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The Role of Planning and Leading Functions in Asset Misappropriation Prevention: A Case Study of a Medical Device Distributor

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ABSTRACT

This study aims to analyze the planning and leading functions in fraud prevention efforts at the firm and to formulate their strengthening based on the COSO Enterprise Risk Management Integrating with Strategy and Performance (COSO ERM 2017) perspective. This research offers novelty by qualitatively exploring asset misappropriation within the medical device distribution sector through the lens of basic management functions. The research employs a qualitative approach with a holistic single-case study design. Data were obtained through questionnaires, semi-structured interviews, participant observation, and document studies. The data were analyzed using an interactive model incorporating triangulation, comparative analysis, and fraud risk assessment based on likelihood and impact levels. The results of the study show that the firm already possesses strategies, short-term objectives, work plans, procedures, approval workflows, division of responsibilities, and resources. However, this planning has not yet fully integrated fraud risks, risk tolerance, documented mitigation plans, and periodic evaluations. Regarding the leading function, directions have been provided, but not always consistent with established procedures, particularly during urgent transactions. Policy communication, segregation of duties, accountability enforcement, and the application of rewards and sanctions have also not been implemented consistently. This study concludes that the planning and leading functions must be strengthened through structured fraud risk management, consistent leader direction, segregation of duties, periodic communication, and continuous evaluation and follow-up with proper documentation. This study was conducted in a medical device distributor firm in Jakarta. Further research is needed in other contexts and organizations to understand the contribution of internal control through the planning and leading functions in preventing fraud.

Keywords: Planning Function, Leading Function, Fraud Prevention, COSO ERM 2017

INTRODUCTION

Fraud is a form of misconduct that frequently occurs in various organizations, including medical device distributor companies. Fraud in medical device distributor companies can have serious consequences beyond internal losses, namely by creating unreasonable prices throughout the medical device supply chain. Healthcare providers may choose to increase patient's treatment costs or purchase cheaper medical devices of lower quality in order to balance their budgets. This effect not only burdens the finances of the state and society, but may also compromise the safety and effectiveness of medical devices used for patients.

According to the results of the Association of Certified Fraud Examiners (2026) survey, which was based on an analysis of 2,402 investigated occupational fraud cases, asset misappropriation is the most frequently occurring type of case worldwide, with 508 billing-scheme cases and 306 expense-reimbursement-scheme cases; the healthcare industry ranks fourth by number of reported cases. PT XYZ, a medical device distributor, faces indications of asset misappropriation in the form of billing and expense reimbursement schemes. Indications of billing schemes include unreasonable pricing, duplicate invoices, and fictitious vendors. In expense reimbursement schemes, the indicated practices include mischaracterized expenses, in which personal expenses are disguised as firm operating expenses; fictitious expenses supported by false invoices; and overstated expenses supported by handwritten receipts.

According to Wolfe & Hermanson (2004), fraud cannot occur without an individual who has the capability to recognize and exploit weaknesses in mechanisms (opportunity) that provide a path for fraud to occur. Vousinas (2019) added that collusion can worsen the corporate environment by fostering a culture of dishonesty, making fraudulent acts more difficult to detect and stop. Thus, fraud may occur not because strategies, procedures, role and responsibility assignments, and oversight are absent, but because weaknesses exist in the firm's control mechanisms, ethical culture, communication and information, and tone at the top.

The fraud hexagon theory proposed by Vousinas is supported by the empirical findings of Damayanti & Hamzah (2008) ,which indicate that the existence of procedures in e-procurement does not guarantee effective procurement controls. In addition, studies by Dinata et al. (2026), using a social-cognitive approach, and Nainggolan (2024) show that preventing asset-misappropriation schemes requires more than internal controls; it also requires the development of an ethical culture, reflective leadership, a supportive space for dialogue that promotes moral awareness, stronger human-resource integrity, and an early-reporting system.

Therefore, fraud-prevention efforts are important and should be pursued through fraud risk management integrated into organizational activities, including the planning and leading functions. The COSO Enterprise Risk Management Integrating with Strategy and Performance framework (COSO ERM 2017) has empirical support from Harahap & Nengzih (2021), who found that its implementation positively affects fraud prevention. Similarly, Wahyuni & Novita (2021) found that implementation of COSO ERM 2017 has a significant positive effect on strategic planning. It is therefore relevant as an analytical framework because it places risk management in an integrated relationship with organizational strategy and performance, which

can support asset-misappropriation risk management through the planning and leading functions.

