

Research Article

The Mystery of Misuse of School Operational Assistance Funds: An in Depth Analysis Using The Fraud Hexagon

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Abstract: This study aims to examine patterns of misuse of School Operational Assistance (BOS) funds across 14 regencies/municipalities in West Papua and Southwest Papua Provinces during the 2022–2024 period. BOS funds constitute a strategic public financing instrument designed to support the operational needs of primary and secondary education; however, their implementation remains vulnerable to governance failures and fraud. The primary research problem addressed is the persistence of weak accountability and internal control mechanisms that enable systemic misuse of education funds. This study employs a qualitative approach using directed content analysis of 42 Audit Reports (LHP) issued by the Audit Board of Indonesia (BPK) on Local Government Financial Statements (LKPD), triangulated with data from the Corruption Eradication Commission's (KPK) Education Integrity Assessment Survey (SPI) and relevant legal documents. The analysis is guided by the Fraud Hexagon framework, which encompasses pressure, opportunity, rationalization, capability, arrogance, and collusion. The findings reveal that opportunity, arising from deficiencies in internal control systems and regulatory compliance, is the most dominant fraud dimension across all regions and years. The study concludes that BOS fund misuse is systemic in nature and underscores the need for strengthened governance structures.

Keywords: Audit Reports; BOS Funds; Education Governance; Fraud Hexagon; Public Sector Fraud.

1. Introduction

Education constitutes a fundamental pillar of national development. In line with the mandate of Law No. 20 of 2003 on the National Education System, the government is obliged to ensure the provision of education that is equitable, high in quality, and just. One of the most strategic instruments supporting this mandate is the School Operational Assistance (BOS) Fund, which has been implemented since 2005. The BOS program was designed to reduce the financial burden on parents, support school operational costs, and expand access to primary and secondary education across Indonesia.

The allocation of BOS funds is substantial. In 2020, the government allocated IDR 54.32 trillion, representing 10.69% of the total education budget of IDR 508.1 trillion, to finance approximately 45.4 million students nationwide. The per-student BOS allocation varies by education level, amounting to IDR 900,000 for primary schools, IDR 1,100,000 for junior secondary schools, and IDR 1,500,000 for senior secondary schools. These funds are intended to cover a wide range of non-personnel operational expenditures, including the procurement of learning materials, maintenance of facilities and infrastructure, payment of honoraria for non-permanent teachers, and the provision of technology-based learning facilities.

However, despite nearly two decades of implementation, the BOS program has faced persistent challenges. Indonesia Corruption Watch (ICW) recorded 51 corruption cases in schools in 2022, the majority of which were related to the misuse of BOS funds. In the following year, the number increased to 59 cases involving 130 suspects, with state financial

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losses reaching IDR 187 billion. This trend indicates that funds intended to improve educational outcomes have increasingly become one of the primary corruption modalities in the education sector.

Evidence from the Corruption Eradication Commission (KPK) further reinforces this concern. Based on the Education Integrity Assessment Survey (SPI Pendidikan), Indonesia's national education integrity index stood at 70.4 in 2022, while the governance dimension was even lower at 69.23. Although the index increased to 73.7 in 2023, it remained classified by the KPK as "corrective," reflecting persistent issues such as fictitious financial reporting, illegal levies, and non-transparent use of BOS funds. More critically, the 2024 SPI revealed that 12% of schools nationwide misused BOS funds, with common practices including procurement mark-ups, illegal fees, and manipulation of accountability reports.

Similar patterns are evident in audit findings issued by the Audit Board of Indonesia (BPK). An examination of 42 Audit Reports on Local Government Financial Statements (LKPD) across 14 regencies/municipalities in West Papua and Southwest Papua during 2022–2024 shows that, on average, 11–15% of education expenditures related to BOS funds were non-compliant, while 5–7% resulted in direct state financial losses. These findings include expenditures that violated technical guidelines, misclassification of accounts, irregular cash reconciliations, and weak internal control systems at both school and local government levels.

Academic studies conducted in various regions further corroborate the existence of systemic problems in BOS fund management. Research in Buleleng (Bali) found that BOS fraud was primarily driven by the personal characteristics of fund managers and weak internal control systems. In Lampung, indications of fraud emerged from delays by thousands of schools in uploading BOS reports, which were suspected to be linked to financial data manipulation. Meanwhile, a study in Ambon employing the Fraud Hexagon framework demonstrated that pressure, opportunity, and arrogance had a significant effect on BOS fraud, whereas rationalization, capability, and collusion were not statistically significant.

