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BIG DATA ADOPTION: HOW WILL IT IMPACT GOVERNMENT AUDIT QUALITY?

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Abstract**:** *One of the challenges and issues in auditing activity is managing large amounts of data and complex issues. Technological advancements have the potential to revolutionize the audit process and improve its quality. Nonetheless, significant challenges lie in limited understanding of technology's role among auditors. As a result, many auditors still rely on manual methods, that are inefficient and prone to errors. The purpose of this study is to identify the effect of utilizing Big Data adoption in government audit success. This research employed a System Literature Review (SLR) by collecting 61 articles and 6 international proceedings on Big Data adoption of auditing in Scopus, Emerald, and SINTA. This finding indicates that Big Data is able to improve audit quality. In other words, the strategic implementation of Big Data in auditing process can drive audit success. This research provides an overview for auditors to consider Big Data adoption. By utilizing Big Data, auditors can obtain the technology's benefits to elevate the quality of government audits.*

Keywords: *Audit Quality, Audit Success, Big Data Adoption, SLR*

INTRODUCTION

Government audit is a systematic and independent examination process of operational, financial, and program activities carried out by government entities. Under Agency Theory, government entities (agents) are entrusted by the public (principals) to manage and allocate resources effectively (Siahaan et al. 2024). Due to possible conflicts of interest and information imbalances between the government and the public, government audits is crucial to guarantee that the government operates in a manner that serves the public interest. These audits aim to evaluate the extent to which the relevant entities comply with applicable laws, regulations, policies and procedures, as well as to ensure that public funds are used in an efficient and effective manner. Moreover, this audit has a significant role in maintaining transparency and accountability in the management of state finances, as well as identifying and preventing potential irregularities (Aboud & Robinson 2022; Putra et al. 2022).

However, in its application, there are still several problems that hinder the achievement of audit success, especially government audits as revealed by BPK. It mentioned that there were 9.261 findings regarding internal control systems, non-compliance, potential losses, inefficiency, and ineffectiveness (3E) with an all value of IDR 18.19 trillion (BPK 2023). Thus, Big

Data can be used to analyze and identify audit findings and opinions. Based on the results of the examination of financial statements, it is known that the implementation and integrity of state finances carried out by the central government, local governments, State-owned Enterprises or Regional-owned Enterprises (BUMN/BUMD), and a number of other institutions still require more improvement. Therefore, it is necessary to enhance the quality by utilizing the latest technology to open up wider access space and improve these weaknesses (Mertzanis et al. 2020).

Dough Laney introduced the concept of Big Data in 2001, emphasizing three main characteristics. These three characteristics are velocity, volume, and variety (Kitchin & McArdle 2016). In line with (Zikopoulos et al. 2012), Big Data is a process that cannot be processed or analyzed manually. It has the ability to integrate various data sources, from financial reports to digital transactions. This allows auditors to get a more comprehensive and holistic picture (Merhi & Bregu 2020). This process not only speeds up data processing time, but also increases accuracy and precision in judgment.

The implementation of Big Data is emerging as a prominent example in the field of auditing. In this field, Big Data offers great potential to improve efficiency, accuracy, and relevance (Liu 2023). Moreover, in having Big Data, it will certainly become a challenge for auditors. Nonetheless, the system plays a key role in ensuring accountability and transparency in public financial management (Lazarevska et al. 2022). This huge responsibility can be a challenge for the public sector in managing funds (Mihret & Woldeyohannis 2008). In fact, the challenges in auditing are increasingly complex and complicated. Not only that, auditors are also required to maintain the quality of financial statements (Januarsi et al. 2016). This reason drives the need for Big Data adoption in audit practice.

The use of Big Data in government auditing not only involves the use of advanced technology with large databases, but also drives changes in the way auditors interact with data and make audit decisions (Zhu et al. 2024). Through the application of trend analytics, algorithmic learning, and data extraction, auditors are able to analyze data more efficiently, assist in the detection of fraud, improve the accuracy of estimates, as well as optimize audit planning and risk management (Sihem et al. 2023). For example, it can predict spending or revenue behavior based on previous government financial data by identifying potential risks or opportunities for greater efficiency (Caramés et al. 2019). The adoption of Big Data can also be used to forecast audit risks, automatically categorize transactions, and find patterns that are not visible manually, thereby increasing audit efficiency and relevance. By integrating these approaches, more effective audit planning can be done by auditors (Rezaee et al. 2017).

The utilization of Big Data in government audits provides benefits in improving efficiency. Big Data analytics enables fast and in-depth data processing to detect suspicious or unusual patterns or trends (Santis & D'Onza 2021). This will increase the accuracy of estimates (Si 2022). Auditors can utilize Big Data to estimate the financial performance and future liabilities of entities more accurately (Gu et al. 2023). In this occasion, accuracy can optimize audit planning and risk by utilizing historical and real time data (Haddara et al. 2018). It provides more reliable information to stakeholders, such as governments and the general public.

