decision theory can be seriously considered. Meanwhile, Hunter(1986), considers that behaviour, particularly cognitive abilities, mainly cognitive skills, plays a significant role in the implementation of routine

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performance-based activities. This, according to Hunter (1986), is based on two theories connecting between cognitive abilities and learning and job performance, i.e. Thorndike's classic psychological theory with the theory of extreme behaviour (Hunter, 1986; Peterson & Thorndike, 1901; Thorndike, 1898, 1911).

Classical psychological theory emphasizes that performance in any form is highly dependent on learning. Current existing data suggest that all complex learning is predicted by general cognitive ability and performance in all complex tasks will be closely predicted by general cognitive (Peterson & Thorndike, 1901; Thorndike, 1898, 1911;Thorndike, 1985). In contrast, the extreme behavioural theory asserts that there will be no relationship between job knowledge tests and actual job performance (Hunter, 1986).

Behavioural decision theory and audit decisions have a close relationship because they both focus on how individuals or groups make decisions under conditions of uncertainty and complexity. Behavioural decision theory examines psychological factors that influence decision making, such as cognitive biases, risk perceptions, and individual preferences, all of which can influence audit decisions (Libby & Luft, 1993; Trotman & Yetton, 1985; Tversky & Kahneman, 1974).

Professional scepticism and behavioural decision theory correlate in the context of decision making and evaluation of information. There are studies and identification carried out by behavioural decision theory regarding the existence of biases and heuristics positions scepticism as one of the approaches which is considered important for observing and mitigating the risk of audit decisions caused by biases and heuristics (Gurevich et.al 2009; Kahneman, 2003; Tversky & Kahneman, 1974). Scepticism encourages auditors to professionally assess information, critically question the auditor's assumptions, and objectively seek audit evidence to support the auditor's audit decisions. Scepticism encourages critical evaluation of information, while behavioural decision theory highlights the cognitive processes and biases which can influence decision outcomes. Incorporating scepticism in the form of identifying audit objectives, analysing materiality levels, evaluating audit risks associated with audit planning and making appropriate audit opinions with the quality of considerations and decisions made will determine the quality of the auditor's work in the decision-making process; thus, auditors can make informed

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choices which are more rational and evidence-based (Bourgeois-Gironde, 2020; Nugrahanti & Jahja, 2018; Poulton, 1994; Putri et al., 2024; Saifudin & Januarti, 2023; Takemura, 2014, 2021; Watkins et al., 2004). On the other side, in the behavioural decision theory with new approach, few practical investigators who study confidence judgments appear to pay attention to these conflicting interpretations and their implications. It is not clear whether this should be blamed upon the arbitrary nature of the theoretical interpretations, or upon the failure of communication between the theorists and the investigators. The course of action followed in this research is to note the theoretical distinction between confidence in the correctness of single judgments and the proportion of judged right and wrong answers in a long run. It is assumed that the mismatch between the different measures is likely to be a small second order effect when it is compared with the sizes of the biases that are introduced by the different methods of responding (Bazerman, 2001; Poulton, 1994). Based on the explanation above, it can be concluded that behavioural decision theory has a strong relationship with the study of professional scepticism and audit decisions.

METHOD, DATA AND ANALYSIS

In this study, the approach used was bibliometric analysis. The basis for using bibliometric analysis is because in the current era, visual display through mapping tools is immensely necessary (Al Husaeni & Nandiyanto, 2022; Nandiyanto et al., 2020a, 2020b). Mapping tool which has been used to obtain overview results and various information regarding developments in the field of science and the performance of research carried out for mapping bibliometric data analysis is VOSViewer (Al Husaeni & Nandiyanto, 2022; Garcia, 2020). VOSViewer, based on Van Eck & Waltman, (2010) is a computer program developed to build and view bibliometric maps. VOSViewer, according to Shen & Wang (2020), offers text and contextual development functions which can be used to build and visualize correlations in an article or publication citation. Publication maps can be displayed in several ways and functions, such as mapping with a zooming, scrolling and searching system (Al Husaeni & Nandiyanto, 2022; Shen & Wang, 2020). Therefore, articles can be mapped in more detail. VOSViewer has several

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characteristics, including being able to map various types of bibliometric analysis, supporting several major bibliographic databases, ignoring the time dimension, limited to analysing small to medium amounts of data, intended for text processing functions, using layout and cluster techniques, applying overlays and density of visualization features (Al Husaeni & Nandiyanto, 2022).

Techniques for bibliometric analysis according to Donthu et al., (2021), are divided into two categories: (1) performance analysis, i.e. performance analysis can be found in most reviews, even in reviews that are not involved in science mapping, and (2) science mapping, i.e. analysis related to intellectual interactions and structural relationships among research constituents.

The analysis techniques for bibliometric analysis are visually shown in figure 1.

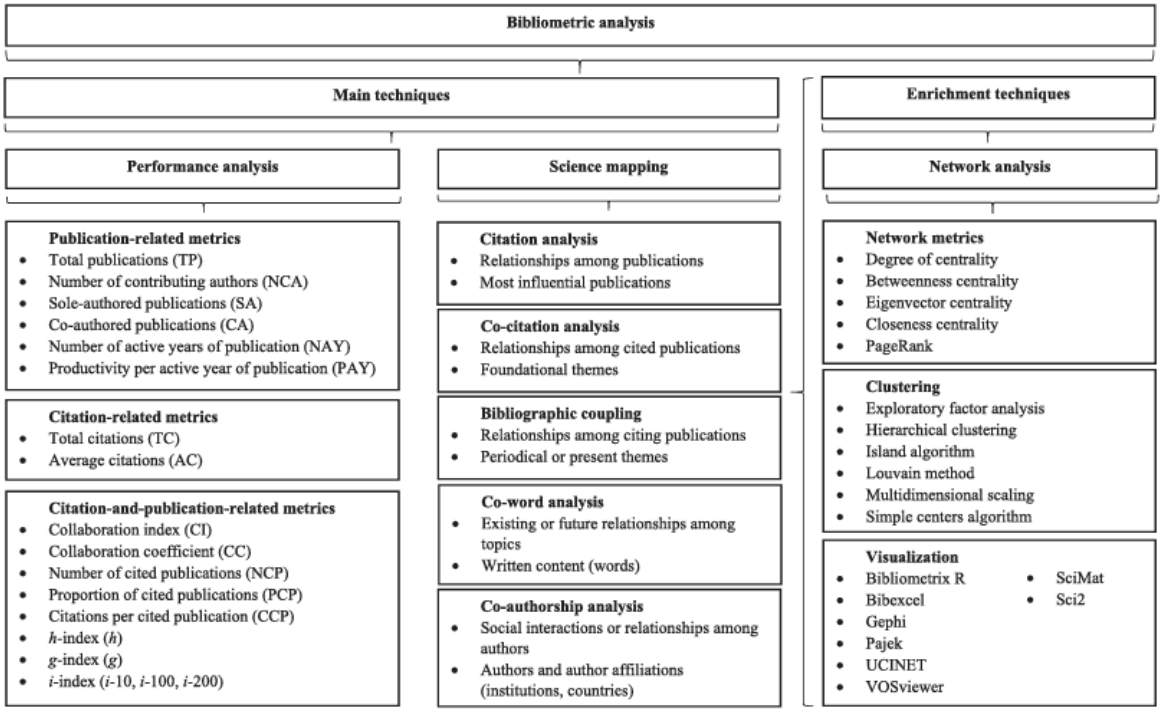


Figure 1. The bibliometric analysis toolbox.
Source: (Donthu et al., 2021)