Previous studies have generally measured the effectiveness of COSO ERM 2017 implementation in companies, such as Harahap & Nengzih (2021) at PT Taspen Persero and Wahyuni & Novita (2021) at PT Bank Syariah Mandiri, using quantitative methods. In addition, Damayanti & Hamzah (2008) measured the implementation of e-procurement for goods and services controls; Herdiyanto et al. (2022) measured the effectiveness of whistleblowing systems and organizational culture in preventing fraud; and Dinata et al. (2026) and Nainggolan (2024) analyzed fraud prevention from a social-cognitive perspective through fraud triangle and fraud diamond theories; Danduru et al. (2025) found that ethical leadership strengthened the relationship between good corporate governance and fraud prevention but did not significantly moderate the relationship between internal control and fraud prevention. This finding suggests that the role of leadership in relation to formal control mechanisms remains open to further examination.

This study aims to analyze the role of the planning and leading functions in preventing asset misappropriation at PT XYZ through a holistic approach using the five components and twenty principles of the COSO ERM 2017 framework, in order to understand the areas requiring reinforcement in these functions to support asset-misappropriation prevention at PT XYZ. This study differs from previous research in its research object, data-collection techniques, data-analysis methods, and objectives. It is expected to make a practical contribution to organizations, particularly PT XYZ, in formulating internal policies, identifying areas vulnerable to fraud, and supporting internal evaluation, as well as an academic contribution to the development of risk-management discipline, particularly concerning the relationship between management functions and fraud prevention.

RESEARCH METHOD

This study is qualitative research using a holistic single-case study design. The case-study design was used to understand the phenomenon of asset misappropriation in depth, detail, comprehensively, and in an integrated manner by analyzing the roles of the planning and leading functions in prevention efforts. Data were obtained from multiple information sources, providing valuable insights for problem solving, evaluation, and strategy formulation (Cooper & Schindler, 2014).

Yin (2018) distinguishes case studies into two design types, which are single-case and multiple-case. This study uses a single-case design because the object, location, and situation under study are PT XYZ, a medical device distributor in Jakarta. The roles of the planning and leading functions in asset-misappropriation prevention are analyzed according to their respective aspects, while the two functions are treated holistically and as interrelated in understanding the overall context of asset-misappropriation prevention (Sugiyono, 2013).

This study uses two types of data: primary and secondary. Primary data were obtained through questionnaires, interviews, and participant observation. The questionnaire was closed-

ended and distributed to purposively selected respondents, namely PT XYZ employees directly involved in operational activities with potential fraud risks and employees serving as internal controls in PT XYZ's finance function. Questions were prepared based on dimensions and indicators using a 1–5 Likert scale with the following weights:

1 = Strongly Disagree 4 = Agree
2 = Disagree 5 = Strongly Agree
3 = Somewhat Disagree

Indicators of the planning and leading functions were developed based on 15 COSO ERM 2017 principles in the Governance & Culture, Strategy & Objective-Setting, Review & Revision, and Information, Communication & Reporting components, and were also used in interviews and observation. Indicators of fraud were developed based on the fraud hexagon theory developed by Stamler et al. (2014) as a practical approach to contemporary situations, were aslo used as supporting evidence to assess whether indications of asset misappropriation persisted under the existing planning and leading practices at PT XYZ.

Table 1. Dimensions and Research Indicators

No	Dimension	Indicator
1	Planning	Clarity of structure, roles, responsibilities, and authority
2	Planning	Clarity of objectives and direction for fraud prevention
3	Planning	Planning for evaluation, monitoring, and follow-up
4	Planning	Planning of policies and procedures
5	Planning	Planning of resources and competencies
6	Planning	Consideration of fraud risk in business processes
1	Leading	Leader’s direction on integrity and fraud prevention
2	Leading	Leader’s support for compliance and reporting of irregularities
3	Leading	Leadership exemplary and consistency
4	Leading	Communication and socialization of policies/procedures
5	Leading	Development of competencies and a risk-aware culture
6	Leading	Enforcement of accountability, evaluation, and follow-up
1	Fraud Indicators	Fairness and consistency of rewards and sanctions
2	Fraud Indicators	Consistency in applying rules and procedures
3	Fraud Indicators	Pressure to achieve targets
4	Fraud Indicators	Tolerance of irregularities
5	Fraud Indicators	Awareness of the consequences of actions