Research conducted by Rahman & Ziru (2023) revealed that the implementation of digital tools, such as Big Data, can increase expertise in the audit profession. In addition, Bonsu et al. (2023) also discovered that utilizing Big Data can enhance the accuracy of financial statements. Big Data is a sophisticated innovation, especially in the era of the industrial revolution 4.0, which has the potential to be a solution for various challenges in internal audit

(Al-Khasawneh & Al-Khasawneh 2023). These findings sufficiently demonstrate that Big Data, with its inherent advantages, can significantly improve the efficiency and effectiveness of the process more efficient and effective.

Nevertheless, the adoption of Big Data audit conducted by Grima et al. (2023) gave different results. The study revealed that the application of Big Data had an effect, but did not achieve statistically significant results on audit effectiveness. The insignificant results raise questions regarding the implementation in the audit process. Some potential reasons why the results may differ include the lack of auditor skills and knowledge in utilizing Big Data effectively (BrownLiburd et al. 2015). It also indicates that the of Big Data application provides unique and differentiated impacts.

Abundant literature on the adoption of Big Data in private sector audits are often found, but studies examining its implementation in government audits are limited. In this context, this study aims to identify the impact of Big Data adoption on government audit by asking the question "How is the impact of Big Data adoption on government audit quality?" In this study, the researchers reviewed 67 relevant articles to ensure comprehensive coverage. A total of 65 articles from international databases, such as Scopus and Emerald provide an important global perspective in comparing the application of Big Data of government auditing in different countries.

In addition, there were two articles from SINTA 3, which specifically provided a local perspective from Indonesia. The reason of selecting articles from SINTA is because they focus on the context of government auditing in Indonesia, which enriches the analysis with insights from the local audit environment. Thus, the use of articles from various sources both local (SINTA) and international (Scopus and Emerald) is expected to strengthen the analysis and relevance of the proposed model, providing practical guidance for government auditors in integrating Big Data into their audit practices. This research will not only address the existing knowledge gap in this field, but can also significantly contribute to the future effectiveness and accountability of government audits.

METHOD

The research methods used in this literature review were based on the approaches employed by Amri & Aryani (2021) and Fatah & Aryani (2023). The researchers collected various impact factors of Big Data usage affecting audit success and analyzed the same audit quality impact factors as Malakoute & Soumaya (2023). Besides, the researchers used research from Malakoute & Soumaya (2023) because of focusing on factors that affect audit quality. The study found 48 factors that affect audit quality. Furthermore, these factors are associated with articles related to audit success. Several literature reviews on Big Data and auditing were collected from Scopus, Emerald, and SINTA databases, including articles and proceedings, limiting the publication years from 2011 to 2024 (Susanto et al. 2022). The reason for choosing these three publishers as the main source is because of their reputation as comprehensive and reliable databases in the field of scientific research. Scopus and Emerald provide access to high-quality, peer-reviewed international journals. It also ensures that the information obtained is up-to-date and relevant (Thottoli 2022). SINTA (Science and Technology Index) is an online research information platform created by the Ministry of Research, Technology, and Higher Education of Indonesia. SINTA indexes Indonesian national journals that are qualified and recognized by the academic community. The year 2011 was chosen as it marked the first study to provide a comprehensive conceptual framework for audit quality with a broad scope.

This research simplifies the determinants proposed by Malakoute & Soumaya (2023) and their impact on the implementation of government audits. The researchers searched for articles related to the influence factors of Big Data use with the keywords "Big Data" and "Audit". Furthermore, it is correlated to the success of Big Data with the keywords "Big Data Adoption", "Big Data Impact", "Internal Audit", "Audit", and "External Audit" with the appropriate combination. The researchers then conducted and presented the results of the analysis with a literature review with a total of 67 literature reviews related to the adoption of Big Data in its implementation in auditing. To further explain the article selection process, the PRISMA diagram can be seen as follows:

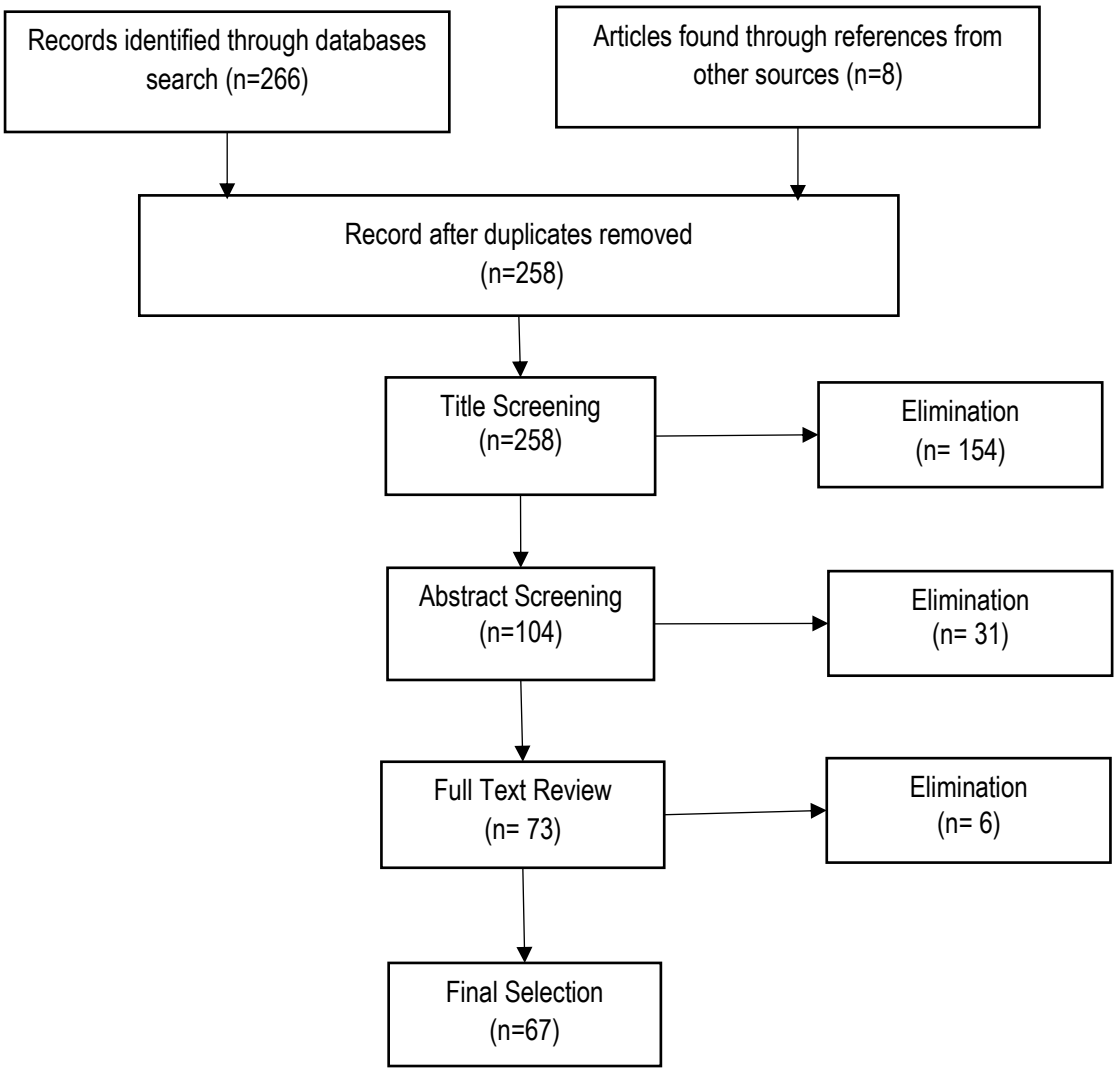
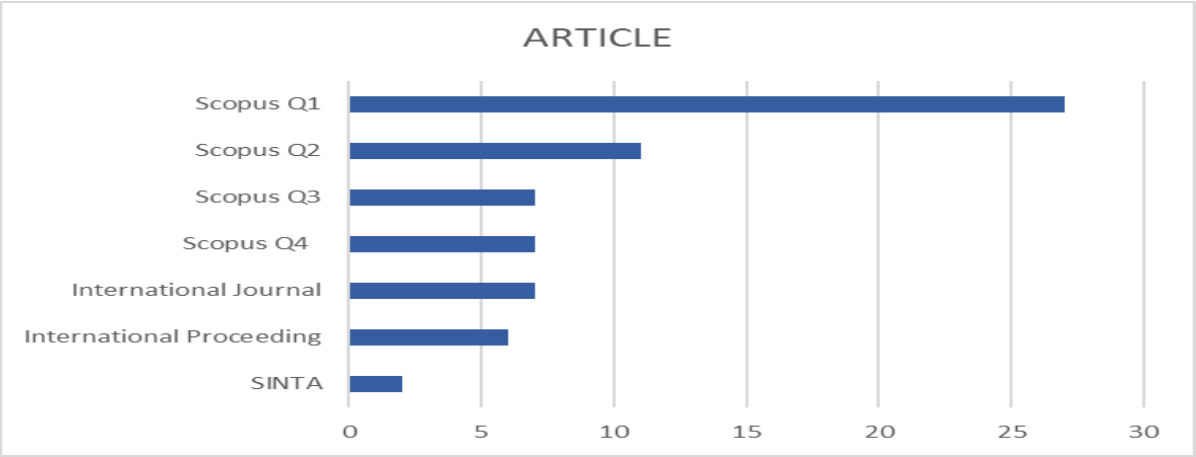