The study navigates between professional scepticism and audit decisions using the Publish or Perish (PoP) application tool. The selected articles range in publication from 1970 to 2024 or 54 years. The literature search strategy uses the keywords

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"PROFESSIONAL SCEPTICISM" and "AUDIT DECISIONS". Visually, the Publish or Perish tool for searching articles with the theme of professional scepticism can be seen in Figure 2.

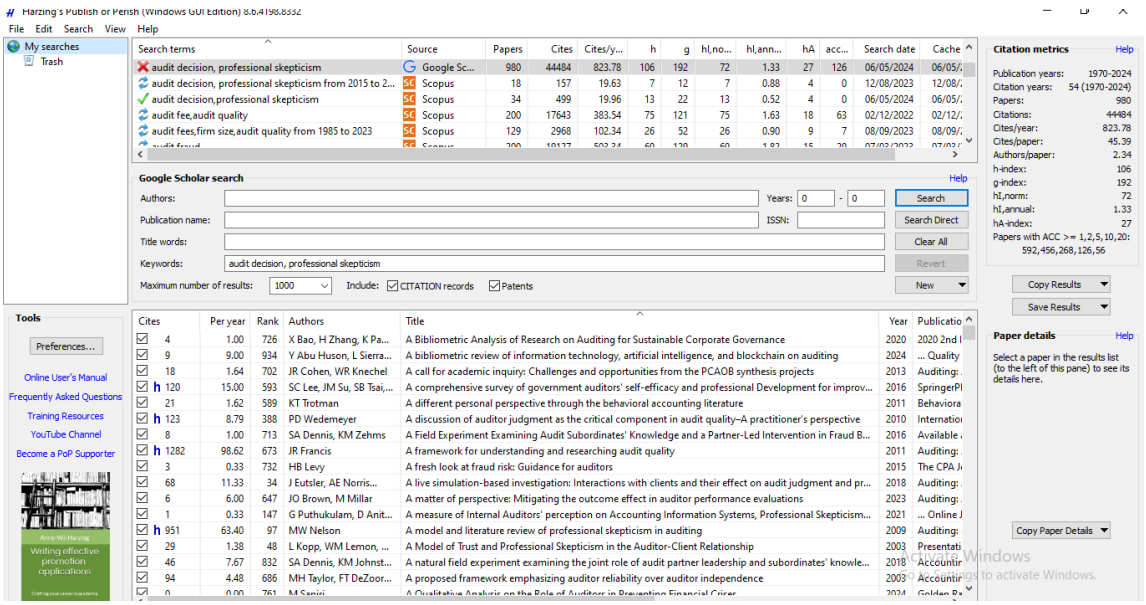


Figure 2. results of the search for the relationship between professional scepticism and audit decisions in 1970-2024)
Source: Publish or Perish, 2024

Based on the data from Publish or perish, 980 articles were obtained starting from 1970 to 2024 or 54 years. Then, a literature search was carried out which had been selected based on inclusion and exclusion criteria according to the needs used in this research. These criteria are as follows:

1. Inclusion criteria:
a) The language used is English
b) articles published in international journals between 1970 and 2024
c) the article explains about professional scepticism which has connected and is related to audit decisions
d) the article is available in full text form
2. Exclusion criteria:
a) the article is not available in full text form
b) the article does not explain professional scepticism which has connection and is related to audit decisions.
c) the article lacks relevant research methods
d) The language used is not English

These inclusion and exclusion criteria are actualized in the Figure 3 as follows.

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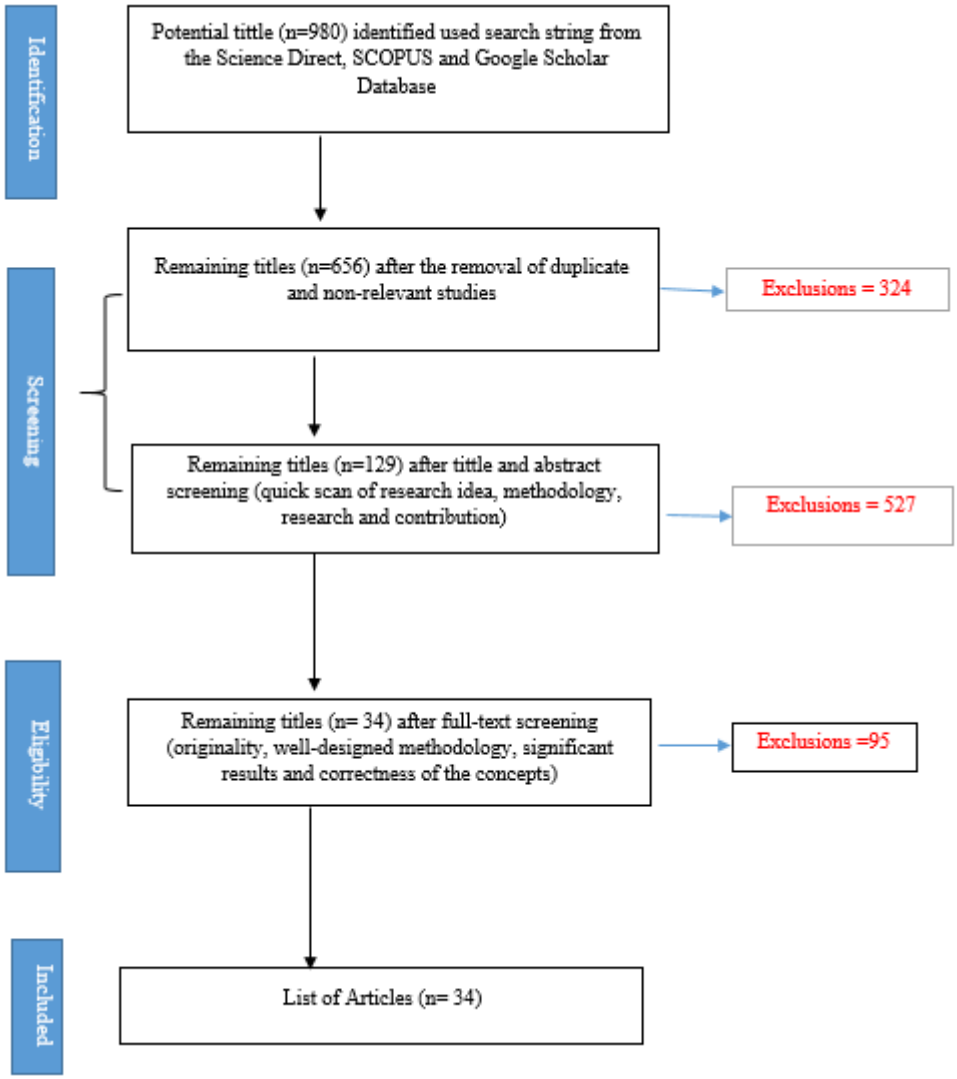