The questionnaire was used to obtain an initial picture of employees' perceptions of the planning and leading functions at PT XYZ, particularly at the operational level. The questionnaire was analyzed using descriptive quantitative analysis with a scoring (weighted mean) method, without hypothesis testing or inferential analysis such as linear regression, because this study does not aim to test causal relationships between variables (Cochran, 1977).

$$\bar{y}_h = \frac{\sum_{i=1}^{n_h} y_{hi}}{n_h} = \frac{(y_1 + y_2 + y_3 + \cdots + y_n)}{n_h}$$

$$\bar{y} = \sum_{h=1}^{L} w_h \, \bar{y}_h = \frac{\sum_{h=1}^{L} n_h \, \bar{y}_h}{n}$$

After the calculations were completed, the combined group mean for each assessment aspect was interpreted using the 1–5 scale interval, with the following descriptions:
1,00 – 1,80 = Very poor
1,81 – 2,60 = Poor
2,61 – 3,40 = Needs attention
3,41 – 4,20 = Good
4,21 – 5,00 = Very good

Semi-structured interviews were conducted, allowing questions to develop according to informants' responses. Interviews served as the main qualitative data source alongside the questionnaire, which was not statistically analyzed but was used to obtain more in-depth information, clarify findings, and provide contextual explanations for the questionnaire results through statements from relevant parties: the Head of Procurement, Head of Finance, Finance Staff in Accounts Payable and Treasury, Head of QMS, Sales Executive, Assistant Manager of Product, and National Sales Manager.

Participant observation was conducted through the researcher's involvement in the firm's operational activities, particularly the examination, recording, payment, and monitoring of transactions in the Finance/Treasury department. The researcher directly observed process flows, task allocation, the use of documents and systems, implementation of procedures, and deviations or control weaknesses arising in practice. The observations were used to probe interviews and to reconstruct processes that had not been formally documented and were carried out based on verbal instructions and prevailing work practices at PT XYZ.

Secondary data were obtained through document studies involving firm SOPs, manual forms or documents used to submit payment requests, transaction records in the ERP, International Financial Reporting Standards (IFRS), guidance articles on the COSO ERM 2017 framework published by COSO, literature, and previous studies related to planning and leading functions in fraud prevention, internal control, and risk management based on COSO ERM 2017.

Data analysis in this study used the Interactive Model by Miles, Huberman, and Saldaña as cited in Sugiyono (2013). The analysis consisted of data reduction, data display, and conclusion drawing in a circular and interactive manner through continuous verification, returning to data or information collection when information gaps were found within or between data sources, until convergence was achieved. This ensured that findings regarding the planning and leading functions in asset-misappropriation prevention had high credibility through data-source triangulation.

