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Trend of Fraud Prevention Researches in *Science and Technology Index* (SINTA): From Research Design to Analysis

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ABSTRACT

Objectives: This study intends to examine research publications on fraud prevention that are indexed in Scopus and cataloged in the Science and Technology Index (SINTA).

Methodology: This research employs an approach that analyzes the content of diverse published studies. Data were obtained by content analysis of articles pertaining to fraud prevention. There are 66 articles indexed in Scopus spanning from Quartile 1 to Quartile 4, sourced from SINTA.

Finding: This study revealed a substantial rise in the publication of papers on fraud prevention in Indonesia since 2015, culminating in 2024. The majority of the study forty-six out of sixty-six articles takes a quantitative approach, with SEM-PLS being the most commonly used data analysis tool. The most commonly used data collection instrument is the survey. Qualitative and mixed methods approaches are still rarely used. Qualitative research typically employs the Miles and Huberman data analysis model, which comprises data reduction, data presentation, and conclusion formulation. These findings provide a comprehensive overview of the direction and methodology of research on fraud prevention in Indonesia.

Conclusion: This research concludes that the academic world's attention to fraud prevention in Indonesia continues to increase, but the methodological approaches used are still dominated by quantitative methods. The minimal use of qualitative and mixed methods indicates an opportunity for deeper exploration of behavioral and contextual aspects in fraud prevention. This finding serves as the basis for the development of further research that is more diverse and in-depth in its analytical approach.

Keywords: Fraud Prevention; Good Corporate Governance; Data Analysis; Scopus; SINTA.

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INTRODUCTION

The Association of Certified Fraud Examiners (ACFE) in its report titled Occupational Fraud 2024: A Report to The Nation explains that fraud is a crime that poses a serious threat to the sustainability of every organization in all industries worldwide. There are three categories of fraud: corruption, asset misuse, and financial statement fraud. During the year 2024, there were 1,921 fraud cases originating from 138 countries, resulting in a total financial loss of more than

3.1 billion US dollars. These cases not only have financial impacts but also harm the reputation and public trust in the affected organizations, which can weaken the overall economic foundation (ACFE Report, 2024).

This is consistent with Transparency International Indonesia's Corruption Perceptions Index research, which found that corruption remains a serious issue in Indonesia, overshadowing both government and industry governance. Although various anti-corruption regulations have been issued and budget allocations for anti-corruption prevention programs have been disbursed, the effectiveness of their implementation is still far from the public's expectations. Data from Transparency International Indonesia in 2024 revealed that Indonesia's Corruption Perceptions Index (CPI) continues to decline, from a score of 38 in 2021 to 34 in 2023, which is the lowest score in the last two decades. This decline indicates a decrease in public trust in the government's commitment and capacity to prevent and eradicate corruption systematically.

Based on two research findings released by ACFE and Transparency International Indonesia, there is an emphasis on the need for strengthening and improvements in preventing fraud. Fraud prevention is emphasized more because it is the most important and strategic stage to avoid losses due to fraud, such as financial losses, reputational damage, and operational disruptions. ACFE emphasizes that preventive measures can be taken by strengthening internal control systems, training employees on anti-fraud, conducting ongoing anti-fraud campaigns, and regularly assessing fraud risk.

From an academic perspective, research on fraud prevention is very important because it can provide an understanding of the effectiveness of various controls and strategies that can be used to identify, reduce, or prevent the occurrence of fraud. In Indonesia, there are studies that examine fraud prevention, particularly in the Science and Technology Index (SINTA). SINTA is an online journal management platform under the Ministry of Education, Research, and Technology. SINTA has connections with Scopus and Google Scholar, allowing it to facilitate public access to high-quality national journals. On SINTA, there is a research study on Fraud Prevention indexed by Scopus that started in 2015.