Other studies emphasize that weak accountability and transparency constitute the main entry points for BOS fund misuse. Research in Jayapura identified BPK audit findings related to unreported BOS bank interest, deductions for taxes and bank administrative fees, and delays in financial reporting. A study in Bogor highlighted that while accountability positively influences the effectiveness of BOS fund management, transparency alone without strong accountability does not produce a significant impact. Furthermore, organizational culture, whistleblowing mechanisms, and proactive fraud audits have been shown to be effective in preventing BOS fraud in several regions.

Taken together, these findings indicate that the misuse of BOS funds is not an isolated or individual phenomenon, but rather a systemic issue involving multiple dimensions: individual factors (such as the integrity of principals and treasurers), organizational factors (including internal control systems and organizational culture), as well as weaknesses in regulatory frameworks and sanction mechanisms. The large volume of BOS funds, limited financial literacy among school administrators, weak supervision, and minimal community participation collectively expand opportunities for fraud.

Accordingly, a comprehensive analysis is required to identify the root causes of BOS fund mismanagement using a more robust framework than the traditional Fraud Triangle. The Fraud Hexagon framework identifies six drivers of fraud: pressure, opportunity, rationalization, capability, arrogance, and collusion. This framework enables a more nuanced analysis of BOS fund misuse, allowing policy recommendations to move beyond administrative solutions and address underlying behavioral issues, governance weaknesses, and institutional integrity (Gasperz et al., 2023).

Based on this framework, the objectives of this study are to: (1) identify the factors that contribute to fraud in BOS fund management; (2) analyze fraud patterns using the Fraud Hexagon framework; and (3) formulate policy recommendations to strengthen accountability and improve the effectiveness of BOS fund management so that these funds truly benefit students and teachers as the primary beneficiaries.

2. Literature Review

2.1 Theoretical Framework

2.1.1 Concept of School Operational Assistance (BOS) Funds

The School Operational Assistance (BOS) Fund has been a central government fiscal policy instrument since 2005 to finance non-personnel operational expenditures in primary and secondary education. The primary objectives of the program are to reduce the financial burden on parents, expand access to education, and maintain educational quality in accordance with the National Education Standards as mandated by Law No. 20 of 2003.

The allocation of BOS funds is substantial. In 2020, the government allocated IDR 54.32 trillion, representing 10.69% of the total national education budget of IDR 508.1 trillion (Ministry of Finance, 2020). BOS funds are intended to finance non-personnel expenditures, including the procurement of stationery, maintenance of educational facilities and infrastructure, payment of honoraria for non-permanent teachers, and the provision of technology-based learning facilities.

Nevertheless, numerous reports indicate that BOS funds remain vulnerable to misuse. Reports from the Corruption Eradication Commission (KPK) through the Education Integrity Assessment Survey (SPI Pendidikan) for 2022–2024 reveal that 12% of schools continue to misuse BOS funds, primarily through procurement mark-ups, illegal levies, and fictitious financial reporting. Similarly, audits conducted by the Audit Board of Indonesia (BPK) on Local Government Financial Statements (LKPD) in West Papua and Southwest Papua for the 2022–2024 period found that 11–15% of BOS expenditures were non-compliant, while 5–7% resulted in direct state financial losses.

2.1.2 Fraud in Public Fund Management

Definition and Characteristics

Fraud is defined as an intentional act of deception undertaken to obtain personal or group benefits at the expense of others (ACFE, 2022). In the public sector context, fraud commonly manifests in the form of corruption, abuse of authority, gratification, embezzlement, and manipulation of financial statements.