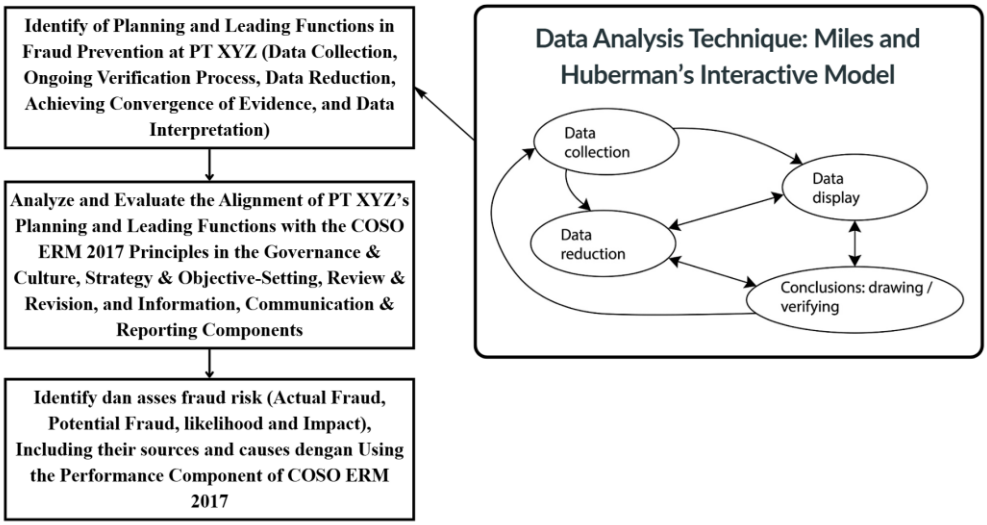


Figure 3. Data Analysis Process

Converged data were interpreted by identifying patterns, relationships, and trends related to the planning and leading functions, producing a picture of the actual conditions at PT XYZ. The interpretation results were compared with the ideal principles in the COSO ERM 2017 framework to identify gaps between actual and ideal conditions. Based on the comparative analysis, the Performance component of COSO ERM 2017 was used to identify and analyze risks arising from weaknesses in the planning and leading functions. This stage began with risk identification by determining the risk event, followed by risk analysis covering the causes and impacts that could affect the achievement of organizational objectives.

RESULT AND DISCUSSION

Descriptive Analysis

The object examined in this study is the implementation of the planning and leading functions in efforts to prevent asset misappropriation at PT XYZ, particularly in the payment processes for expense reimbursements and vendors. This exploratory study collected data through triangulation techniques: questionnaires, interviews, participant observation, document studies, and literature review. A questionnaire was distributed through Google Forms to 41 purposively selected respondents, who were PT XYZ employees directly involved in operational activities with potential asset-misappropriation risks and employees responsible for internal controls within PT XYZ's finance function.

Table 2. Distribution of Respondents and Number of Research Questions by Respondent Group

Component	Finance	Procurement	Sales, Product, HRGA
number of respondents	10	7	24

number of Planning questions	15	17	14
number of Leading questions	15	16	14
number of Fraud Indicator questions	10	10	10

Questionnaire item formulation and number of questions or statements in the questionnaire were adjusted to the work characteristics of each work unit because each unit has a different role in the business process. Differences in wording and number did not change the substance of the indicators, but were intended to make the questions more relevant and understandable in the respondents' work context.

Interview data were obtained from 8 informants. Two informants from the same department who participated in the interview together in a single session and are therefore presented under one informant code. The informants are detailed in the following table:

Table 3. Informant Data

Informant Code	Management Level	Gender
INF-01	Middle management	Female
INF-02	First-line management	Male
INF-03	First-line management	Male
INF-04	First-line management	Male
INF-05	Middle management	Male
INF-06 (2 Informants)	First-line management	Male
INF-07	Middle management	Male

Questionnaire Analysis Result

Based on the data collected and processed using the scoring method, an overview was obtained of respondents' perceptions of the planning and leading functions in fraud prevention.

Table 4. Average Scores for Planning, Leading, and Fraud Indicators

Dimension	Finance	Procurement	Sales, Product,	$\bar{y}$
Planning	4.15	4.06	3.98	4.04
	Good	Good	Good	Good
Leading	3.67	3.52	3.60	3.60
	Good	Good	Good	Good
Fraud	3.31	3.30	2.98	3.11
	Needs	Needs	Needs	Needs

The result of questionnaire data show that the planning function received a combined average score of 4.04, which falls in the good category. This indicates that the planning function at PT XYZ has operated fairly well in supporting fraud-prevention efforts. Each respondent group also provided relatively consistent assessments, indicating that planning, including the

existence of procedures and procurement, claim, and payment mechanisms has generally been understood and considered supportive of asset-misappropriation prevention.

The leading function received an overall average score of 3.62 and was also in the good category. This indicates that the leading function was considered to support fraud prevention sufficiently, particularly through supervisors' directions, support for following procedures, and leaders' involvement in work processes. Meanwhile, indicators of asset misappropriation received an overall average score of 3.11 and were categorized as needing attention. This value indicates that symptoms, conditions, or gaps remain that could potentially create asset-misappropriation risks.

Triangulation using interview data, document studies, and literature was used to analyze more deeply the conditions or gaps in the planning and leading functions that could potentially give rise to asset misappropriation. The triangulation results are presented in the following table.

