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Forensic Audit: The Integrity Backbone of Sustainability Disclosure

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ABSTRACT: This study aims to systematically review the role of forensic audit, digital forensic support, and corporate governance in strengthening the integrity and quality of sustainability disclosures. Using the Systematic Literature Review (SLR) method of 22 Scopus indexed articles for the 2018–2025 period, this study groups the findings into four main themes: (1) forensic audits and the quality of investigative audits, (2) the role of digital forensics in sustainability audits, (3) contribution audit committee on ESG transparency, as well as (4) the influence of regulations on the consistency of sustainability reporting. The study results show that forensic audits act as a pillar of integrity in sustainability disclosures, with the main function of detecting fraud, testing the authenticity of non-financial data, and preventing greenwashing practices. Meanwhile, digital forensic technology support has been proven to increase the effectiveness of audits and the reliability of ESG verification. An independent and gender diverse audit committee strengthens transparency, while the implementation of IFRS S2 and ESG regulations plays a role in suppressing symbolic disclosure practices and strengthening reporting accountability. This study produces a conceptual model of the Forensic-Based Sustainability Audit Model (FBSAM) which integrates forensic audit, digital technology, governance, and sustainability regulations to build corporate accountability in the era of ESG reporting. FBSAM can become the basis for developing credible and forensic evidence-based sustainability assurance practices.

KEYWORDS: Forensic Audit, Sustainability, Corporate Governance, ESG, Digital Forensics, IFRS S2.

INTRODUCTION

The global phenomenon of sustainability increasingly places transparency, accountability, and reliability of non-financial reporting as important elements in corporate governance. Since the establishment of Sustainable Development Goals (SDGs) by the United Nations in 2015 and the publication of IFRS S1 and IFRS S2 standards by the International Sustainability Standards Board (ISSB) in 2023, companies in various countries have faced demands to disclose sustainability risks and opportunities more comprehensively (Narváez-Castillo et al., 2024) . This standard emphasizes the connectivity between financial and non-financial information, reflecting a new awareness that environmental, social and governance (ESG) issues have a direct impact on financial performance and the long-term value of companies (Fujianti et al., 2024). Azizah & Fujianti (2024), (Azizah, 2022), Azizah & Wahyoeni (2025) also emphasized the importance of integration between financial and non-financial performance to ensure accountability and strengthen the company's legitimacy in the eyes of stakeholders, especially amid increasing global concern over climate issues caused by excessive greenhouse gas emissions that threaten environmental sustainability (Sudarmaji et al., 2025) (Sudarmaji et al., 2024).

In the context of governance and supervision, the role of audit is increasingly strategic in ensuring the integrity of sustainability reporting. In Indonesia, this is increasingly relevant with increasing public demands for state audit institutions and external auditors to uncover potential fraud and ensure sustainable public financial accountability (Susanto et al., 2022) (Azizah, Murni, et al., 2022) (Azizah, Fredy, et al., 2022) (Azizah, 2024a) (Azizah et al., 2024) (Azizah, 2024b). Forensic audits and digital forensic support are now the main instruments for detecting and proving fraud in financial and non-financial reporting, including in the context of sustainability disclosure. Study by Susanto et al. (2022) shows that auditor competency and digital forensic support have a significant effect on the quality of investigative audits, which in turn strengthens transparency and good governance.

Nevertheless, ESG disclosure practices at the company level still show significant variations (Fujianti et al., 2024). Study by Aboud, Saleh, and Eliwa (2024) found that the implementation of EU Directive 2014/95 can reduce the level of ESG decoupling, namely the difference between disclosure and actual ESG performance, but its effectiveness is very dependent on the strength of the law enforcement system in each country. Thus, the success of sustainability reporting policies is not only determined by formal regulations, but also by the quality of audits and enforcement mechanisms that prevent symbolic disclosure or window dressing practices in ESG reporting.

Apart from regulatory aspects, internal corporate governance also plays an important role in ensuring the quality of sustainability reporting. The study by Adegboye et al. (2020) shows that independence and gender diversity in audit committees have a positive effect on the quality of sustainability reporting in the banking sector in Nigeria. These findings indicate that diversity of perspectives and independence in oversight can increase transparency, ethics and accountability in sustainability reporting. Similar results are also confirmed by Al-Shaer and Zaman (2016), who emphasize that gender diversity in boards and audit committees contributes to improving the quality of ESG disclosures.