Fraud Theories

Several theoretical frameworks have been developed to explain the drivers of fraud:

- a. Fraud Triangle (Cressey, 1953), which posits that fraud is driven by three factors: pressure, opportunity, and rationalization.
- b. Fraud Diamond (Wolfe & Hermanson, 2004), which extends the Fraud Triangle by adding capability, referring to an individual's ability to exploit system weaknesses.
- c. Fraud Pentagon, which further incorporates arrogance, reflecting a sense of superiority that leads perpetrators to believe they are immune from legal consequences.
- d. Fraud Hexagon (Vousinas, 2019), which adds collusion, resulting in six determinants of fraud: pressure, opportunity, rationalization, capability, arrogance, and collusion.
- e. Relevance of the Fraud Hexagon in the BOS Context

The Fraud Hexagon is considered more comprehensive for uncovering the root causes of BOS fund misuse. Empirical evidence from Gasperz et al. (2023) shows that pressure, opportunity, and arrogance significantly influence BOS fraud in Ambon, while rationalization, capability, and collusion were not statistically significant. This model provides an integrated behavioral, governance, and institutional perspective in detecting fraud within BOS fund management.

2.1.3 Transparency and Accountability in BOS Fund Management

Transparency refers to openness in fund management, including public disclosure of School Budget and Activity Plans (RKAS), realization reports, and the accessibility of financial information to stakeholders. Accountability, on the other hand, represents the obligation of schools to justify BOS fund utilization in accordance with regulations and program objectives.

The literature emphasizes that transparency without accountability tends to be ineffective. A study conducted in Bogor found that accountability significantly influences the effectiveness of BOS fund management, whereas transparency alone does not produce a significant effect. Accordingly, the principles of good governance participation, transparency, accountability, effectiveness, and legal compliance must serve as the foundation of BOS fund management.

2.1.4 Content Analysis

Content analysis is a systematic method for categorizing and analyzing textual data (Steenkamp & Northcott, 2007; Milne & Adler, 1999). In accounting research, this method is frequently used to examine financial statements, disclosure practices, and audit documents.

According to Hsieh and Shannon (2005) as cited in Salle (2020), content analysis can be conducted using three approaches:

Conventional content analysis, where coding is derived directly from the data without predefined theoretical constructs.

Directed content analysis, which is guided by existing concepts or theories (e.g., the Fraud Hexagon).

Summative content analysis, which emphasizes frequency counts, comparisons, and contextual interpretation.

This study adopts directed content analysis, using the Fraud Hexagon as its theoretical framework. BPK audit reports (LHP) are treated as textual data coded according to the six fraud elements, enabling a systematic mapping of BOS fund misuse patterns.

2.2 Empirical Review

This subsection presents a synthesis of recent empirical evidence related to BOS fund management and fraud in the education sector, positioning the Fraud Hexagon as the primary analytical lens. Consistently, prior studies demonstrate that pressure, opportunity, and arrogance are dominant drivers of fraud, whereas strong governance reflected in accountability, internal control systems (ICS), accounting information system quality, whistleblowing mechanisms, and integrity-based leadership significantly reduces fraud risk.

However, most existing studies rely heavily on primary data (surveys) and rarely utilize systematic content analysis of official audit documents. Accordingly, this empirical review not only maps prevailing findings and methodological variations but also highlights the research gap addressed by this study: a systematic mapping of BOS fund misuse patterns through directed content analysis of BPK audit reports across 14 regencies/municipalities in West Papua and Southwest Papua during 2022–2024, thereby producing more objective, documented, and comparable evidence across regions.

2.3 Research Gap and Justification

Despite the growing body of literature on BOS funds and fraud, several conceptual and empirical gaps remain. Previous studies tend to emphasize survey-based findings or limited case studies, while the rich audit evidence contained in the Audit Reports (LHP) of the Audit Board of Indonesia (BPK) has not been systematically exploited to map BOS fund misuse patterns. This study addresses this gap by conducting directed content analysis of 42 BPK audit reports (2022–2024) across 14 regencies/municipalities in West Papua and Southwest Papua.

From a theoretical perspective, the application of the Fraud Hexagon in the BOS context has generally been partial, often focusing solely on pressure and opportunity or extending only to capability (Fraud Diamond). The simultaneous interaction of all six elements pressure, opportunity, rationalization, capability, arrogance, and collusion within audit documents has rarely been examined. This study fills this gap by operationalizing all six Fraud Hexagon constructs as the primary analytical lens for interpreting audit findings.

Another gap lies in the operationalization of indicators. To date, no standardized codebook maps specific audit findings such as account misclassification, procurement mark-ups, fictitious accountability reports, weak cash reconciliation, or fund diversion consistently and replicably into the six Fraud Hexagon elements. This study develops a taxonomy of indicators and decision rules, ensuring that the coding process is transparent, auditable, and replicable across regions.