Figure 3. Diagram of Inclusions and Exclusions PRISMA based (Page et al., 2021)
Source: personalized data processed, 2024

As seen in Figure 3 above, it can be explained that the identification resulted in 980 articles successfully collected. Then, selection was carried out by sorting the data, i.e. checking the title, to avoid duplicate titles and articles whose studies were not relevant, 656 relevant articles were obtained.

RESULTS

The results of the research navigating between professional scepticism and audit decisions are shown in figure 4.

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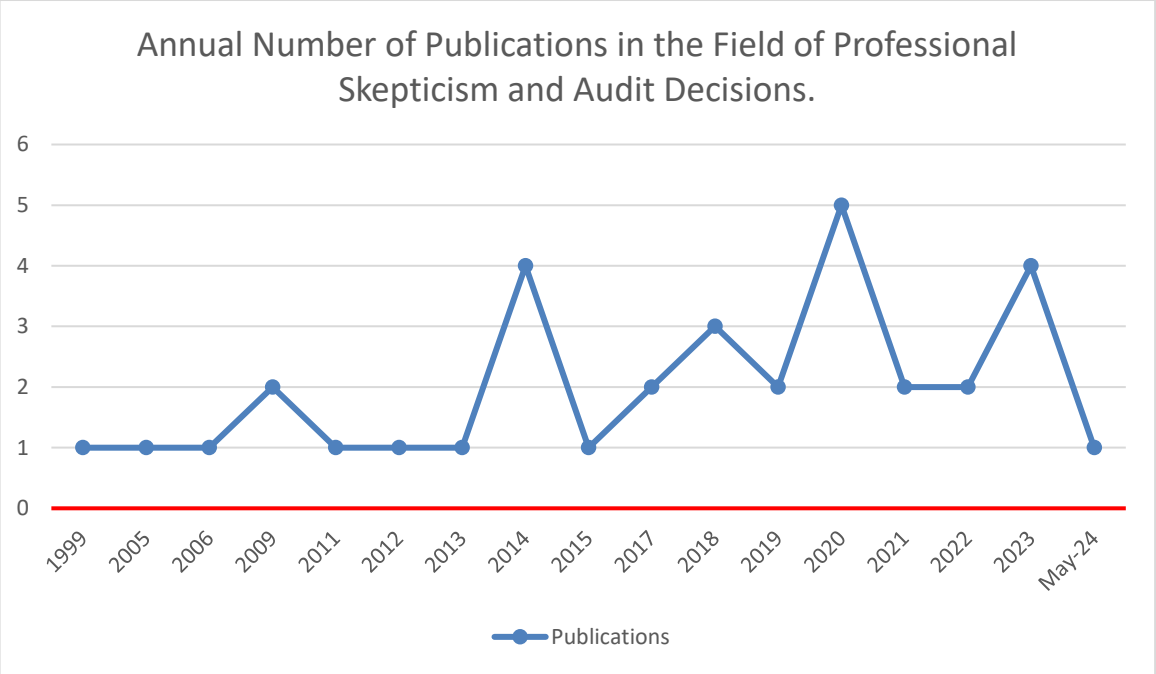


Figure 4. Annual number of publications in the field of professional scepticism and audit decisions.
Source: personalized data processed, 2024

Based on Figure 4, it can be explained that the highest number of publications was in 2020 with 5 publications, followed by 2014 and 2023 with 4 publications each, and in 2018 with 3 publications. The remainder from 1999 to 2017, and 2024 there is 1 publication each. In addition, the exception is for 2024, the publication obtained is until May 2024.

The research methodology of the 34 selected articles is visually shown in Figure 5.

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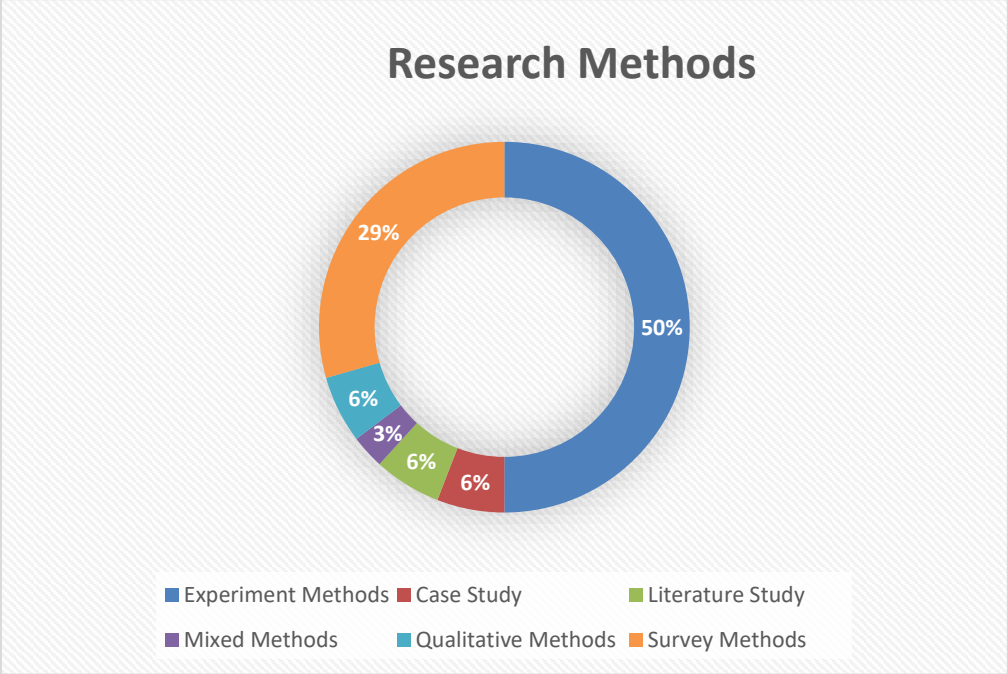


Figure 5. Research Methods
Source: personalized data processed, 2024

Figure 5 above illustrates that of the 34 selected articles, 17 articles or 50 percent used the experimental method and followed by the survey method with 10 articles or 29 percent.