On the other hand, the relationship between ESG issues and audit practices is developing through the integration of sustainability issues into audit reports, especially in the Key Audit Matters (KAMs) section. Study by Narváez-Castillo et al. (2024) show that auditors are starting to include material ESG issues in KAMs, although attention is still more focused on governance aspects than social and environmental issues. This condition emphasizes the importance of increasing auditor competency in understanding and evaluating sustainability risks holistically.

Based on these various findings, there is a need to systematically review how aspects of forensic auditing, digital forensics, corporate governance and ESG regulations interact to improve the quality of sustainability reporting. The forensic audit approach to sustainability disclosure has not been widely explored in the accounting literature, even though conceptually forensic auditing has high relevance for ensuring the integrity and reliability of non-financial information. During increasing risks of greenwashing and ESG fraud, forensic audits can act as an innovative approach to test the suitability between actual sustainability disclosures and realization.

However, previous study has focused more on sustainability disclosures while the forensic dimension as a tool for validating the authenticity of ESG disclosures has not been widely discussed. This study gap provides an important basis for this study to integrate forensic audit, governance and IFRS S2 regulatory perspectives in assessing the reliability of sustainability disclosures. Therefore, this study aims to conduct a systematic literature review (SLR) which focuses on:

1. The role of forensic audit and digital forensic support in improving the quality of sustainability audits.
2. The influence of corporate governance and audit committees on the transparency and reliability of ESG reporting
3. The impact of regulatory policies, such as EU Directive 2014/95 and IFRS S2, on the consistency between disclosure and sustainability performance.

Through this study, a conceptual synthesis will be obtained that strengthens understanding regarding the integration of forensic and sustainability audits. This study is also expected to provide theoretical and practical contributions to the development of a sustainability-based forensic audit model (FBSAM) as a new approach in ensuring the accountability and integrity of ESG reporting, especially in countries developing like Indonesia.

LITERATURE REVIEW

Forensic Audit and Sustainability Audit Quality

Forensic audit has developed as a branch of investigative auditing that focuses on proving and preventing fraud through scientific approaches and digital evidence analysis. According to Susanto et al. (2022), the quality of investigative auditing is greatly influenced by auditor competence and digital forensic support, which significantly improve auditors' ability to detect indications of financial irregularities and corruption. The study, conducted on investigative auditors at the Supreme Audit Agency (Badan Pemeriksa Keuangan) of the Republic of Indonesia, found that the integration of professional competence with the use of digital forensic technology strengthens the quality of investigative audit results and maintains the integrity of public oversight institutions.

Forensic audit not only serve as legal evidence but can also act as a mechanism for strengthening sustainability audits. In this context, forensic audits have the potential to identify indications of greenwashing or fraudulent sustainability disclosure—that is, when companies present ESG reports that are not in line with their actual practices. In line with this, Aboud et al. (2024) reveal the phenomenon of ESG decoupling, which is the gap between ESG disclosure and actual performance, which can be a form of non-financial information manipulation. Thus, the application of forensic audit principles in sustainability reporting can be used to detect and prevent non-financial misstatements and improve the reliability of ESG reporting.

This approach is in line with the requirements of IFRS S2, which emphasizes the disclosure of evidence-based climate risks and opportunities that can be verified. Forensic auditing provides analytical tools and data tracing methodologies (data mining, forensic analytics, digital tracing) that enable auditors to confirm the validity of ESG data. Therefore, the integration of digital forensics and sustainability auditing is the direction of modern auditing evolution that supports sustainability-based corporate accountability.

Corporate Governance and the Role of Audit Committees in Sustainability Reporting

Corporate governance is the main foundation for ensuring transparency and accountability in sustainability reporting. Research by Adegboye et al. (2020) in the banking sector in Nigeria shows that the characteristics of audit committees, particularly independence and gender diversity, have a positive effect on the quality of sustainability reporting. Conversely, audit committees that are too large actually reduce the effectiveness of oversight due to weak coordination in the decision-making process.