Methodologically, empirical research remains dominated by primary data and regression models, while official audit documents are underutilized as objective secondary data sources. In fact, BPK audit reports contain chronological narratives of findings, root causes, affected accounts, monetary impacts, recommendations, and follow-up status. By applying directed content analysis, this study maximizes the informational richness of these documents to extract fraud patterns and construct an evidence-based risk map.

Limitations in cross-entity and longitudinal data also characterize previous studies. Few studies utilize multi-year audit panel data to observe variations and trends in findings across local governments. This study addresses this limitation through cross-entity (14 regencies/municipalities) and cross-period (2022–2024) analysis, enabling comparative assessment of fraud intensity, typology, and evolving modus operandi.

From a regional perspective, Papua Barat and Papua Barat Daya remain under-researched despite their high vulnerability to governance challenges. Geographic conditions, disparities in human resource capacity, and limited oversight access may generate distinctive fraud patterns. This study provides a contextualized regional analysis that has received limited attention in prior research.

Novelty also arises from recent policy changes and the digitalization of BOS fund management. Revisions to technical guidelines, reporting channels, and information system integration may shift fraud patterns from traditional practices to more sophisticated forms. By comparing audit reports from 2022–2024, this study captures these dynamics through trend and frequency analysis.

Furthermore, the integration of fraud theory and governance mechanisms remains limited in prior research. While many studies reference internal control systems, transparency, or whistleblowing, few systematically explain how weaknesses in the three lines of defense, regulatory compliance, and internal/external oversight designs facilitate or constrain each Fraud Hexagon element. This study addresses this gap by mapping the relationship between fraud drivers and governance resilience, as reflected in audit root causes and recommendations.

To enhance reliability and validity, this study applies inter-coder reliability procedures (e.g., Cohen's kappa), maintains an audit trail of coding decisions, and triangulates findings with audit metadata (type of audit, monetary impact, follow-up status). These procedures strengthen the credibility and replicability of the results.

In terms of contribution, this study offers theoretical novelty by validating the Fraud Hexagon using audit-based evidence and methodological novelty through a directed content analysis protocol and thematic codebook applicable across regions. Practically, the findings are expected to generate risk maps, red-flag indicators, and reform priorities actionable for local governments, education offices, inspectorates, and schools.

The scientific justification of this study also rests on the need for data-driven policy formulation. By utilizing 42 BPK audit reports, this research provides an objective basis for targeted interventions, such as strengthening controls over high-risk accounts and activities, refining thematic audit focus, and revising technical guidelines to close recurring loopholes. Ultimately, the findings are expected to improve BOS fund efficiency and enhance accountability.

Based on these gaps, the study formulates the following research questions: (1) What are the patterns of BOS fund misuse identified in 42 BPK audit reports (2022–2024) when mapped using the Fraud Hexagon framework? (2) Which Fraud Hexagon elements are most dominant, and how do they vary across regencies/municipalities and over time? (3) How do these patterns relate to governance mechanisms recommended by auditors, and what policy implications can strengthen BOS fund accountability in West Papua and Southwest Papua?

3. Research Method

3.1 Research Design: “The Mystery of BOS Fund Misuse”

This study adopts a qualitative approach using content analysis, designed as a multiple-case study involving 14 regencies/municipalities. This design aligns with the research objective: to objectively map patterns of BOS fund misuse as documented in official audit records. Rather than relying on respondents' perceptions, content analysis enables the researcher to “read” accounting practices and governance arrangements as narrated by auditors in Audit Reports (LHP). By treating audit narratives as units of meaning, the study prioritizes evidence that is documented, verifiable, and traceable.

Following Hsieh and Shannon (2005), the study applies directed content analysis, in which a priori categories are derived from the Fraud Hexagon framework (pressure, opportunity, rationalization, capability, arrogance, and collusion). To capture regional and temporal dynamics, the analysis is complemented with a summative element frequency and proportion calculations for each fraud dimension thereby producing not only thematic

narratives but also an intensity profile of risk. This hybrid strategy is selected because it is sufficiently structured to ensure consistency through a codebook while remaining flexible enough to capture variations in auditors' wording across reports.