By analyzing journals indexed in SINTA published from 2015 to 2025, this research aims to gather information on various studies discussing fraud prevention in Indonesia. More specifically, this research aims to answer the following questions: 1) How has the number of studies on fraud prevention in Indonesia developed over the years? 2) How is the distribution of Scopus-indexed research on fraud prevention in Indonesia? 3) What types of research are used to study fraud prevention in Indonesia? 4) What are the research instruments used to study fraud prevention in Indonesia? 5) What data analysis methods are used to research fraud prevention in Indonesia?. This research differs in several aspects from previous studies discussing fraud prevention. First, this study focuses on the entire journals published from 2015 to 2024, all of which have been accredited by SINTA and indexed in Scopus Quartile 1 to 4. Second, this research is specifically dedicated to examining journals on fraud prevention as the main focus of their studies. Third, various parameters are used as the basis for analyzing the content of the research articles.

LITERATURE REVIEW

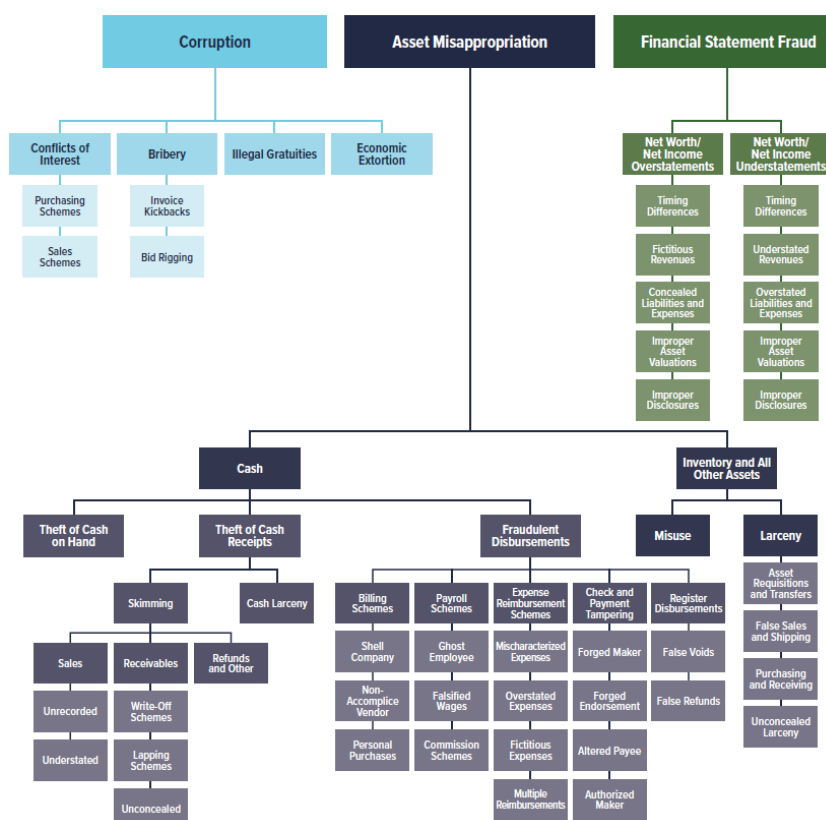
Fraud

Fraud is a threat to the utilization of organizational resources carried out by an individual or a group of individuals to gain personal or group benefits (Haliah et al., 2025). ACFE 2024 explains that fraud is an activity by an individual who abuses their position and authority to enrich themselves or their group. Fraud is an act committed intentionally and deceitfully, with the intent to deprive others of their rights or in a manner that harms others (Black Law Dictionary, 2019). Fraud is also described as an intentional act by one or more individuals in management responsible for governance, employees, or other third parties aimed at obtaining unfair or illegal benefits (ISA 240, 2009).

Fraud Category

Fraud schemes are divided into three main categories: asset misuse, corruption, and financial statement fraud.

Figure 1. Occupational Fraud and Abuse Classification System (The Fraud Tree)



Source: Association of Certified Fraud Examiners (ACFE): Occupational Fraud 2024: A Report to The Nation, 2024

Asset misuse is a scheme where an individual or a group of individuals steal or misuse the resources of the organization they work for. Corruption is a scheme where an individual or a group of individuals abuse their influence in business transactions by violating their duties to

gain direct or indirect benefits, including bribery and conflicts of interest. Meanwhile, financial statement fraud is a scheme where an individual or a group of individuals intentionally misrepresent or omit material information in the organization's financial statements (ACFE Report, 2024).