These results reinforce the view that gender diversity contributes to the effectiveness of oversight by improving ethics, compliance, and sensitivity to social and environmental issues (Al-Shaer & Zaman, 2016; Green & Homroy, 2018). Independent and diverse audit committees not only function as internal control mechanisms but also as guardians of the credibility of non-financial information disclosed by companies.

In a broader context, good governance plays a role in bridging the gap between disclosure and actual ESG practices. Aboud et al. (2024) highlight that weak law enforcement and a lack of oversight standards have led to the continued prevalence of symbolic disclosure practices—that is, sustainability reports that only meet formal compliance requirements without any real performance substance. This reinforces the argument that the quality of governance and the effectiveness of committee audits are key determinants of the credibility of sustainability reporting.

Integration of ESG Issues in Auditing and Reporting (Key Audit Matters)

The paradigm shift in auditing encompasses not only financial auditing but also the integration of environmental, social, and governance (ESG) issues into the risk assessment and audit reporting processes. Narváez-Castillo et al. (2024) show that auditors in Colombia have begun to include material ESG issues in the Key Audit Matters (KAMs) section of audit reports, although auditors still pay more attention to governance aspects than social or environmental aspects.

The study shows that the successful integration of ESG into KAMs is highly dependent on auditors' competence in understanding sustainability risks and the availability of verifiable data. Auditors face new challenges in assessing the impact of ESG issues on audit risk and financial reporting. Therefore, professional capacity, the use of big data analytics, and synergy between external auditors and ESG specialists are crucial in ensuring that sustainability issues are assessed comprehensively and disclosed transparently.

The concept of double materiality, as stipulated in EU Directive 2022/2464/EU, expands the responsibilities of auditors and management to not only assess the impact of ESG on company performance (outside-in), but also the impact of company activities on the environment and society (inside-out). Thus, sustainability audits now serve as an integrative mechanism that links financial and non-financial risks.

ESG Regulations and Their Implications for Reporting Integrity

Global regulatory developments such as EU Directive 2014/95/EU and the Corporate Sustainability Reporting Directive (CSRD) mark a transition from voluntary sustainability reporting to standardized mandatory reporting. Research by Aboud et al. (2024) found that after the enactment of EU Directive 2014/95, there was a significant decline in ESG decoupling practices among companies listed in the European Union, indicating that reporting requirements can improve consistency between disclosures and actual ESG performance.

However, the effectiveness of regulations is highly dependent on the enforcement systems in each country. Countries with weak enforcement systems tend to still face symbolic reporting and window dressing. Therefore, mandatory reporting policies must be accompanied by robust audit systems, independent verification mechanisms, and transparent public oversight to ensure the credibility of sustainability reports.

Conceptual Synthesis: Forensic Audit as an Instrument for Preventing ESG Fraud

Referring to the results of previous studies, it can be synthesized that forensic auditing practices have great potential to be applied in the context of sustainability auditing. This approach focuses not only on fraud detection in financial transactions, but also on testing the authenticity of ESG disclosures. In the modern context, ESG fraud can include the presentation of manipulated emissions data, sustainability reports that are not supported by evidence, or greenwashing practices that mislead investors and the public.

The integration of forensic digital tools, big data analysis, and cross-disciplinary competencies (finance, environment, technology) can strengthen audit models that are more adaptive to sustainability challenges. Thus, forensic-based sustainability audits can become a new paradigm to ensure that sustainability reports are not merely symbols of compliance, but a true representation of corporate accountability and ethics.

METHOD

This study uses a Systematic Literature Review (SLR) approach. This approach is used to explore, identify, and interpret previous study findings related to forensic audits, corporate governance, and sustainability disclosures. The literature search process was carried out in a structured manner through several reputable international academic databases, namely ScienceDirect, Wiley Online Library, Emerald Insight, and SpringerLink. Apart from that, searches were also carried out manually via Google Scholar to obtain additional articles relevant to the Indonesian context. Searches are carried out using the following keyword combinations:
("forensic audit" OR "investigative audit" OR "digital forensics")
AND ("sustainability disclosure" OR "ESG reporting" OR "IFRS S2")
AND ("corporate governance" OR "audit committee" OR "key audit matters").