3.2 Research Object, Scope, and Unit of Analysis

The object of this study is BOS fund management across 14 regencies/municipalities in West Papua and Southwest Papua, within the fiscal years 2022–2024. This regional focus is justified not only by its public relevance but also by geographic constraints and institutional capacity differences that may generate distinctive audit patterns. The three-year period is intended to capture trends whether traditional modus operandi persist or shift in response to regulatory changes and the digitalization of reporting systems.

The unit of analysis is each BOS-related audit finding contained in BPK audit reports on LKPD, particularly within sections on compliance, internal control systems (ICS/SPI), and other relevant disclosures. Each audit finding is treated as a standalone unit of meaning that includes the object, affected account(s), modus, root cause(s), and recommendations. These units are then mapped onto the Fraud Hexagon elements. If a finding contains multiple elements, the study assigns a primary code (dominant root cause) and a secondary code (reinforcing factor) to avoid biased double counting.

3.3 Data Type and Sources

This study uses secondary data in the form of 42 BPK audit reports (LHP) on LKPD (14 entities \times 3 years). Audit reports are selected because they provide structured descriptions of events, evidence, auditors' conclusions, and recommendations, making them well-suited for content analysis requiring explicit informational traces. An additional advantage is that LHPs follow standardized reporting conventions and audit methodologies, enabling comparability across documents.

Supporting data include BOS regulations and technical guidelines, summaries of audit follow-up actions, and relevant management letters. These supplementary documents are not analyzed as primary units but are used to verify context (e.g., interpretation of technical terms, legal references, and alignment of recommendations). No primary data (interviews/surveys) are collected to maintain an audit-evidence focus and avoid recall bias.

3.4 Data Collection Technique (Document Harvesting)

Data collection begins with an inventory of all LHPs by entity and year, including document identifiers (e.g., report number, audit period, audit type). The next step is a systematic search of BOS-relevant sections using key terms such as "BOS," "RKAS," "SP2B/SPB," "technical guidelines," "procurement," "school assets," "cash reconciliation," "accountability report (LPJ)," "tax," "bank interest," and commonly used auditor synonyms. This search is conducted twice: (1) manual review of the table of contents and findings list; and (2) digital keyword searching when soft files are available.

Relevant findings are extracted into a structured worksheet (spreadsheet) containing variables such as document ID, year, entity, finding summary, affected account/activity, monetary value (if disclosed), root causes, recommendations, follow-up status, and Fraud Hexagon coding results. To enhance consistency across documents, a glossary is developed (e.g., SP2B vs. SPB, meaning of "non-compliance with technical guidelines," "illegal levies," "mark-up") and applied as a shared reference.

3.5 Operational Definitions and Fraud Hexagon Codebook

The Fraud Hexagon operationalization is formalized through indicators and decision rules. Illustrative examples include:

- a. Pressure: budget absorption targets, cash constraints, urgency pressures
- b. Opportunity: weak internal controls, poor segregation of duties, inadequate authorization, irregular cash reconciliation
- c. Rationalization: normative justifications (e.g., limited HR capacity, insufficient understanding of guidelines)
- d. Capability: the ability/position to manipulate (e.g., document fabrication, system access)
- e. Arrogance: repeated findings, ignoring prior recommendations, perceived immunity

f. Collusion: involvement of vendors/other actors (e.g., unlawful direct appointments, unreasonable pricing)

Each indicator is supported by examples of common LHP wording used as red flags. The codebook also establishes coding priority when one finding contains multiple elements. Standard rules include: (1) identify the dominant root cause as the primary code based on the auditor's narrative; (2) assign a secondary code where a reinforcing factor is materially present; and (3) where rationalization/arrogance is not explicit, use linguistic proxies frequently used by auditors (e.g., "the auditee argued...", "lack of understanding of technical guidelines..."). These rules ensure coding consistency and auditability across coders.

3.6 Data Analysis Procedure

The analysis begins with a pre-analysis stage: skimming all audit reports to identify BOS related sections and map document structures. A pilot coding is then conducted on three LHPs from different entities to test category clarity, refine operational definitions, and standardize recurring phrases. Results from the pilot stage are used to finalize the codebook.

Subsequently, directed coding is applied to all extracted findings, followed by summative tabulation (frequencies and proportions per element). Cross-entity and cross-period comparisons are performed by constructing a matrix of entity \times year \times fraud element to detect recurring findings and shifts in modus operandi. Finally, thematic synthesis integrates numerical patterns with narrative interpretation, addressing how fraud patterns occur, their root causes, their relation to BPK recommendations and governance mechanisms (ICS/SPI, transparency, accountability), and policy areas requiring strengthening.