Of the 34 selected articles, the highest number of citations for a single article was 270 (Quadackers et al., 2014), seen in the following Figure 6.

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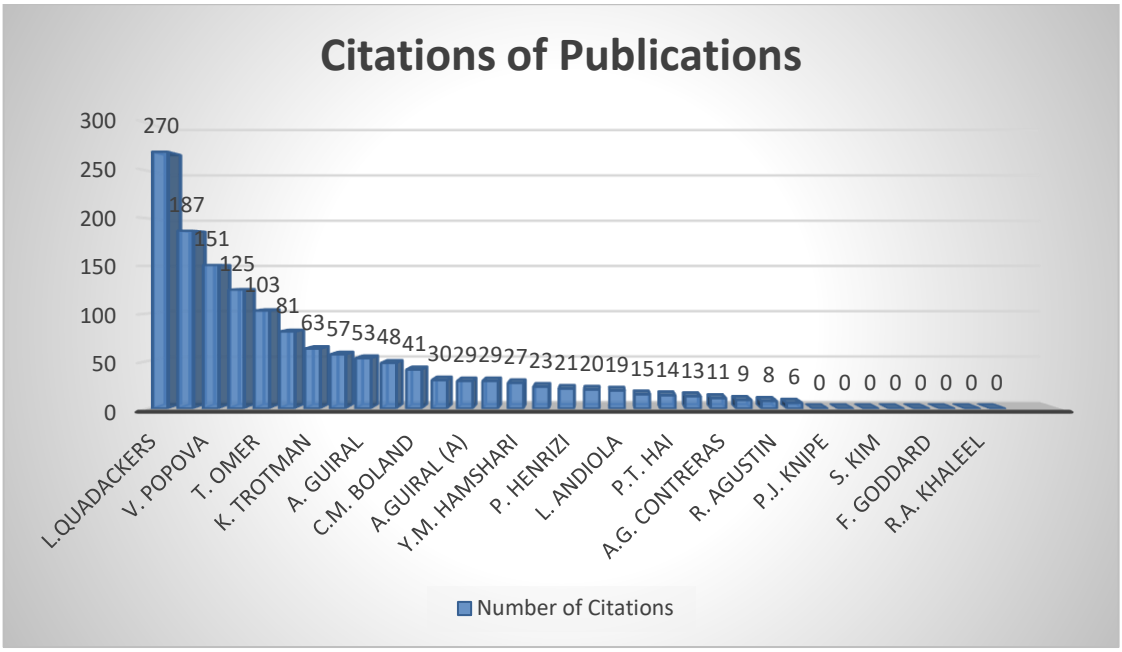


Figure 6. number of citations
Sources: personalized data processed, 2024

Figure 6 shows that the top five most cited articles are from Quadackers et al., (2014) with 270 citations, followed by Gramling, (1999) with 187 citations, Popova (2013) with 151 citations. As additional information, the citation data collection was carried out on May 12, 2024.

The visualisation of journals which publish the most on the theme of professional scepticism with audit decisions as illustrated in Figure 7.

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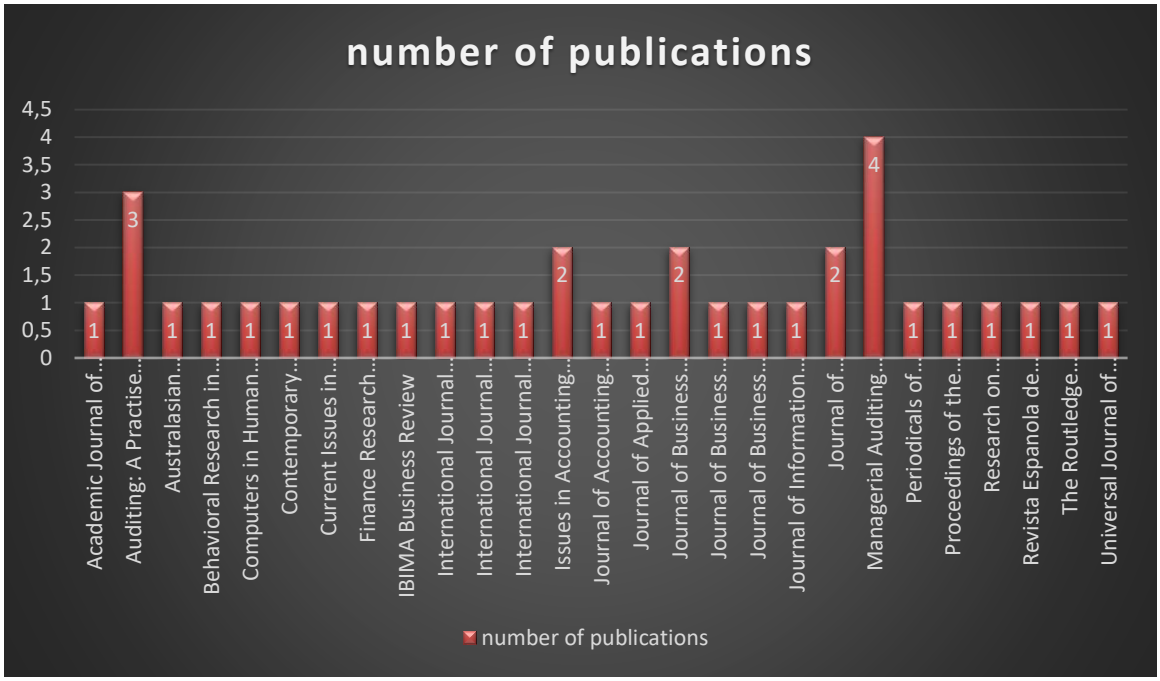


Figure 7. Number of publications
Source: personalized data processed, 2024

Figure 7 details the top five most journals are the Managerial Auditing Journal with 4 articles, followed by the Auditing Journal: A Practice & Theory with 3 articles.

The Literature Review of selected articles is listed in Table 1 as follows.