Fraud Prevention

In an organization, no one is truly free from the risk of committing fraud. Fraud does not depend on the position; both staff and management can commit fraud (Haliah et al., 2025). Fraud prevention is a comprehensive stage that requires the development and implementation of risk management strategies specifically related to fraud, building internal control systems, and transparent corporate governance practices to eliminate fraudulent activities (Lubis et al., 2024). Fraud prevention is an integrated effort to suppress the factors that cause fraud to occur (Wulandari & Nuryanto, 2018 in Khusnah & Soewarno, 2022).

Factors Affecting the Success of Fraud Prevention

Internal audit, internal control, and audit quality conducted consistently can support the success of fraud prevention (Lubis et al., 2024). This is in line with the another research that the internal control system implemented in a structured, systematic, and comprehensive manner also supports the success of fraud prevention conducted by Usman & Sundari, 2024 and Wahyudi et al., 2022. Other factors that support the success of fraud prevention are adequate financial systems and transparency within the organization (Usman & Sundari, 2024). Additionally, from the perspective of human resources, adequate compensation and employee competence also contribute to the success in fraud prevention (Wahyudi et al., 2022).

METHOD

This research is qualitative, using a method that focuses on content analysis of various published research findings. This research method is similar to the research methods used by Sustyarini & Fauzi, 2019.

Data Source

Data were collected through content analysis of articles on fraud prevention. There are sixty-six articles taken from the list of journals accredited by SINTA and indexed in Scopus Quartile 1 to Quartile 4 up to May 2025. The list of SINTA journals can be accessed through <https://sinta.kemdikbud.go.id/>.

Research Instrument

The instrument used in this study is a content analysis guideline for articles that includes the observed related aspects (Table 1). There are five aspects observed in this study, namely 1) the number of publications each year, 2) the distribution of the scopus index, 3) the type of research, 4) data collection instruments, 5) data analysis methods. The number of publications each year is not presented in the table because there are no category divisions, but it will be explained in the findings section.

Table 1. Aspects and Categories Used for Analysis in the Research

Aspek Penelitian	Kategori	
Journal Index (Scopus)	A.1 Quartile 1 (Q1)	A.3 Quartile 3 (Q3)
	A.2 Quartile 2 (Q2)	A.4 Quartile 4 (Q4)
Type of Research	B.1 Qualitative	B.3 Qualitative & Quantitative
	B.2 Quantitative	
Data Collection Instruments	C.1 Survei Method	C.3 Systematic Literature Review
	C.2 Interview	C.4 Survey method and interview
	C.3 Observation, interview, and documentation	
Data Analysis Method	D.1 Data reduction, data presentation, and conclusion	D.8 SEM Lisrel
	D.2 Explanatory Sequential Mixed Methods Design	D.9 SEM PLS
	D.3 Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)	D.10 SEM Sobel Test
	D.4 Hausman diagnostic test statistics	D.11 SPSS
	D.5 Multiple linear regression analysis	D.12 The quasi-experimental method
	D.6 Panel data analysis	D.13 XG boost predictive modelling
	D.7 Probit, logit, and factorial analysis	

Source: Processed research data, 2025

Data Analysis

Each collected research article is then grouped into specific categories based on certain aspects that align with the predetermined categories. This grouping is based on the information shared by the researcher in the abstract, methods, and discussion sections. Then the data is presented in the form of a bar chart.

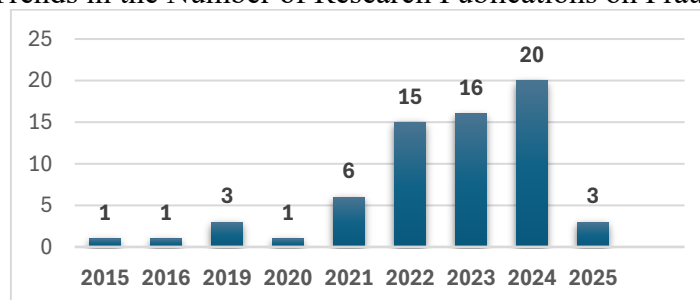
RESULTS AND DISCUSSION

Results

Number of Research Article Publications

The number of published articles indicates the frequency of research conducted over a specific period. According to the graph in Figure 2, articles reviewing fraud prevention have been found since 2015. Based on Figure 2, it is known that in 2024 there were 20 articles published, which is the highest number within the period from 2015 to 2025. In the last five years from 2020 to 2024, there has been a trend of increasing research making fraud prevention the main topic. This is a positive signal for fraud prevention efforts in Indonesia from an academic perspective, as it can certainly serve as a reference and input in the efforts to prevent fraud in Indonesia.