1. Pre-analysis
Skim all audit reports (LHPs); identify BOS-related sections; map document structure.

2. Pilot Coding
Code three LHPs from different entities; assess category clarity; revise definitions.

3. Codebook Finalization
Define indicators and decision rules; prepare technical glossary.

4. Open-Directed Coding
Code findings using Fraud Hexagon; allow multi-coding if relevant.

5. Summative Tabulation
Calculate frequencies and proportions; record monetary values if available.

6. Cross-Entity & Temporal Comparison
Matrix: region \times year \times element; identify recurring patterns.

7. Thematic Synthesis
Integrate patterns, root causes, audit recommendations, and governance.

Figure 1. Analytical Procedure Flow Diagram.

Source: Author's data processing

3.7 Output Indicators and Summary Calculations

Summative analysis produces indicators such as: frequency of each fraud element by entity and year; element proportions (element frequency divided by total BOS findings per entity/year); and monetary exposure (aggregation of disclosed amounts where available). These indicators support a risk map showing dominant elements, their concentration, and estimated financial exposure. The numerical results are not intended for population-level statistical inference, but rather as objective support for thematic interpretation.

Optionally, a Simple Risk Score can be constructed by normalizing frequencies per element and aggregating them (equal weighting or analytically justified weights). This score facilitates comparison across regencies/municipalities and prioritization of reform areas. All

calculations are documented in workpapers, including assumptions where monetary values are not explicitly disclosed.

3.8 Research Ethics

This study relies exclusively on public or institutional documents and does not include personal identifiers. Audit report excerpts are quoted only as necessary and referenced clearly without altering the auditors' meaning. In interpreting findings, the study separates facts (auditors' statements) from analytical interpretations (mapping to Fraud Hexagon) to preserve fairness.

Data are stored in protected media and used solely for academic purposes. Where potentially sensitive information is encountered, contextual caution is applied for example, avoiding stigmatizing a single entity without a fair comparative basis. The do no harm principle is maintained by emphasizing constructive recommendations.

3.9 Study Limitations

First, audit language in LHPs does not always explicitly document rationalization or arrogance; identification of these elements may therefore rely on linguistic proxies. Second, monetary values are not always disclosed or cannot always be linked to specific accounts, requiring caution in value-based analyses. Third, there is a potential editorial selection bias, as auditors may emphasize particular areas based on audit mandates.

To mitigate these limitations, the study applies pilot coding, a detailed codebook, inter-coder reliability testing, and internal triangulation across years and entities. Where data are incomplete, the study explicitly labels missing values and avoids overgeneralization. Findings are framed as an audit-document-based risk map rather than legal verification.

3.10 Research Timeline and Workflow

The workflow follows the stages described above: (a) collection and inventory of audit reports; (b) pilot coding and codebook finalization; (c) coding of 42 LHPs; (d) tabulation and comparative analysis; (e) development of risk maps and recommendations; and (f) report writing. Each stage produces measurable deliverables (e.g., final codebook, frequency matrices, multi-year trend maps), enabling auditable progress tracking.

Time allocation is concentrated on coding and internal validation because these stages determine result quality. The study concludes with a synthesis phase integrating numerical indicators (frequency/proportion/value) with narrative evidence (root causes/recommendations) into a policy-oriented risk map that is actionable for local governments, education offices, inspectorates, and schools in West Papua and Southwest Papua.

4. Results and Discussion

4.1 Visualization of BOS Fund Fraud Risk Patterns 2022–2024

The following is a *stacked bar chart* visualization that illustrates the frequency. The following image presents a stacked bar chart showing the frequency of occurrence of the six elements of the Fraud Hexagon in BOS Fund findings in 14 districts/cities in West Papua and Southwest Papua provinces based on the results of the BPK's coding of 42 LHPs on LKPDs for 2022–2024. This visualization shows the distribution of fraud dimensions recorded in official audit documents, and is the main basis for reading patterns of BOS irregularities across regions and time.