Table 5. Data Triangulation Results

Function	Elaborative coding	Interview results	Questionnaire results	Document-study results	Triangulation results
Planning	Clarity of structure, roles, responsibilities, and authority	Roles are understood, but work outside job descriptions and overlapping functions exist.	Roles and authorization are recognized, but some areas require confirmation.	The structure, SOPs, and authorization are available, but segregation of duties is not yet fully adequate.	A formal structure exists, but it is not yet fully aligned with practice and segregation of duties.
Planning	Clarity of objectives and direction for fraud prevention	Operational targets are understood, but fraud prevention is not yet an explicit direction.	Work objectives and targets are understood, but fraud aspects are not specific.	Business objectives exist, but have not been translated into fraud-prevention objectives.	Operational objectives are clear, but the direction of fraud prevention is not explicit.
Planning	Planning for evaluation, monitoring, and follow-up	Monitoring is available, but audits tend to be reactive and surprise audits have not been implemented.	Review and follow-up mechanisms are recognized, but are not yet consistent.	Checklists and audits are available, but the audit trail and monitoring are weak.	Monitoring is available, but is not yet consistent or fully preventive.

Planning	Planning of policies and procedures	SOPs are available, but verbal and manual practices and exceptions exist.	SOPs and work guidelines are considered available.	SOPs and policies are available, but access and reporting mechanisms are not optimal.	Formal procedures are available, but implementation and understanding vary across employee and functions
Planning	Planning of resources and competencies	Processes are still manual, systems are not optimal, and fraud awareness is uneven.	Some respondents acknowledged support for training and tools.	ERP and training are available, but fraud awareness and system integration remain limited.	Resources are available, but are not yet optimal for end-to-end fraud control.
Planning	Consideration of fraud risk in business processes	Risks are identified through verification and document review, but controls remain manual.	Risks, checklists, and completeness of evidence are considered.	An anti-fraud policy and checklist are available, but have not been formalized in documents and risk appetite is not explicit.	Fraud risks have been considered, but not systematically or in an integrated manner.
Leading	Leader's direction on integrity and fraud prevention	Integrity direction exists, but is not always an operational guideline.	Integrity and compliance direction are recognized.	Core values exist, but the fraud-awareness program is not widespread.	Integrity has become general guidance, but is not yet fully applied in practice.
Leading	Leader's support for compliance and reporting	There is hesitation to report because safe channels and protection are unclear.	The sense of safety in reporting and rejecting suspicious claims is not optimal.	Anti-fraud commitment exists, but WBS/reporting mechanisms are unclear.	Compliance support has not been strengthened by safe and formal reporting mechanisms.
Leading	Leader's exemplary and consistency	Procedures may differ under urgent conditions, special access, or particular instructions.	There is a perception of flexibility and different treatment of submissions.	Authorization is available, but tolerance of bypasses is unclear.	Consistency in applying procedures remains a challenge.
Leading	Communication and socialization of policies /procedures	SOP and policy changes are not always communicated to implementers.	Policy socialization and communication are considered present, but are not widespread.	Briefings/minutes of meeting are available, but documentation of socialization is inconsistent.	Policy communication has occurred, but is not widespread or consistently documented.

Leading	Development of competencies and a risk-aware culture	Risk culture still depends on unit and leader initiatives.	Some respondents acknowledged training and understanding of work impacts.	Training is available, but fraud-awareness training is not available	A risk-aware culture has not been built systematically.
Leading	Enforcement of accountability, evaluation, and follow-up	Follow-up and sanctions are not always consistent and tend to be reactive.	Reviews and sanctions are recognized, but indications of irregularities are not always followed up.	Audits are available, but consequences are not consistently documented.	Accountability is not enforced consistently; follow-up remains reactive.

The data-triangulation results show that PT XYZ's planning function is in place but has not optimally considered asset-misappropriation risks and their prevention. Although the firm has a structure and task allocation, objectives, SOPs or policies, adequate resources, KPI assessments, and Internal Audit and QMS departments, these have not optimally considered asset-misappropriation risks and prevention. This is evident from the following:

1. Task allocation is not based on segregation of duties, so overlapping roles remain. For example, Treasury journals advance or claim requests using manual payment vouchers, makes payments, and reconciles financial statements. Procurement also conducts negotiations, creates purchase orders, receives purchase orders, and makes adjustments when prices or quantities change.
2. SOP are not updated consistently, and some do not consider internal and external dynamics. Policy changes are sometimes communicated only verbally through management instructions, without written documentation or procedure updates, particularly regarding asset-misappropriation prevention. For example, one of PT XYZ's core values, integrity, is communicated consistently, but PT XYZ does not yet have an SOP for handling fraud indications or actual fraud incidents and does not have an anti-fraud policy.
3. The use of the Microsoft Dynamics ERP, CRM, and Synology digital systems is not optimal for fraud prevention because it is not supported by segregation of duties; the systems are not integrated or still rely heavily on manual processes; the same user accounts and modules are used by several employees with different roles; and not all employees have access to the digital systems, making an audit trail difficult.
4. KPI assessments are not conducted annualy, and are subjective depending on each employee's supervisor.
5. The QMS and Internal Audit departments are reactive; follow-up is conducted only when requested.