Diagram 1. PRISMA Flow Diagram

RESULTS



Graph 1. Distribution of Articles in Research

This research collected 61 articles and 6 international proceedings relevant to the application of Big Data in auditing. The following are the details of the distribution of these articles:

The diagram illustrates in detail the articles used as literature review. Scopus Q1 articles are publications from the highest-level journals that provide in-depth and up-to-date insights with the adoption of both empirical and theoretical data. Scopus Q2, Q3, Q4 contribute to analyzing the various advantages of using Big Data in auditing. International Journals aims to explore theoretical and empirical aspects that are not detected in data-based Scopus. International proceedings discuss various applications of Big Data of auditing in various sectors and countries. SINTA presents information related to the application of Big Data in the audit process on local case studies. Local case matches were found in SINTA 3 journals. In addition, this study also presents the distribution of countries contained in the sample to provide a global perspective on the application of Big Data in auditing. The following is the distribution of the sample based on the countries involved in this study:

Table 1. Distribution of Samples by Country

No	Country	Article	Percentage
1	China	13	19%
2	United States	9	13%
3	Indonesia	6	9%
4	Italy	5	7%
5	Africa	5	7%
6	Turkey	3	4%
7	Netherlands	3	4%
8	Taiwan	2	3%
9	Malaysia	2	3%
10	United Kingdom	2	3%
11	Jordania	1	1%
12	United Arab Emirates	1	1%

No	Country	Article	Percentage
13	Republic of North Macedonia	1	1%
14	New Zealand	1	1%
15	Egypt	1	1%
16	Zimbabwe	1	1%
17	Sri Lanka	1	1%
18	Spain	1	1%
19	India	1	1%
20	Sweden	1	1%
21	Australia	1	1%
22	Greece	1	1%
23	Iran	1	1%
24	Norway	1	1%
25	Vietnam	1	1%
26	Yemen	1	1%
27	Romania	1	1%
	Total	**67**	**100%**

There are 44 articles and 6 international proceedings related to the advantages of Big Data adoption and 9 articles from as Malakoute & Soumaya (2023) and 8 articles that discuss the impact of using Big Data. The results are as follows:

Table 2. List of Articles Focus on Big Data

No	Focus	Years	Author
1	Analyzing trends in Economic Responsibility Audits through hotspot mining using a knowledge.	2024	Jingjuan Z; Wenjie Z; Lingyun L; Yi L; Duo W
2	Big Data analysis is used to increase accountability in online public procurement.	2024	Mihai R. S; Marian I. S; Costin D. A; Luminița P
3	Performance Audit related to the evaluation and assessment of performance, particularly in the context of development in China.	2023	Liu Y
4	An empirical study on the evaluation of accountability regarding natural resources, pollution abatement, and government environmental regulation.	2023	Yalian Z; Qihang Z; Hexiao H; Cao W; Xin G
5	Implement internal auditing by designing a characteristics-based effectiveness model.	2023	Steven G; Peter J. Baldacchino; Simon G; Murat K; Norbet T; Lauren E
6	Insights from the Italian context reveal the relationship between audit quality and digitalization.	2023	Lugli, E; Bertacchini, F
7	Digital transformation of clients, digital expertise of audit firms, and audit quality: insights from China	2023	Rahman, M J; Ziru, A