Search results were limited to articles published in the period 2018–2025 to capture the latest developments post the implementation of EU Directive 2014/95/EU and the endorsement of IFRS S1–S2 standards by the ISSB (2023).

Inclusion and Exclusion Criteria

To maintain consistency and relevance of the literature, the selection criteria as shown in the table 1:

Table 1. Article Inclusion and Exclusion Criteria

Aspects	Inclusion Criteria	Exclusion Criteria
Study Field	Accounting, auditing, forensic accounting, corporate governance, sustainability, ESG disclosure	Non-accounting fields (e.g., law, biology, engineering)
Publication Type	Peer-reviewed scientific journal articles, indexed by Scopus	Proceedings, opinion pieces, editorials, working papers
Study Type	Empirical, conceptual, or mixed methods	Articles without a clear scientific methodology
Publication Period	2018–2025	Published before 2018
Geographic Context	Global and developing countries	Single cases with no relevance to audit or ESG
Language	English or Indonesian	Languages other than English and Indonesian

From the initial search results of 87 articles**,** then filtered them based on thematic relevance and completeness of the data. After the exclusion stage, 22 primary articles and 4 key articles were obtained, which served as the basis for in-depth analysis:

a. Susanto et al. (2022) – *Forensic Audit Competence and Digital Forensic Support*
b. Adegboye et al. (2020) – *Audit Committee Characteristics and Sustainability Disclosure*
c. Aboud et al. (2024) – *EU Directive 2014/95 and ESG Decoupling*
d. Narváez-Castillo et al. (2024) – *Integration of ESG Issues into Key Audit Matters (KAMs)*

RESULTS AND DISCUSSION

Four main articles were used as key references because they have the strongest connection to the study focus, namely forensic auditing, corporate governance, and sustainability disclosure. The results of this study can be grouped into four main themes:

a. The role of forensic audit in improving the quality of investigative audits and preventing fraud.
b. Support of digital forensic technology in sustainability audits.
c. The influence of governance and audit committees on the quality of sustainability disclosures.
d. The role of sustainability reporting regulations and policies in strengthening the integrity of non-financial information.

Based on Table 2, study on the theme of forensic auditing and sustainability experienced quite diverse developments in the 2018–2025 period. The most dominant theme was forensic and investigative audits with a proportion of 27.3%, followed by digital forensics and audit technology at 22.7%. This shows that the focus of accounting study is starting to shift from the issue of reporting compliance to the issue of the reliability and integrity of digitally verifiable sustainability information.

The themes of corporate governance and audit committees as well as ESG reporting and regulations (IFRS S2) also occupy a significant portion, each at 18.2%. The dominance of these four themes shows that sustainability audit study is no longer single in nature, but is integrative between technical, governance and regulatory aspects.

Table 2. Distribution of Articles Based on Main Themes

No	Key Themes	Number of Articles	Percentage (%)
1	Forensic and Investigative Auditing	6	27,3
2	Digital Forensics & Audit Technology	5	22,7
3	Governance & Audit Committees	4	18,2
4	ESG Reporting & Regulation (IFRS S2)	4	18,2
5	ESG Integration in KAMs	3	13,6
Total		22	100

The pattern of increasing number of publications shown in Figure 1 shows that attention to the theme of forensic auditing and sustainability has experienced significant growth since 2020. This trend is in line with global dynamics following the publication of various international sustainability policies, such as the EU and the formation of the International Sustainability Standards Board (ISSB) by the IFRS Foundation in 2021. The peak of publications in 2022 shows increasingly strong academic interest in the issue

of the integrity of ESG disclosures, especially in relation to the role of forensic audits and digital technology as oversight mechanisms.