Figure 2. Trends in the Number of Research Publications on Fraud Prevention

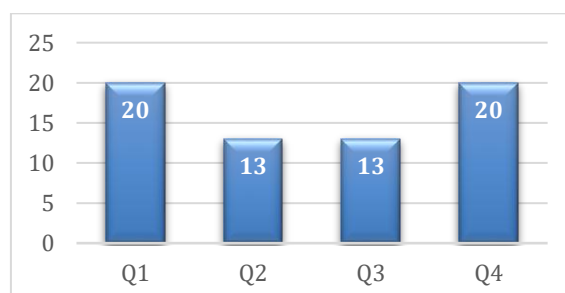


Source: Processed research data, 2025

Journal Index (Scopus)

Among the platforms for journal indexing for global researchers, Scopus is one of the indexing platforms with the most comprehensive citation database. Scopus includes journal publications from various disciplines, including technology, science, health, medicine, social sciences, arts, and humanities. Journals included in the Scopus database are referred to as Scopus-indexed Journals. Scopus-indexed Journals are one of the indicators of quality, credibility, and how a journal impacts the academic community.

Figure 3. Trend in the Number of Scopus-Indexed Articles on Fraud Prevention



Source: Processed research data, 2025

Based on Figure 3, it can be seen that research articles on fraud prevention as the research topic most indexed by Scopus are in Q1 with twenty and in Q4 with twenty. This reflects that the quality of the published research articles meets international standards.

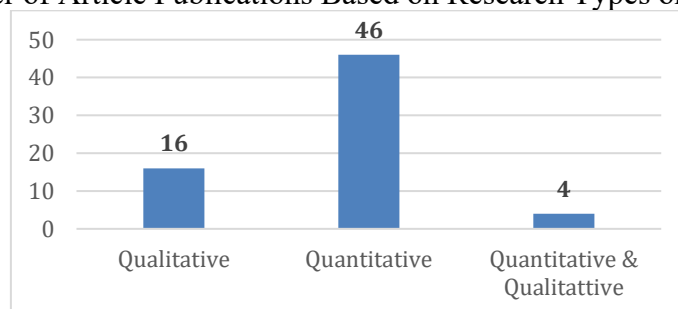
Type of Research

Figure 4 explains that quantitative research is the most widely used type of research compared to other types, with a total of forty-six studies. This is in line with previous studies that state that quantitative research is the most widely used type of research (Susetyarini & Fauzi, 2019). This is in stark contrast to the number of qualitative studies, even though qualitative research has the advantage of being able to define a phenomenon in detail and comprehensively. Qualitative research methods allow researchers to explore individuals' perceptions, experiences, and meanings regarding a phenomenon or issue (Sekaran & Bougie, 2016).

Similarly, the mixed-methods research, which is a combination of quantitative and qualitative approaches, is still very low. Mixed-methods research has its own advantages, as it can fill the gaps in each method, whether quantitative or qualitative. The results of mixed-methods research

also yield more valid and accurate data, because the findings from one method will be confirmed by the other method. Due to the lack of qualitative and mixed-method research, this can be an opportunity for future researchers to conduct studies on fraud prevention using qualitative and mixed methods.