Table 1: Literature Review

No.	Authors & years	Tittle of Paper	Name of journals	Total citations*)	Contribution to subjects
1.	(Quadackers et al., 2014)	Auditors' Professional Scepticism: Neutrality versus Presumptive Doubt	Contemporary Accounting Research	270	there is a relationship between the auditor's sceptical perspective and auditor sceptical judgements and decisions across client risk settings
2	(Graming, 1999)	External auditors' reliance on work performed by internal auditors: The influence of fee pressure on this reliance decision	Auditing: A Journal of Practice & Theory	187	It is proven that the auditor's decision has an effect on client fee pressure and favourability of audit partner choice

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3.	(Popova, 2013)	Exploration of scepticisms, client-specific experiences, and audit judgments	Managerial Auditing Journal	151	The results show that initial expectations are driven primarily by client experience except when no one was present (then driven by trait), but experience had a greater influence on low trait sceptics.
4.	(Kerler & Killough, 2009)	The effects of satisfaction with a client's management during a prior audit engagement, trust, and moral reasoning on auditors' perceived risk of management fraud	Journal of Business Ethics	125	The results show that auditors' satisfaction with clients affects their trust in clients
5.	(Omer et al., 2018)	The Impact of Religion on the Going Concern Reporting Decisions of Local Audit Offices	Journal of Business Ethics	103	Our results show that audit practices that are highly religious are more likely to issue a going concern audit opinion,
6.	(Rodgers et al., 2017)	Knowledge management: The effect of knowledge transfer on professional scepticisms in audit engagement planning	Computers in Human Behaviour	81	The results of this study suggest that differences between expert and novice auditors strengthens support for the role of knowledge and expertise in enhancing scepticisms in engagement planning.
7.	(K. Trotman, 2014)	Judgement and decision making	The Routledge Companion to Auditing	63	Evaluating the quality of auditor judgements, issues addressed include the accuracy of auditor judgements, the degree of consensus among auditors, the consistency of auditor judgements over time, and the degree of bias in auditor judgements due to the use of heuristics

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8.	(Pinsker et al., 2009)	The influence of roles, advocacy, and adaptation to the accounting decision environment	Behavioural Research in Accounting	57	research results prove that training in specific professional roles such as tax and audit affects advocacy attitudes, and how environmental elements interact with these attitudes to influence accountants' judgement.
9.	(Guiral et al., 2015)	Can expertise mitigate auditors' unintentional biases?	Journal of International Accounting, Auditing and Taxation	53	The research findings suggest that although problem-solving ability strengthens auditors' public watchdog function, task-specific experience reduces their fear of provoking self-fulfilling prophecy effects
10.	(Samagaio & Felício, 2022)	The influence of the auditor's personality in audit quality	Journal of Business Research	48	This study successfully analysed the impact of auditor personality on audit quality, using mixed methods.
11.	(Boland et al., 2019)	Evidence of the relationship between PCAOB inspection outcomes and the use of structured audit technologies	Auditing: A Journal of Practice & Theory	41	research has been able to find an association between PCAOB examination results and auditors' use SAT.
12.	(Guiral et al., 2014)	Audit report information content and the provision of non-audit services: Evidence from Spanish lending decisions	Journal of International Accounting, Auditing and Taxation	30	We find that a qualified going concern audit report is interpreted as a major warning signal.

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13.	(Guiral & Esteo, 2006)	Are Spanish auditors sceptical in going concern evaluations?	Managerial Auditing Journal	29	It was found that there is an order effect, whereby auditors who receive favourable evidence on their client's.
14.	(Gong et al., 2014)	Elevating professional scepticisms an exploratory study into the impact of accountability pressure and knowledge of the superior's preferences	Managerial Auditing Journal	29	It was found that greater application of self-criticism was associated with the presence of perceived accountability pressures, but only if the supervisor's preferences were unknown.
15.	(Hamshari et al., 2021)	The Relationship of Professional Scepticism to the Risks of Auditing and Internal Control, and the Discovery of Fraud and Core Errors in the Financial Statements in Jordan	Academic Journal of Interdisciplinary Studies	27	This study found that financial auditors' ability to detect audit risk increases when they use professional scepticism and endeavour to apply it efficiently.
16.	(Habib et al., 2019)	Audit partner busyness and cost of equity capital	International Journal of Auditing	23	Researchers argue that audit partner busyness negatively affects the auditor's accuracy work process and reduces professional scepticism, resulting in higher information risk and, therefore, increased cost of equity capital.
17.	(Henrizi et al., 2020)	Anchoring and adjustment effects on audit judgments: experimental evidence from Switzerland	Journal of Applied Accounting Research	21	

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18.	(Nguyen & Kohda, 2017)	Toward a model of wisdom determinants in the auditing profession	Proceedings of the Annual Hawaii International Conference on System Sciences	20	The findings from the literature review along with the empirical analysis of a case study revealed that prudent decision-making wisdom in auditing is an integration of the three-E virtues: epistemic
19.	(Andiola et al., 2018)	Sprandel, Inc.: Electronic workpapers, audit documentation, and closing review notes in the audit of accounts receivable	Issues in Accounting Education	19	Working paper review is an important quality control mechanism in an audit environment.
20.	(Durkin et al., 2020)	Can simple metaphors be used as decision aids to promote professional scepticism?	Journal of Information Systems	15	Research results show that metaphorical priming can be a powerful and efficient tool for promoting high quality and professionally sceptical judgement.
21.	(Hai et al., 2020)	Research factors affecting professional scepticism and audit quality: Evidence in Vietnam	International Journal of Innovation, Creativity and Change	14	The results showed that: professional scepticism is strongly influenced by the nature, timing and workload.
22.	(Deliu, 2021)	Elevating professional reasoning in auditing. Psycho-professional factors affecting auditor's professional judgement and scepticism	IBIMA Business Review	13	that the embodiment of a sceptical and objective scepticism and objectivity contribute to the exercise of control over decisions taken and results obtained.