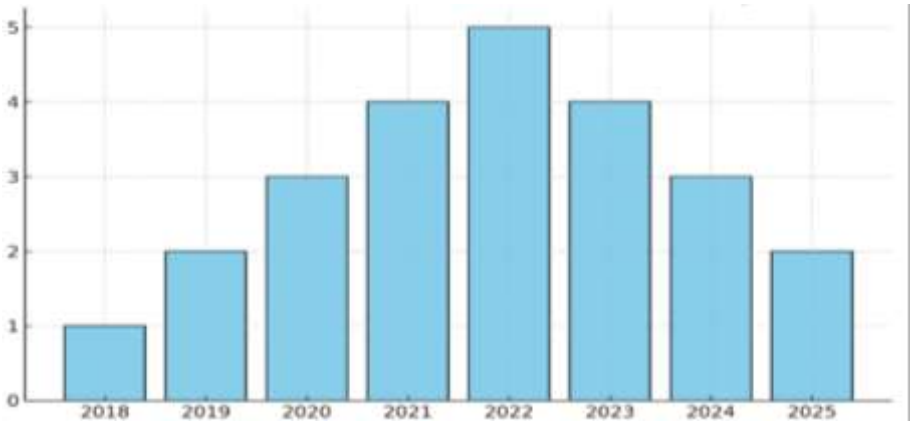

Figure 2 displays the geographical distribution of study based on the country of origin of the study. This data provides a more comprehensive picture of forensic and sustainability audit study centers in the world. Indonesia is the country with the largest number of publications, followed by Spain and Colombia. This shows that the issue of forensic auditing is not only developing in developed countries but is also starting to receive serious attention in developing countries, where governance challenges and sustainability reporting transparency are still high. This distribution also shows the existence of cross-regional academic collaboration, where the topics of ESG, IFRS S2, and forensic auditing are global and interdisciplinary areas of accounting study.

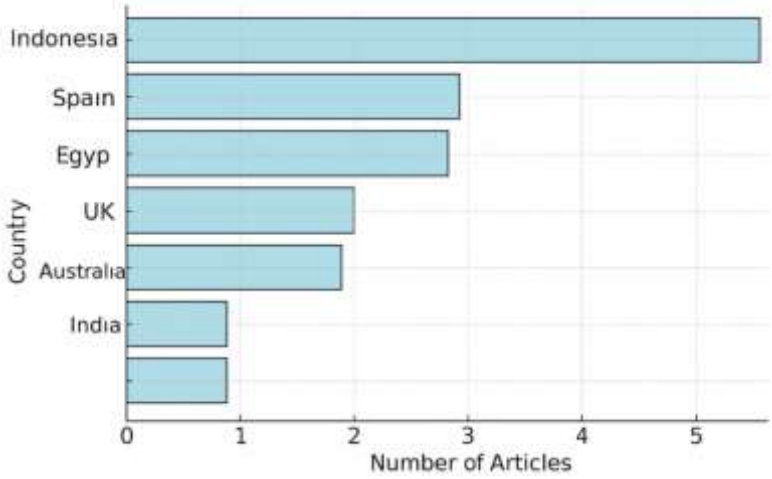

Figure 2. Distribution of Forensic Audit and Sustainability Articles in 2018-2025 by Country

Integration of Forensic Audit in Sustainability Audit

The results of the study show that forensic audits have strategic potential to strengthen the credibility of sustainability audits. Forensic audits emphasize the collection, analysis, and verification of data empirically and objectively, which is relevant to ensuring the veracity of non-financial disclosures such as ESG reports. Study by Susanto et al. (2022) emphasizes that auditor competency and digital forensic support play an important role in increasing the effectiveness of investigative audits.

In the context of sustainability, this approach can be applied to identify potential greenwashing, the presentation of sustainability information that does not match the reality of the company's operations. Digital evidence-based forensic audits can help ensure that the emissions, social activities, and governance data reported in sustainability reports can truly be verified.

This is in line with the concept of assurance for sustainability reporting as developed in IFRS S2 and ISSA 5000 (International Standard on Sustainability Assurance) designed by the IAASB. These two standards require auditors to not only assess the correctness of data, but also materiality and connectivity between financial and non-financial information (Narváez-Castillo et al., 2024). Thus, the incorporation of forensic audit methods in sustainability audits is not just an innovation, but a logical necessity to address reputational and financial risks arising from inaccurate ESG reporting.

Digital Forensics as a Supporter of ESG Transparency

Digital forensic technology expands the scope of audits by allowing auditors to trace operational data, electronic transactions, and track records of a company's digital activities. In the ESG context, sustainability data is often spread across multiple internal systems, from energy records, to waste reports, to human resources policies. As outlined by Narváez-Castillo et al. (2024), the use of big data analytics, blockchain, and artificial intelligence can increase verification accuracy and reduce human bias in ESG audits.