Figure 4. Number of Article Publications Based on Research Types on Fraud Prevention

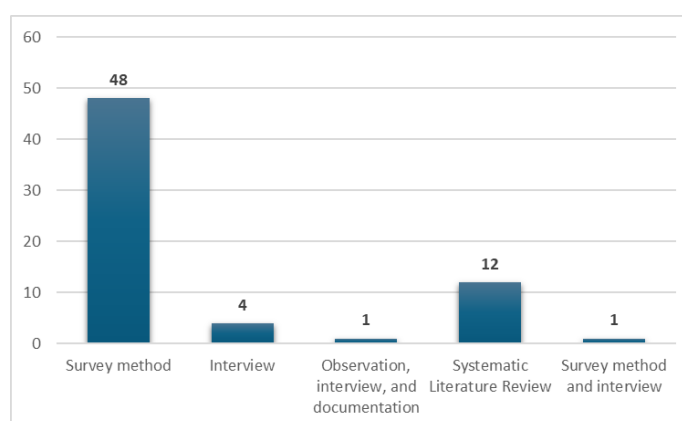


Source: Processed research data, 2025

Data Collection Instruments

In conducting research, researchers require an instrument for data collection. According to Figure 5, it can be seen that the most commonly used data collection instrument is the survey method, used in forty-eight studies. Sheikh et al., (2024), explaining that the survey method has several advantages, namely 1) it has a wide reach to a large and diverse population, 2) it is cheaper and easier compared to other methods, 3) it is flexible in its use to collect various types of data such as factual information, attitudes, opinions, and behaviors, 4) the data produced can be measured and analyzed statistically, making it easier to identify patterns, correlations, and trends, 5) it is more efficient and faster in its use, especially with the use of information technology, 6) the reliability of respondent data is maintained because it can be done anonymously.

Figure 5. Number of Article Publications Based on Data Collection Instruments for Fraud Prevention



Source: Processed research data, 2025

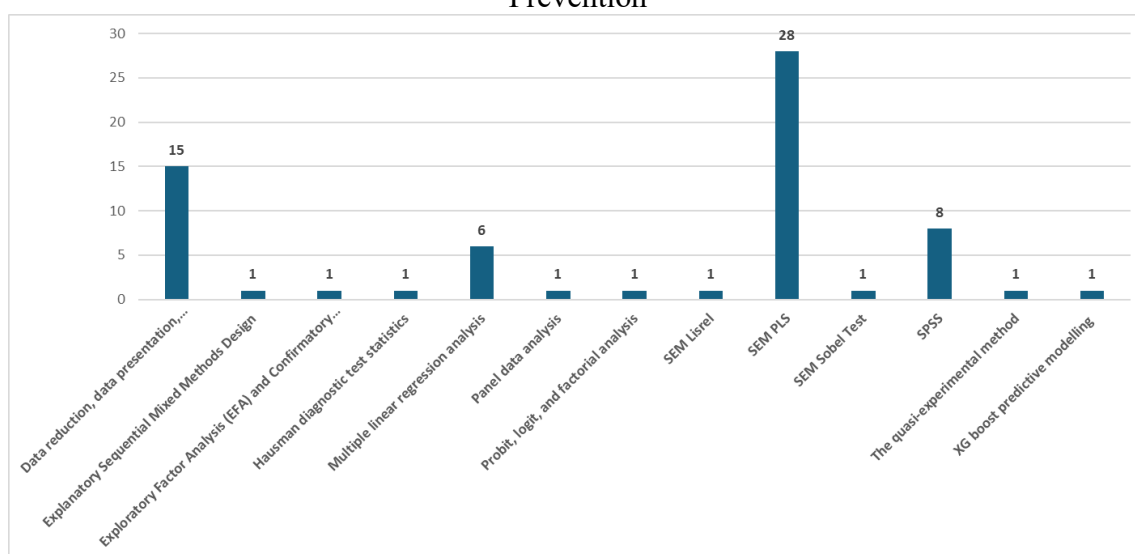
Data Analysis Method

The most commonly used data analysis method is the Structural Equation Modeling - Partial Least Square (SEM PLS) method. According to Sabol et al., (2023), many researchers use SEM

PLS in quantitative research due to its ability to handle complex research models and its capability to predict a population. SEM PLS can also accommodate various measurement philosophies and has the ability to analyze advanced stages such as mediation, moderation, and multi-group analysis.