No	Focus	Years	Author
8	Information literacy utilizes data mining, interaction auditing as well as information behavior.	2023	Patrick, A; Ndakasharwa, M
9	The impact of industrial technology on internal audit practices by utilizing Big Data.	2023	Reem O. Al- Khasawneh; Tala Al- Khasawneh
10	Influencing factors for internal audit effectiveness in the Indian context	2023	Joshi, P.L; Marthandan, G
11	Utilize technology-based ESG insurance 4.0 by integrating Big Data and technology to improve efficiency and reduce errors in ESG reports.	2023	Yu G; Jun D; Miklos A. V
12	Effectiveness of Big Data adoption on financial statements and corporate governance in Egypt	2023	Hussein M. S. Ahmed; Sherif El-Halaby; Khaldoon, A
13	AI application used for auditing by utilizing integrated Fuzzy adoption.	2023	Kuang H. H; Fu H. C; Ming F.H; GwoHshiung T
14	The impact of Big Data makes reporting easier and more accurate.	2023	Mandella O. A. B; Naheed R; Yongsheng G
15	The implementation of modern technology with Random Forest Algorithm in financial management can improve efficiency and risk control that can provide early warning.	2023	Ling, Y
16	Fuzzy has high accuracy on datasets using algorithms.	2023	Si, Y
17	The use of Big Data in detecting financial crime behavior.	2022	Iwan P; Urip S; Enggar D; Sri R; Syurya H
18	Big data used in implementation of audit platforms in universities.	2022	Hua Y; Wang G; Ge W; Huang Q; Yao Y
19	Blockchain as the latest innovation in external auditing	2022	Alessio F; Vishal P; Charu B
20	Managing and controlling risks in Big Data usage with innovative hybrid decisions based on artificial intelligence.	2022	Kuang H.H; Fu H.C; Ming F.H;Gwo H.T
21	Using BD and BDA as the direction of the desired audit result focuses on the procedure.	2022	Zorica L; Tocev B; Dionisijev T; Ivan
22	The use of BD in this study focuses on the ease of procedures in external audits.	2022	Angela L; Peter B; Denny S
23	Big Data is both a challenge and a breakthrough because it provides ease of use.	2021	M. C. D. Perera.; Ahangama W. J. C. A
24	The use of BD in Zimbabwe's external audits has a positive effect on evidence gathering and is more effective in completing it.	2021	Wadesango N; Fadzi M; Malatji S
25	Factors of Government Audit Big Data Capability.	2021	Yu S; Yanfang N; L. Lu
26	Big Data analytics and computerized data processing improve accuracy in audit quality and risk management.	2021	Zhao T

No	Focus	Years	Author
27	Integrate Bid Data with XBRL into ongoing internal audits. Simplify the process of identifying financial data.	2021	Yong W
28	Application of Big Data in overcoming all company internal audit problems	2021	Wen D
29	Data analysis can improve the efficiency and effectiveness of audit operations.	2021	Romina R; Federica D.S; Giuseppe D
30	Implementation of Big Data application in Accounting practice.	2021	Francis A.O; Cletus A. B; Abdulai E; Theodora E. A
31	As a result of digitization, Big Data analysis, and new technologies, internal audit faces both challenges and opportunities.	2021	Sezer B. K; Tamer A
32	Legitimizing Big Data Analytics (BDA) internally and externally with techniques and factors that drive and inhibit the audit process.	2021	Federica D.S; Giuseppe D
33	Evaluate the contribution of Big Data techniques in forensic accounting as well as the development of professional accountant competencies.	2020	Burcu I. K
34	Business organizations and also IA and Enterprise Architecture (EA) that have not yet adopted Big Data Analysis (BDA).	2020	Jovan L. C. F; Dr. Ir. Vinesh T
35	Factors that dynamically influence the effectiveness of Big Data application in the public sector.	2020	Mohammad I. M; Klajdi B
36	Utilization of Big Data Analysis for supply chain efficiency and effectiveness in industry 4.0, as well as design and evaluation of UAV-based systems	2019	Tiago M. F.C; Oscar Blanco N; Ivan Froiz M; Paula Fraga L
37	Big Data can detect fraud by simplifying the process of data collection to conclusion.	2019	Jiali T; Khondkar E K
38	Big Data in the audit profession for business analysis use by audit clients	2018	Deniz A. A; Alex K; Miklos A. V
39	Increased use of Big Data for reviewing problems facing the audit community	2017	Deniz A. A; Alex K; Miklos A. V
40	The challenges confronting the IT audit profession stem from the expanding volume of data, evolving technology, and growing regulatory demands.	2016	Ann C. D; Irina M
41	Utilization of Big Data in national security, law enforcement, and fraud prevention to improve the accuracy of analysis and detection.	2017	Dennis B; Erik S; Bart Van Der S; Rosamunde V. B; Josta D. H; Ernst H. B
42	Integrating Big Data (BD) in five dimensions of sustainability performance reporting	2017	Zabihollah R; Saeid H; Maria M
43	Integration through Big Data Analytics (BDA) can speed up the process in audit practices.	2018	Moutaz H; Kuangxi S; Maged A
44	Big Data in accounting affects the decision-making process.	2018	Steve G; Earl M. Jr; Kurt H; Luis G

No	Focus	Years	Author
45	Investigates the level of adoption of Big Data (BD) technology in companies, and the sources of Big Data (BD) used.	2018	Elisabetta R
46	Determining factors for the success of an effective internal audit. Identified and categorized in the model.	2021	Malakia L.N; Nikodemus A
47	A good audit process and planning will determine the success of the audit.	2020	Charilaos M; Vangelis B; Thodoris P
48	Operational activities are not only affected by effectiveness but also the process.	2020	Oktay T; Stevens J; Baris O
49	The effectiveness of internal audit is very important in determining audit decisions within stakeholders	2018	Lourens E; Philna C
50	Efficiency in the audit process, determinants of audit success	2019	Muhammad R. A; Agus Widodo M; Habiburrochman H

In the selected articles, the researchers proceed to analyze the findings related to audit quality factors in adopting Big Data. Figure 1 illustrates the impact of Big Data adoption. In mapping through the literature review, six factors support the impact of Big Data adoption on audit quality. The six factors were obtained from the literature, the results of which show an influence on audit quality. The six factors are decision-making, innovation, efficiency, effectiveness, accuracy, and ease of process.