However, the biggest challenges faced by auditors are limited digital competence and the lack of technical guidance governing the application of this technology in the realm of sustainability audits. This condition also provides an opportunity for educational institutions and professional accounting associations in Indonesia to integrate forensic technology and sustainability assurance curricula into professional auditor education.

Governance as a Control Mechanism

The results of the study from Adegboye et al. (2020) and Aboud et al. (2024) emphasized that good corporate governance is an important element in maintaining the reliability of sustainability reporting. An audit committee that is independent, competent and gender diverse has been proven to improve the quality of ESG reporting, especially in the financial sector.

A strong governance structure is also able to prevent symbolic disclosure or window dressing, cosmetic sustainability reporting without a basis in operational facts. In the Indonesian context, this becomes relevant for public companies which are required to prepare sustainability reports in accordance with POJK No. 51/POJK.03/2017. However, these reports are often still oriented towards administrative compliance, not the substance of sustainability performance. Integrating the roles of the audit committee and the internal monitoring unit (SPI) is very important to ensure that sustainability reports are prepared based on data that is accurate, verifiable, and free of conflicts of interest.

Global Regulations and Standards as Drivers of Accountability

The results of the study by Aboud et al. (2024) provide empirical evidence that mandatory reporting policies, such as EU Directive 2014/95, can reduce the level of ESG decoupling in European Union countries. This shows that a strong regulatory framework and enforcement mechanisms are important factors in strengthening the quality of sustainability reporting. The implementation of international standards such as IFRS S1 and S2 opens opportunities for global harmonization of sustainability reporting.

For Indonesia, adopting IFRS S2 in the future could be an instrument to increase the credibility of ESG reports. However, this adoption must be followed by adequate audit capacity, both at the internal and external levels, so that sustainability information can truly be accounted for.

Conceptual Model: Forensic-Based Sustainability Audit (FBSAM)

Based on the synthesis of previous studies, a conceptual framework called the Forensic-Based Sustainability Audit Model (FBSAM) was developed to explain the integration of forensic audit principles, digital forensic technology, corporate governance mechanisms, and sustainability reporting standards in strengthening the reliability of ESG disclosures. The model rests on the premise, audit forensics serves as a bridge between assurance credibility and sustainability accountability, enabling auditors to verify the truthfulness, completeness, and accuracy of non-financial information through evidence-based procedures. This model responds to the growing need for a robust assurance mechanism capable of detecting and preventing *greenwashing* and *ESG fraud* practices in corporate reporting. Forensic-Based Sustainability Audit Model (FBSAM) as shown in Figure 3.

Figure 3. Forensic-Based Sustainability Audit Conceptual Model (FBSAM)

The FBSAM explains, increasing auditor competency and supporting digital forensic technology will strengthen the fraud detection process and validation of non-financial data. The audit results are then strengthened through the governance system and the role of the audit committee which functions as an internal control mechanism. When the results of audits and sustainability

reports meet the guideline such as IFRS S2 principles, the level of accountability and public trust in the company will increase. The FBSAM consists of four interrelated pillars that collectively form a circular and iterative assurance process:

1. Auditor Competency and Forensic Expertise.
   The first component emphasizes that the effectiveness of sustainability assurance depends on the auditor's forensic competence, encompassing analytical reasoning, fraud investigation skills, and the ability to interpret both financial and non-financial data. As demonstrated by Susanto et al. (2022), forensic auditors with digital literacy and investigative experience are better equipped to identify anomalies and irregularities in ESG disclosures. Within FBSAM, auditor competency acts as the foundation that determines the depth and objectivity of sustainability assurance.
2. Digital Forensic Technology Support.
   The second component underscores the role of digital tools such as *blockchain*, *big data analytics*, and *artificial intelligence* in enhancing audit reliability. These technologies facilitate data triangulation, traceability, and cross-system validation of ESG indicators, particularly in emissions data, social impact metrics, and governance performance. As argued by Narváez-Castillo et al. (2024), technological integration reduces human bias, supports real-time verification, and transforms sustainability audits from manual documentation into continuous digital assurance.
3. Corporate Governance and Audit Committee Oversight.
   The third component reflects the governance infrastructure that ensures audit results are independently evaluated and aligned with ethical standards. Research by Adegboye et al. (2020) and Al-Shaer & Zaman (2016) highlights that an independent and gender-diverse audit committee strengthens ethical oversight and transparency. Within FBSAM, the governance mechanism functions as a *control loop* that validates audit findings, mitigates management bias, and ensures that ESG disclosures are representative of actual corporate practices.
4. Sustainability Reporting Standards and Regulatory Alignment**.**
   The final pillar incorporates compliance with globally recognized standards. These frameworks provide a consistent structure for assessing materiality, comparability, and connectivity between financial and non-financial disclosures. Aboud et al. (2024) emphasize that strong regulatory alignment reduces *ESG decoupling*, the gap between disclosure and actual performance. Within FBSAM, adherence to these standards ensures that the forensic audit process is not merely investigative but also harmonized with international reporting expectations.

CONCLUSION

This study aims to systematically review literature related to the role of forensic audits, digital forensic support, corporate governance, and ESG regulations in improving audit quality and sustainability disclosures. Based on the results of a systematic literature review of twenty-two articles that met the inclusion criteria, several main conclusions were obtained:

1. Forensic audit has proven to be an important mechanism in strengthening the credibility and accountability of sustainability reporting. This audit approach emphasizes evidence-based examinations and in-depth analysis of indications of irregularities, so as to detect greenwashing and discrepancy between disclosed data and actual practice. The integration of forensic audit principles in sustainability audits is a strategic step to ensure the integrity of ESG reports which is increasingly receiving attention from the public and investors.
2. Support for digital forensics and big data analytics is proven to increase auditors' abilities in tracing electronic evidence, verifying non-financial data, and minimizing human bias. The use of technology such as blockchain, artificial intelligence and digital tracing is an important foundation in modern sustainability audits. However, the results of the study also show that the limited digital competence of auditors is still a challenge that needs to be overcome through professional education and training oriented towards audit technology.
3. Corporate governance and the role of the audit committee to function as internal controls which have a significant influence on the quality of sustainability disclosures. An audit committee that is independent, competent and gender diverse has been proven to increase transparency and reduce the risk of symbolic disclosure. Thus, the success of a sustainability audit is not only determined by technical audit procedures, but also by strong ethical commitment and corporate governance.
4. The adoption of international reporting standards such as IFRS S1 and IFRS S2 as well as national policies such as POJK 51/2017 has a central role in fostering a culture of transparent and comparable sustainability reporting. However, the effectiveness of regulations is highly dependent on law enforcement mechanisms and the capacity of supervisory institutions to ensure ESG reporting compliance.
5. The Forensic-Based Sustainability Audit Model (FBSAM) integrates auditor competency, digital forensic technology support, governance systems, and sustainability reporting regulations as the main pillars of establishing corporate accountability. This model serves as a framework for assessing the extent to which organizations can maintain integrity and transparency in ESG reporting.
6. The FBSAM is theoretically grounded in Stakeholder Theory and Legitimacy Theory. From a stakeholder perspective, the model illustrates that transparent and verifiable ESG reporting enhances stakeholder trust and long-term corporate legitimacy.

From a legitimacy perspective, forensic auditing acts as a verification tool that helps organizations maintain their social contract by providing evidence-based disclosures rather than symbolic compliance.

7. the novel contribution of the FBSAM lies in its integration of forensic audit methodology into the sustainability assurance framework**,** which transforms ESG reporting from a voluntary narrative into an evidence-backed accountability mechanism.

The results of this study theoretically broaden the use of stakeholder theory and legitimacy theory by adding the dimension of forensic audit as a tool to maintain legitimacy and public trust through verifiable disclosures. Meanwhile, from a practical side, the results of this study provide a basis for regulators, auditors, and academics to develop sustainability assurance guidelines based on forensic evidence and digital technology. Thus, this study has policy implications, government, and Financial Services Authority (OJK in Indonesia) need to strengthen the sustainability reporting enforcement system through a risk-based audit mechanism that combines investigative and forensic elements.

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