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23.	(Contreras & Angulo, 2005)	Audit report and risk analysts' behaviour: The beliefs' revision model	*Revista Espanola de Financiacion y Contabilidad*	11	The results, following an experimental design with analysts from Spain's dominant financial institutions, are consistent with the hypothesis that audit reports are only relevant if they contain some contradiction with other financial news received from the client.
24.	(Parluhutan et al., 2022)	The Influence of Auditor Ethics, Auditor Motivation, Locus of Control on Audit Quality: Role of Professional Scepticism	Universal Journal of Accounting and Finance	9	The findings of this study indicate that auditor ethics, motivation, and locus of control have an influence on audit quality. while auditor professional scepticism does not.
25.	(Agustin, 2020)	Professional scepticism and the ability of auditor in assessing audit risk	International Journal of Scientific and Technology Research	8	The research found that the auditor's ability when assessing audit risk during the audit process is related to the ability of professional scepticism.
26.	(Brown & Millar, 2023)	A Matter of Perspective: Mitigating the Outcome Effect in Auditor Performance Evaluations	Auditing: A Journal of Practice & Theory	6	researchers provided evidence confirming that perspective taking successfully eliminates the outcome penalty for sceptical behaviour .
27.	(Sujana & Dharmawan, 2023)	Audit Quality Improvement and the Role of Risk: Audit as a Moderator	Australasian Accounting, Business and Finance Journal	No Data (ND)	The findings show that professional scepticism has an impact on audit quality. In addition, audit planning affects audit quality.

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28.	(Goddard & Schmidt, 2020)	Attributes influencing clients' auditor choices: The expectation gaps between auditors and board members	Current Issues in Auditing	No Data (ND)	The results show that board members consider low audit fees, as well as a good relationship with the audit partner, less important than the audit partners and managers expect. less important than audit partners and managers expect.
29.	(Yao et al., 2023)	The effect of key audit matters reviewing on loan approval decisions?	Finance Research Letters	No Data (ND)	The results of this study offer new insights and research perspectives for KAM while expanding the literature on the factors that influence loan approval by lenders.
30.	(Knipe & Bitter, 2011)	The central Florida emphysema foundation audit: A case study of personal and professional responsibility	Issues in Accounting Education	No Data (ND)	Applying their knowledge of GAAP, auditing standards and the AICPA (2010) Code of Professional Conduct, students will gain a better understanding of the types of situations that arise in practice and will face the personal and professional choices that auditors must make.
31.	(Hillison & Vittori, 2024)	How Does Management Voluntary Disclosure Behaviour Influence Auditors' Judgments?	Journal of Accounting Research	No Data (ND)	Our results suggest that managers' decision to disclose, rather than the disclosure content itself, leads to increased auditor scepticism.
32.	(Kim et al., 2018)	Audit fees via an indirect payment channel and professional scepticism	Managerial Auditing Journal	No Data (ND)	The results provide evidence that indirect payment of audit fees is positively related to professional scepticism. professional scepticism

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33.	(Khaleel et al., 2023)	Long-term effect of economic status on auditors' professional scepticism	Periodicals of Engineering and Natural Sciences	No Data (ND)	The results of the study revealed that auditors' decision-making and judgement are significantly affected by the economic climate at the start of their engagement.
34.	(Farag & Elias, 2012)	The impact of accounting students' professional scepticism on their ethical perception of earnings management	Research on Professional Responsibility and Ethics in Accounting	No Data (ND)	The results showed that more sceptical students viewed earnings management actions as more unethical than less sceptical students.

*) footnote/explanation: stating that the absence of citation figures is due to the article not being indexed—or not yet being indexed—on Google Scholar at the time the data was collected on 12 May 2024.

In accordance with Table 1, it can be explained that the navigation between professional scepticism and audit decisions in general has entered multi-disciplinary dynamics ranging from psychology, neuroscience, technology, governance and so on.

Network Analysis using VOSViewer

VOSViewer analysis was carried out on the 980 articles obtained, and the visualization results of these articles can be seen in the following Figure 8.

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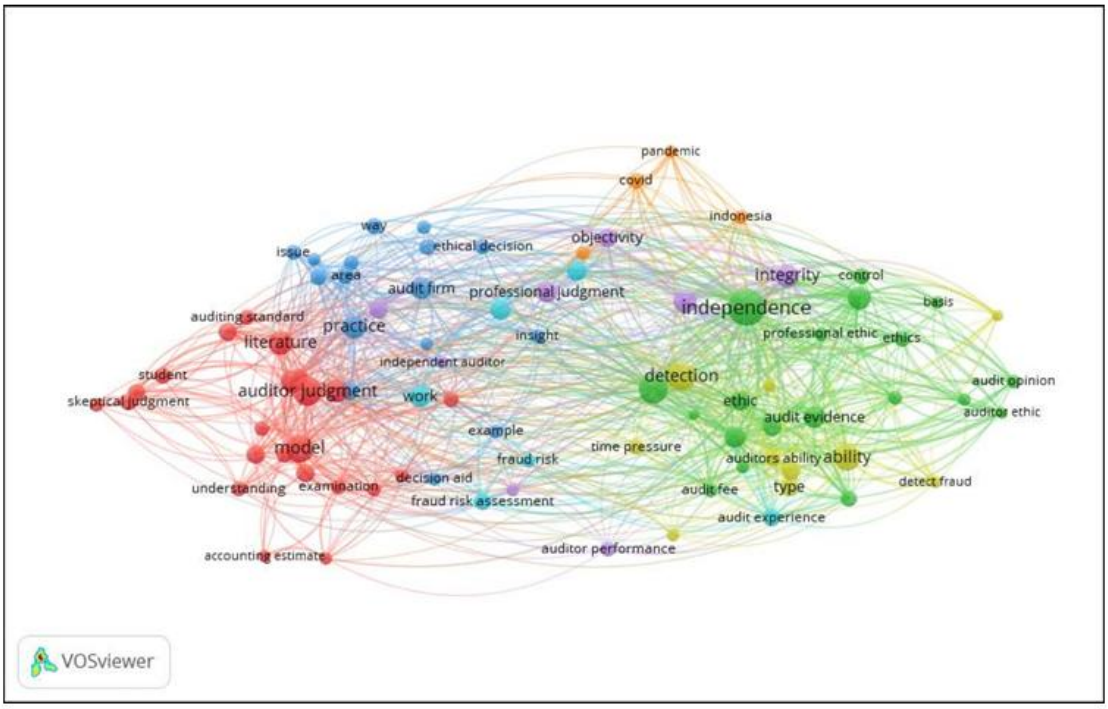


Figure 8. VOSViewer analysis on 980 articles
Source: VOSViewer, 2024

Figure 8 illustrates there are 7 clusters in the theme of professional scepticism with audit decisions, i.e. cluster 1 in red dominated by keywords from the title and abstract which include auditor judgment, sceptical judgment, literature and accounting estimate. Cluster 2 in green is dominated by keywords from the title and abstract that include independence, competence, audit opinion, auditor ethics, audit fee, audit evidence, and expertise. The 3 dark blue clusters are dominated by keywords from the title and abstract which include auditor decision, decision aid, practice, audit firm. Cluster 4 in yellow is dominated by keywords from the title and abstract including ability, detection, detect fraud and time pressure. The 5 purple clusters are dominated by keywords from the title and abstract covering independent auditor, audit performance, professional judgment, objectivity, and integrity. Furthermore, cluster 6 in light blue is dominated by keywords from the title and abstract that mention fraud risk assessment, fraud risk, and work. And finally, cluster 7 in orange contains keywords from the title and abstract mentioning pandemic, covid and Indonesia.