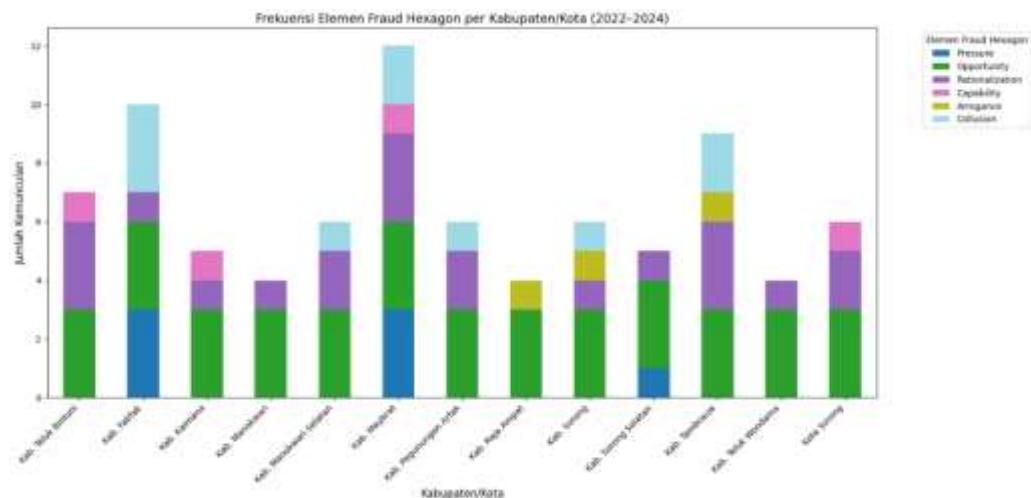


Figure 2. Frequency of Fraud Elements per District/City (2022–2024).

The results confirm that:

- 1) *Opportunity* is the most dominant dimension of fraud, appearing in almost all districts and years. This is in line with the findings of the BPK RI audit report, which states that common weaknesses in BOS management include the absence of a spending approval mechanism (SP2B/SPB), account classification errors, and the lack of adequate separation of functions (BPK RI, 2023).
- 2) Rationalization often appears in the form of administrative reasons such as "not knowing the latest regulations" or "limited human resource capacity," which are quoted directly from the narrative in the audit report. This is not an assumption, but part of the root cause written by the auditor in the "cause" column of the audit document.
- 3) *Collusion* is recorded in the LHP in districts such as Fakfak and Maybrat, particularly in findings related to the procurement of goods/services that do not comply with regulations, the use of partners without valid contracts, or unwritten agreements with providers.
- 4) *Pressure* appears more limited, but is explicitly stated in several LHPs as a result of delays in fund disbursement, year-end absorption targets, or simultaneous administrative burdens. For example, the 2023 Fakfak LHP states that BOS management was carried out hastily because the funds were only disbursed in November.

4.2 The Role of the KPK's SPI as a Reflection of Field Perceptions

The KPK's Education Integrity Assessment Survey (SPI) is an official source that measures the perceptions of education implementers regarding integrity and governance risks. This data is very useful for triangulating audit findings because it captures aspects of institutional behavior and culture that are not always recorded in LHPs.

Some key findings from the KPK Education SPI relevant to this research include:

- 1) The 2022 SPI shows that the national education integrity index stands at 70.4, with governance at 69.23 (KPK RI, 2022). This category is classified as "corrective," meaning that systemic improvements are needed.
- 2) In the 2023 SPI, the index increased to 73.7, but the KPK maintained its corrective status, mainly because there were still indications of fictitious reports and a lack of transparency in the School Operational Assistance (BOS) program (KPK, 2023: Executive Summary of the Education SPI).
- 3) SPI 2024 noted that 12% of educational units in Indonesia misused BOS funds, with the main modes being mark-ups on procurement, illegal levies, and manipulation of reports (KPK, 2024: SPI Education Sector Dissemination Data).

This SPI data reinforces the narrative in the BPK Audit Report: while the audit cites a weak understanding of regulations as the root of the problem, SPI confirms that risk perception and awareness of BOS implementers regarding integrity remain weak.

4.3 Integration of Audit and SPI in the Fraud Hexagon Framework

When the BPK Audit Report and the KPK SPI are read together within the Fraud Hexagon framework (Vousinas, 2019), a more comprehensive and documented understanding emerges.