Meanwhile, for qualitative research, the majority use methods with the stages of data reduction, data presentation, and conclusion. Sekaran & Bougie (2016) explain that these three stages are very important and fundamental in qualitative research. The data reduction stage, for example, where in this stage the researcher selects, codes, and categorizes the most relevant and meaningful data. In qualitative research, the data obtained is very abundant and extensive, so at this stage, data selection will be carried out to ensure that the researcher can focus and not get trapped in irrelevant data. The next stage is to present the data systematically and attractively, for example through direct quotes, tables, graphs, matrices, or diagrams. This presentation aims to facilitate interpretation and pattern recognition, so that researchers and readers can easily understand the findings and relationships in the coded data. The final stage is the conclusion stage, a process that is important to ensure that the interpretation built is truly based on valid and credible data. This verification is carried out through triangulation and consistency checks on the findings.

Figure 6. Number of Article Publications Based on Data Analysis Methods for Fraud Prevention



Source: Processed research data, 2025

Discussion

The results of this study provide a deeper understanding of the trends in fraud prevention research in Indonesia that have been published in Scopus-indexed journals and listed in SINTA during the period from 2015 to 2025. The main findings indicate a significant increase in the number of publications over the past five years, with the peak occurring in 2024. This indicates the increasing attention and awareness of the academic world in Indonesia towards the importance of fraud prevention issues in the context of organizational governance.

One of the findings that caught attention is the dominance of quantitative research methods, which encompass forty-six out of sixty-six articles. This indicates a strong preference for statistical and numerical approaches to measure and analyze variables related to fraud

prevention. However, the low number of qualitative and mixed methods studies opens up opportunities for more in-depth exploration of aspects that also influence the success of fraud prevention.

In terms of data collection instruments, the survey method dominates with forty-eight articles. This reflects the efficiency and wide reach of surveys as a tool for collecting data from a large number of respondents. These findings are also consistent with previous literature that states that surveys are an effective method for identifying patterns of behavior and perceptions regarding anti-fraud policies.

From the perspective of data analysis methods, SEM PLS has become the most popular approach with twenty-eight articles. The use of this method confirms researchers' tendency to build and test complex conceptual models, while simultaneously strengthening the reliability of their findings through advanced statistical approaches. On the other hand, for qualitative research, the majority use the analytical framework developed by Miles and Huberman, namely data reduction, data display, and conclusion drawing. This approach has proven to be very effective in handling large and diverse volumes of qualitative data and allows for systematic and in-depth conclusion drawing.

Overall, the findings of this research enrich the understanding of how fraud prevention issues are studied in Indonesia. This research emphasizes that fraud prevention strategies require an interdisciplinary approach and various complementary analytical methods. Moreover, these results open up opportunities for further research development, especially in maximizing the potential of qualitative and mixed methods approaches, which have so far been rarely utilized.

CONCLUSION

This research departs from the research gap related to mapping trends and characteristics of studies on fraud prevention in Indonesia, particularly those listed in the SINTA index and indexed by Scopus. Although the issue of fraud has a significant impact on organizational sustainability and public trust, there have not been many studies that systematically examine the developments, methodological approaches, and analytical strategies used in studies on fraud prevention in the national context.

Overall, this research found that the number of publications on fraud prevention has increased, especially in the last five years. Quantitative research methods still dominate, with the SEM PLS approach being the most widely used analytical technique. On the other hand, qualitative and mixed methods are still very limited, even though these approaches have great potential to explore contextual and behavioral aspects in fraud cases. The most dominant data collection instrument is surveys, which are chosen for their efficiency and wide data coverage.

The implications of these findings indicate that fraud prevention has become a concern for academics in Indonesia in recent years. However, there is still an imbalance in the methodological approaches used, which can limit the perspective in understanding the dynamics of fraud holistically. These findings can also serve as a reference for policymakers, internal auditors, and organizational governance practitioners in developing fraud prevention strategies based on the latest academic research.

To address the issue of methodological disparity and enrich perspectives in fraud studies, it is recommended that future researchers begin to explore the use of qualitative and mixed methods. The use of approaches such as in-depth case studies, qualitative interviews, and data triangulation can help uncover social, cultural, and psychological dimensions that have not been extensively touched upon by quantitative research.

Future research directions can be focused on longitudinal analysis to monitor changes in the effectiveness of fraud prevention strategies over time, exploration of specific industry contexts, and the integration of digital approaches and information technology in fraud prevention systems. Thus, the research map on fraud prevention in Indonesia can develop into a more comprehensive and applicable framework.

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