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Specifically, after filtering all these keywords by focusing on keyword items about professional scepticism and audit decisions, this resulted in the visual image as shown in Figure 9.

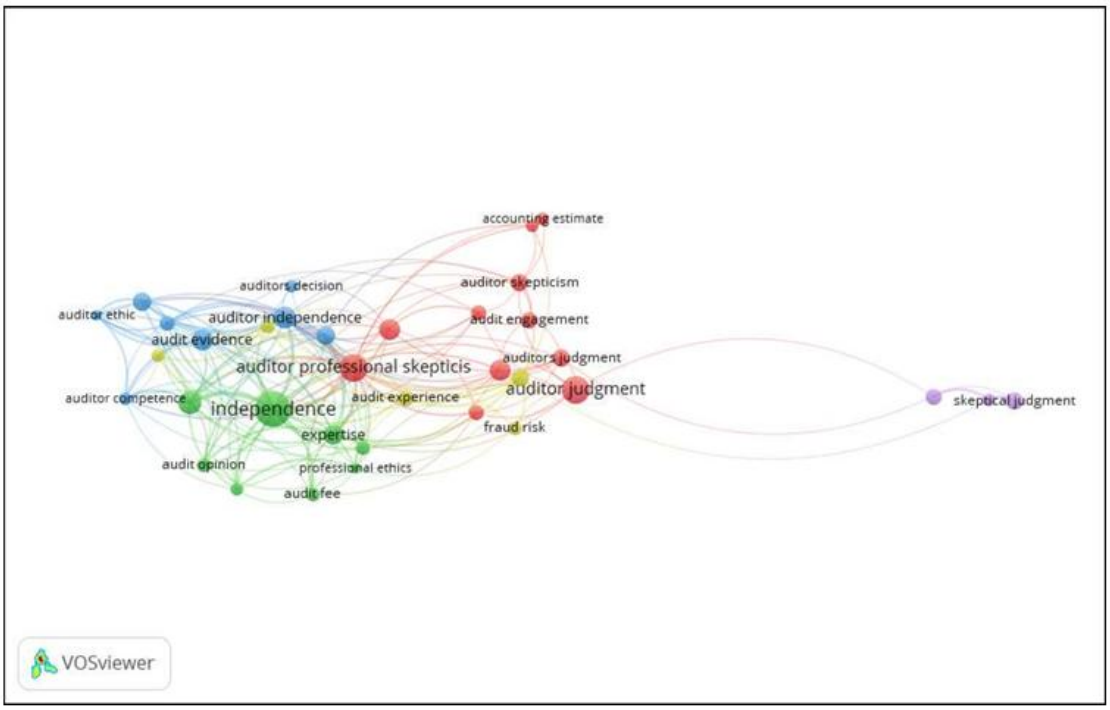


Figure 9. Specific figure of navigating between professional scepticism and audit decision
Source: VOSViewer, 2024

Based on Figure 9, it can be seen that cluster 1 red is hugely dominated by the keywords from title and abstract which mention 'professional scepticism and auditor judgment'. Cluster 2 green is dominated by the keywords 'independence, expertise'. Cluster 3 blue contains keywords such as 'auditor decision and auditor independence'. Furthermore, if you look closely at the development trend, the visualization is as described in the following figure 10.

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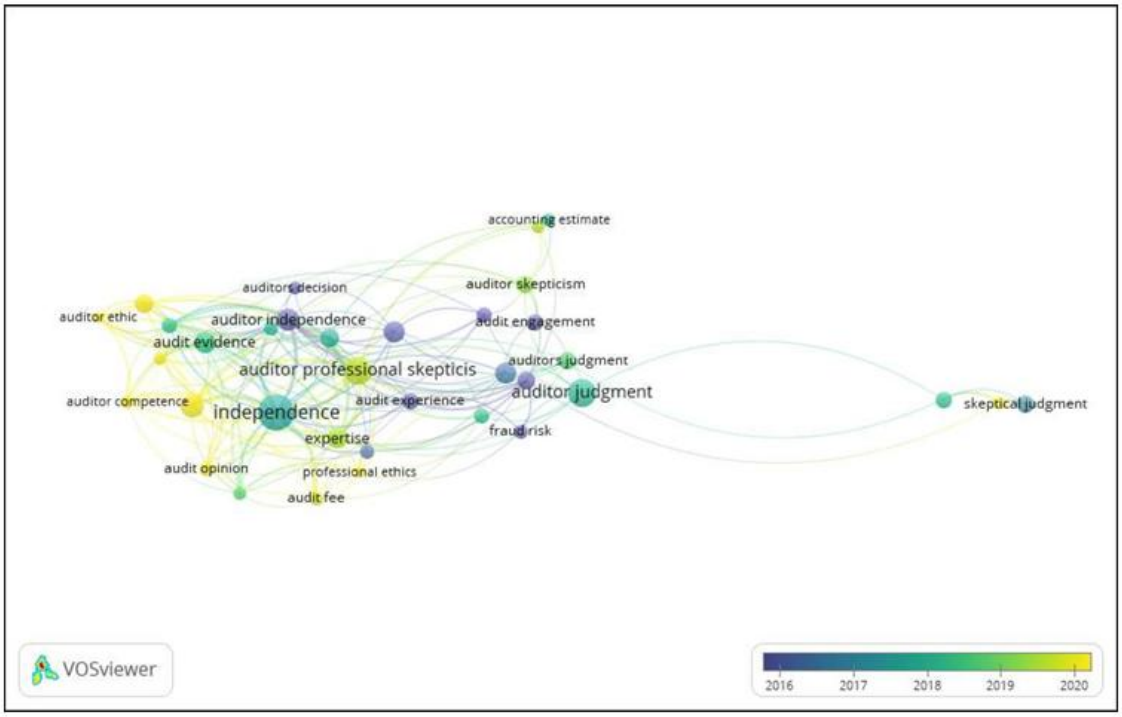


Figure 10. trend of studies on professional scepticism and audit decision
Source: VOSViewer

As illustrated in Figure 10, the future research trend can be predicted, which is actualized in the use of colour, i.e. the lighter the colour, the more research trend will present in the future. Clearly, it can be stated that future research trends include professional scepticism in relation to auditor competence, auditor ethics, audit opinion, professional ethics, and audit fees.