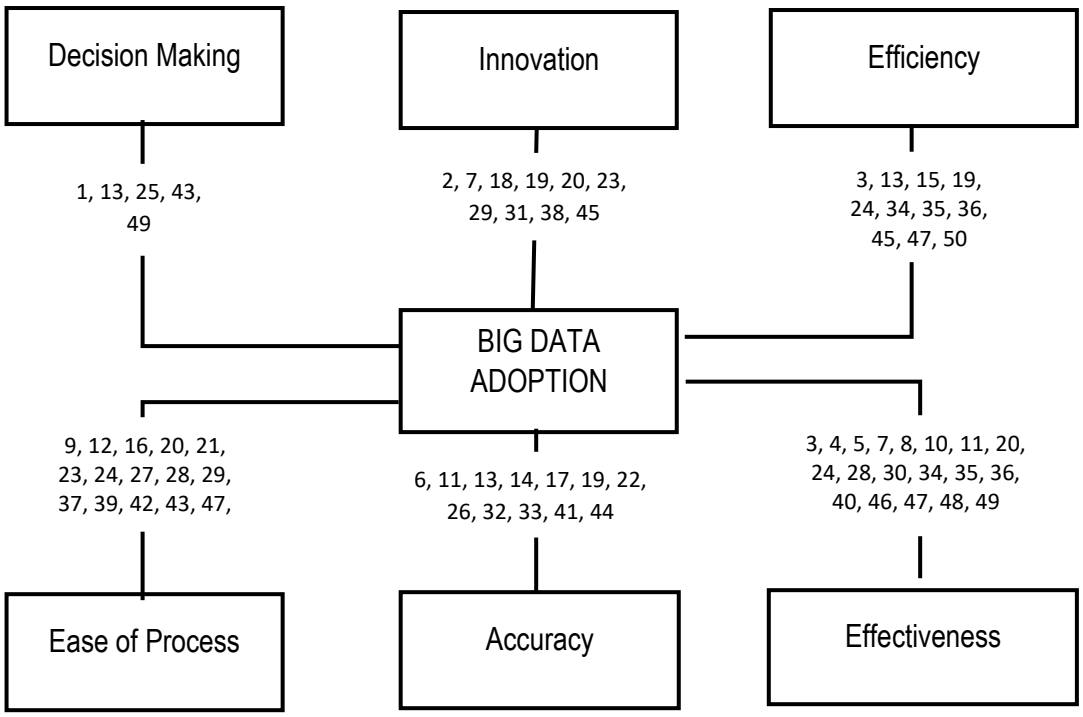


Figure 1. Mapping the Impact of Big Data Adoption on Auditing

Six factors are identified as the impact variables of Big Data implementation. The following is an explanation of how to measure each impact variable from the use of Big Data:

Then, it compares with the research factors conducted by Malakoute & Soumaya (2023) through analyzing the similarity of the factors that determine audit quality. These factors are the impact of the use of Big Data adoption on audit quality. Nine articles were found with the same factors out of 70 articles from Malakoute & Soumaya (2023) research related to audit quality. These 9 articles, which align with the factors highlighted by Malakoute and Soumaya (2023), are illustrated in Figure 2 as follows

Table 3. Definition and Measurement of Big Data Variables

Impact	Definition of measurement
Decision making	Refers to the decision-making process and considerations in internal and external auditing
Innovation	Referring to innovations in the market, management, data processing capabilities, audit professionalism in internal and external audits.
Efficiency	Refers to innovation in the market, management, data processing capabilities, audit professionalism in internal and external audits.
Effective	Use of systems, audit professionalism, effective use of Big Data in both internal and external audits
Accurate	Reliability, Appropriateness of evidence, financial statements.
Ease of Process	Refers to all aspects of the audit process including pattern identification, report lag, both in accounting and internal and external auditing.