For example:

- 1) *Opportunity* arises due to weaknesses in the internal control system (source: BPK RI Audit Report 2022–2024, all districts).
- 2) *Rationalization* is reinforced by the KPK SPI's finding that implementers' understanding of BOS regulations is still low (KPK SPI 2022–2024).
- 3) *Collusion* is supported by audit evidence of illegal procurement, as well as the 2024 SPI, which mentions procurement mark-ups as a common modus operandi.
- 4) *Pressure* appears explicitly in the Fakfak, Maybrat, and South Sorong Audit Reports, and is contextually supported by the SPI, which cites the reporting burden as one of the technical obstacles.

5. Comparison

Compared to prior studies that rely on perception-based survey data, this research provides audit-based evidence. This study advances the existing literature on BOS fund management and public sector fraud by offering a systematic, audit-based comparison that differs substantively from prior research in terms of data source, analytical framework, methodological rigor, and empirical scope.

First, in contrast to most prior studies that rely predominantly on perception-based survey data or interviews (e.g., Wardani et al., 2019; Purwatiqasih et al., 2023; Nawawi et al., 2024), this research utilizes official audit reports (LHP BPK) as its primary data source. Audit reports provide documented, verified, and legally grounded evidence of non-compliance, control weaknesses, and financial irregularities. As a result, the findings of this study are less vulnerable to respondent bias and social desirability effects, offering a more objective depiction of BOS fund misuse.

Second, compared to earlier studies that mainly employ the Fraud Triangle or Fraud Diamond frameworks, this study applies the Fraud Hexagon in a comprehensive and simultaneous manner. While previous research often confirms the dominance of pressure and opportunity, or extends analysis only to capability, this study demonstrates based on audit narratives that opportunity remains the most structurally dominant driver, reinforced by rationalization and collusion, with pressure, capability, and arrogance acting as contextual amplifiers. This finding refines prior empirical results (e.g., Gasperz et al., 2023) by showing how these elements coexist within documented governance failures rather than self-reported perceptions.

Third, methodologically, this study differs from the prevailing regression-based and SEM-PLS approaches by implementing directed content analysis with a formalized codebook and decision rules. Unlike earlier qualitative studies that describe audit findings descriptively, this research introduces replicable coding procedures, inter-coder reliability testing, and summative tabulation, enabling cross-entity and longitudinal comparison. This approach bridges qualitative depth with structured comparability an area largely absent in prior BOS research.

Fourth, in terms of empirical scope, most existing studies are single-region, single-year, or institution-specific. By contrast, this study analyzes 42 audit reports across 14 regencies/municipalities over three fiscal years (2022–2024). This multi-entity, multi-period design allows for the identification of recurring patterns, regional concentration of risks, and shifts in fraud modus operandi, particularly in response to regulatory updates and reporting digitalization an aspect rarely explored in earlier work.

Fifth, when compared with governance-focused studies emphasizing transparency, accountability, internal control systems, and whistleblowing, this research provides a clearer explanation of how and where governance mechanisms fail. Rather than treating governance variables as abstract constructs, this study links them directly to audit-identified root causes and specific Fraud Hexagon elements, thereby clarifying the interaction between fraud drivers and weaknesses in the three lines of defense.

Finally, from a regional perspective, this study contributes novel evidence from West Papua and Southwest Papua, regions that remain under-represented in the BOS and fraud

literature despite high governance vulnerability. The findings demonstrate that geographical constraints, capacity disparities, and limited oversight access materially shape fraud risk patterns an insight largely absent from studies conducted in more administratively mature regions.

Overall, compared to the state-of-the-art, this study extends the literature by shifting the analytical focus from perceived fraud risk to documented fraud patterns, from isolated variables to integrated fraud governance dynamics, and from single-context analysis to comparative, longitudinal audit evidence. These contributions position the study as a methodological and empirical advancement in public sector fraud research, particularly in education financing.

6. Conclusions

6.1 Conclusion

This study concludes that the misuse of BOS funds in West Papua and Southwest Papua is systemic and dominated by weaknesses in internal controls (opportunity). Behavioral and relational factors also reinforce the risk of fraud, requiring a comprehensive preventive approach.

6.2 Recommendations

Research recommendations include strengthening the internal control system, improving regulatory literacy for BOS managers, public-based reporting transparency, and consistent enforcement of sanctions for violations.

6.3 Research Contribution

This research contributes to the public sector fraud literature by applying the Fraud Hexagon based on audit data and integrity surveys, and provides a BOS risk analysis model that can be replicated in other regions.

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