Detailed navigation between professional scepticism and audit decisions is elaborated in the stressing figure in Figure 11 as follows.

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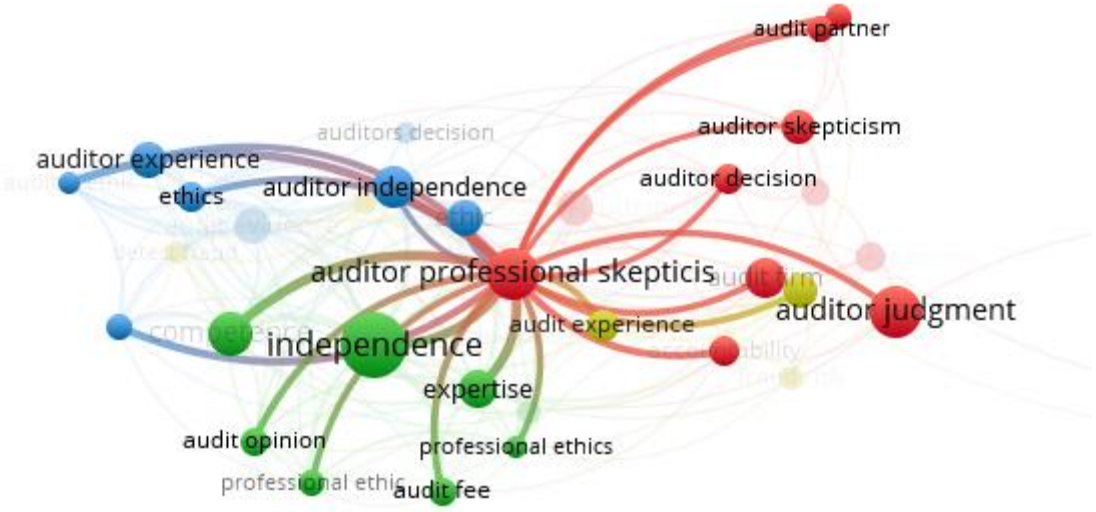


Figure 11. Stressing networking between professional judgment
Source: VOSViewer, 2024

Figure 11 clearly shows that a professional auditor's sceptical attitude is closely linked to the auditor's decisions and judgements. Figure 11 also, shows a very strong co-occurrence (co-word analysis) between 'auditor professional scepticism', 'auditor decision' and 'auditor judgement', indicating that these three topics are most frequently researched and discussed together in the existing literature.

DISCUSSIONS

The scientometric findings of this study offer a critical synthesis of how research on auditor professional skepticism and audit decisions has evolved over more than five decades. The strong reliance on experimental methods (50%) and survey designs (29%) among the core 34 articles indicates that research in this domain operates predominantly within behavioral and cognitive paradigms rather than archival market-based analyses. This methodological distribution reflects the nature of skepticism as both an enduring individual trait and a situational state best examined through controlled behavioral scenarios (Hurtt, 2010; Nelson, 2009; Quadackers et al., 2014). From a theoretical standpoint, the network clusters (Figures 8–11) directly align with Behavioral Decision Theory (Einhorn & Hogarth, 1981) and Mindset/Attitude Theory (Nolder & Kadous, 2018). Under Behavioral Decision Theory, audit decision-making is characterized as a boundedly rational process subject to cognitive heuristics, memory limitations, and

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environmental friction (Bazerman, 2001; Tversky & Kahneman, 1974). Clusters 2 and 5 demonstrate that foundational attributes such as independence, competence, and professional ethics serve as critical antecedent structures. However, when auditors encounter operational pressures—such as severe fee pressure (Gramling, 1999), partner busyness (Habib et al., 2019), or workload constraints (Hai et al., 2020). Their capacity to maintain presumptive doubt is compromised, frequently impacting final audit decisions. A crucial distinction highlighted by this review is the difference between bibliometric co-occurrence associations and empirical relationships. The VOSviewer network density (Figure 11) demonstrates high co-occurrence between "auditor professional skepticism", "auditor judgment", and "auditor decision". However, this topical co-occurrence signifies thematic research concentration rather than empirical correlation or causality. Empirically, while studies such as Quadackers et al., (2014) and Popova, (2013) confirm that skeptical perspectives significantly influence audit decisions across client risk settings, others (e.g.,Parluhutan et al., 2022) observe that skepticism does not uniformly moderate audit quality across all jurisdictions.

Based on these findings, three key research gaps emerge for future inquiry: 1) technological mediation gap: while recent literature explores structured audit technologies(Boland et al., 2019) and AI tools (Saifudin et al., 2025a), empirical evidence remains limited regarding whether automated decision aids enhance skeptical inquiry or induce algorithmic passivity and cognitive over-reliance, 2) contextual and environmental dynamics gap: Peripheral developments, such as remote auditing post-pandemic (Cluster 7) and electronic workpaper reviews (Andiola et al., 2018), require deeper empirical investigation concerning their impact on skeptical judgment in emerging economies, 3) multi-level behavioral integration: existing research disproportionately focuses on individual auditor traits. Future studies should adopt multi-level frameworks incorporating audit firm culture (Alberti et al., 2022), partner-level oversight (Gong et al., 2014), and client governance dynamics to holistically evaluate audit decision quality.

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CONCLUSIONS

This study provides a comprehensive scientometric mapping of 54 years (1970–2024) of research navigating professional skepticism and audit decisions. From a theoretical perspective, this research enriches Behavioral Decision Theory (BDT) and Mindset/Attitude Theory by demonstrating how auditor cognitive processing evolves from traditional normative frameworks toward complex behavioral and situational interactions. By identifying seven distinct thematic clusters, this study establishes a structural framework that links core professional attributes (such as independence and ethics) to complex audit decision outcomes. Practically, these findings offer evidence-based insights for audit firm leadership and regulators (e.g., PCAOB, IFAC) to design structured decision aids, manage time/fee pressure constraints, and reform professional development programs to cultivate a skeptical mindset without inducing audit fatigue. Methodologically, this study acknowledges several limitations. First, the literature corpus was restricted to Scopus and Google Scholar indexed articles via Publish or Perish, which may omit relevant studies archived in Web of Science or other specialized databases. Second, while VOSviewer provides robust co-occurrence density analysis, bibliometric mapping inherently captures topical associations rather than direct empirical causality. Future research should address these constraints by integrating multi-database sources and employing complementary analytical platforms (e.g., Bibliometrix R-package or SciMAT). Furthermore, empirical researchers are encouraged to investigate how emerging technologies, such as Artificial Intelligence (AI) and Structured Audit Technologies (SAT), interact with auditor skepticism and decision quality across diverse institutional settings.

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