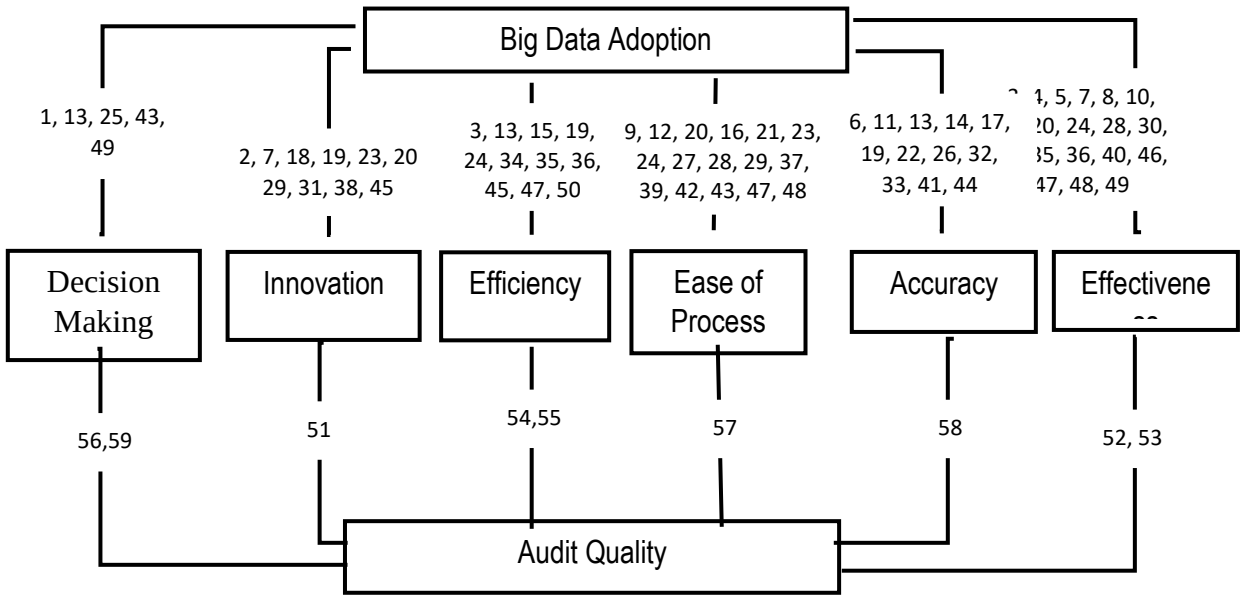


Figure 2. Impact of Data Adoption as a Determinant of Audit Quality

Table 4. List of Articles Determining Audit Quality by Malakoute & Soumaya (2023)

No	Focus	Years	Author
51	Factors that influence the quality of a company's audit.	2019	F Fitriany; V Anggraita; T Kurrohman; S Aulia
52	Reviews KAP through determinants in improving audit quality.	2019	Mahdi S; Mohamad Reza F. M; Ali Daemi G
53	Study the relationship between audit quality in private companies and audit performance related to the provision of non-audit services (NAS).	2013	Tobias S
54	Focus on high and low audit quality in affiliated company groups.	2020	Jinghui S; Jianling W; Pamela K; Qi B
55	Comparison of different levels of audit quality for each auditor in the industry and partners.	2020	Josep G. B; Josep M. A. B; Diego R
56	Auditor attributes and adding incrementally to the base model with client controls in explaining audit results.	2020	Mara C; Domenico C; Jere R. F
57	One of the factors that affect audit quality is job qualifications, which are related to the audit process, namely the control system.	2015	Do H. H; Ngo S. T
58	This study examines the effect of audit market structure on the accuracy of audit quality and price, and analyzes it through complexity measurement.	2019	Jeroen V. R; Erik P; Roger M; Caren S
59	Factors related to engagement level audit quality.	2011	Francis, J. R

Figure 2 illustrates the impact of data adoption on auditing, where the impact is a determinant of audit quality. The six impacts are associated with literature findings conducted by Malakoute & Soumaya (2023). Seen in Table 4 determining audit quality, there are 9 articles related to the six factors as a simplification. Thus, auditors can apply Big Data in their activities by considering some of these factors to improve audit quality without having to fulfill all factors and adapted to their needs.

The six factors are correlated to the public sector to focus on the government sector. The articles that were linked reviewers the successful implementation of Big Data on auditing. The last stage relates audit success factors to the government sector. A total of 8 articles were identified that were relevant to audit success in the government sector.

Table 5. List of Articles Audit Success

No	Focus	Years	Author
60	FGDs are used to assess the extent of local government readiness in adopting Big Data, as well as to measure the level of success in its implementation.	2024	Kasmad A; Ahmad B. S; Alfin H; Ardison; Djoko W
61	Review the advantages and disadvantages of audits at Big Four firms and specialist auditors in improving audit quality.	2018	Saeed, B; Zalailah, S ; Norsiah, A
62	The Relationship of Big Data Analytics to Audit Quality.	2023	Norman S.P; Hamzah R; Adhi A
63	Use of Big Data in the regional taxation system to build a Smart City.	2023	Ayu F. P; Khoiru R; Lilik P
64	A good audit can improve audit quality, namely audit results. Its more efficient implementation can drive audit success.	2020	Tusheng X; Chunxiao G; Chun S Y
65	Auditing skills through Big Data Business Analytics can boost a successful career.	2015	Rameshwar D; Angappa G
66	Big Data adoption can be an opportunity to achieve maximum audit quality.	2015	Miklos A. V; Alexander K; Brad M. T
67	Big Data can affect audit judgment on appropriate decision-making. The right decision is the key to audit success.	2015	Helen B. L; Hussein I; Danielle L

Table 5 is a list of audit articles where audit quality is correlated with the audit success literature. Data adoption in its application provides readiness to achieve audit results (Ariansyah et al. 2024). In practice, it can assist in the professionalism of auditors (Cahyono & Ardianto 2024). Big Data can also provide opportunities in system development (Puspita et al. 2023). Audit success can be measured through audit quality (Saeed et al. 2018).

The impact of this adoption provides convenience in decision making, innovation, effectiveness, efficiency, accuracy, and ease of process in auditing. The results are reinforced by research conducted by Tang & Karim (2019), Merhi & Bregu (2020) and Ajibade & Muchaonyerwa (2023) which show that the use of Big Data such as Geo-Spatial Data, Data Mining, semi structure and unstructured data is able to audit with effective, efficient and accurate results. On the other hand, Appelbaum et al. (2017), Perera & Abeygunasekera (2021) and Puspita et al. (2023) investigated Big Data (BA) and Big Data Analytics (BDA) used in the cloud, Internet of Things, and external data sources for data analysis in audit engagements. The study found that Big Data is an opportunity and challenge for external auditors in making decisions. Furthermore, Big Data can be integrated with cutting-edge technologies, as revealed in research by Khan et al. (2021), Ling (2023), and Hu et al. (2023). This integration enables the management of massive amounts of data, reaching hundreds of millions of elements, as noted by Sanda et al. (2024), thus providing tremendous convenience, innovation, and efficiency in the audit process.

We conclude that leveraging Big Data can enhance audit success by improving audit quality through the use of cutting-edge technology. Our assumption is that government audits are successful when audit quality is good, and one way to achieve good audit quality is through adopting Big Data. This is in line with research from Ariansyah et al. (2024) that Big Data can determine success in audits by measuring the readiness of Big Data in the public sector. The implementation of Big data will be able to improve skills in auditing so that it can get better results with its ability to provide in-depth analysis (Ajibade & Muchaonyerwa 2023). This is reinforced by empirical research by Putra et al. (2023), which states that Big Data Analytics affects significant audit quality.

High audit quality in the government sector will be achieved if implementing the adoption of Big Data (BA) and Big Data Analytics (BDA) can guide accurate auditor materiality decisions (Sinason 2000). Such decision making through Fuzzy analysis (Khan et al. 2021), where the fuzzy application provides a comprehensive and intuitive impact on decision making (Hu et al. 2023). Not only that, the application of Big Data can also encourage a more effective audit process by using random forest algorithms (Ling 2023).

Furthermore, the application of Big Data in auditing can incorporate Artificial Intelligence (AI) technology to address the limitations of audit execution through applying AI technology by utilizing data mining and machine learning. Data mining can be used by the auditors to extract important information from large amounts of data, such as clustering, classification and association rule mining. In addition, auditors can analyze historical trends and patterns in financial and operational data. Machine learning in auditing can also detect anomalies, such as isolation forests, support vector machines (SVM), and neural networks that can be used to detect anomalies in financial data.

CONCLUSION

This research utilizes a System Literature Review (SLR) with a focus on the impact of Big Data adoption on government auditing. The researchers analyzed 61 articles and 6 international proceedings. First, six impact factors of data adoption were found, including decision making, innovation, efficiency, ease of process, accuracy, and effectiveness. These six factors determine the increase in audit quality and audit success. Second, several differences in studies conducted in Indonesia were identified, which show that the majority of samples focus on regional sectors in Indonesia, while other countries have the majority of samples in countries or even more globally. that allow cross-country or regional comparisons.

The limitation of this research is its reliance on manual methods, which have several limitations, such as human error. Such errors may include typing errors, misinterpretation, or the omission of important information. The implications of this study highlight the importance of Big Data adoption to improve audit quality. Effective data adoption can help auditors achieve more accurate and representative results, and reduce the risk of errors. In the context of government, the application of Big Data in auditing can improve transparency, accountability, and operational efficiency. Future research can be further analyzed using a comparative analysis by comparing the results of manual audits and Big Data adoption.

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