Triangulation of the leading function shows that directions, policy socialization, briefing activities, training, and sanctions exist, but they are not aligned with potential fraud risks and their prevention. This is evident from the following:

1. Directions to act with integrity exist, but they have not become a tangible fraud-awareness program, as shown by the absence of a formal, documented anti-fraud policy accessible through the firm's information system.
2. The lack of a sense of safety when reporting fraud indications demonstrates a weakness in leadership support.
3. Payment requests for reimbursements or billing may receive different treatment depending on particular instructions or on the person submitting the request. Thus, leader's exemplary and consistency in applying procedures remain challenging because of management override.
4. No fraud-awareness training has been held. The training that is consistently conducted is intended to develop or create product knowledge for the sales and product teams, not to manage fraud or build awareness of fraud risks.
5. Follow-up on fraud indications and sanctions against perpetrators has not been consistent and tends to be subjective.

Comparative Analysis

Comparative analysis was conducted to compare the actual condition of the planning and leading functions in fraud prevention at PT XYZ with the 15 relevant principles of COSO ERM 2017. This analysis aims to identify gaps between practices already operating at the firm and the ideal COSO ERM 2017 condition for more structured, documented, and sustainable fraud risk management.

Table 6. Comparison of Actual and Ideal Activities Based on COSO ERM 2017

Principle	COSO Activity	Actual Condition	Gap
Exercises Board Risk Oversight	Initiates the program, assigns roles, documents the program, and oversees fraud reporting and the effectiveness of fraud controls.	Direction and role assignments are already in place; however, they have not yet been formalized into a documented, systematic, and sustainable fraud risk management program. Reporting and escalation mechanisms to senior management also remain inadequate.	Partially fulfilled
Establishes Operating Structures	Establishes organizational structures, policies and procedures, responsibilities, escalation mechanisms, and fraud risk assessment processes.	SOPs and task allocations are already available, but they have not yet been integrated into a fraud risk management framework. Escalation remains informal, while fraud risk assessments have not been conducted formally, systematically, and periodically.	Partially fulfilled
Defines Desired Culture	Establishes standards of conduct, translates organizational values into expected behaviors, promotes speak-up practices, ensures fair consequences, and develops compliance metrics, incentives, and anti-fraud training.	Ethical values are already established, but they have not yet been translated into clear behavioral standards, speak-up mechanisms, compliance metrics, incentives, or structured anti-fraud training.	Partially fulfilled

Demonstrates Commitment to Core Values	Establishes tone at the top, protects whistleblowers, responds to suspected misconduct, enforces sanctions, and communicates lessons learned.	Ethical commitment remains predominantly verbal. Whistleblower protection, formal investigation mechanisms, consistent enforcement of sanctions, and communication of lessons learned remain inadequate.	Partially fulfilled
Attracts, Develops and Retains Capable Individuals	Conducts employee and vendor due diligence and develops anti-fraud competencies according to the risk profile of each position.	Vendor selection and benchmarking have been conducted; however, integrity and competency due diligence has not been performed systematically, and function-specific, risk-based anti-fraud training is not yet available.	Partially fulfilled
Analyzes Business Context	Considers organizational strategy, internal and external changes, risk interdependencies, and the characteristics of individual functions or business units in managing fraud risk.	Growth strategies and changes such as ERP implementation, overlapping responsibilities, and operational pressures have not been formally analyzed in relation to fraud risk and have not been differentiated by function or business unit.	Partially fulfilled
Defines Risk Appetite	Establishes the risk profile, fraud risk appetite and tolerance, risk classifications, and the relationship between fraud risks and business objectives, and reviews them periodically.	A fraud risk profile and fraud risk appetite have not yet been established. Risks have also not been specifically mapped by type, function, or relationship with business objectives.	Not fulfilled
Evaluates Alternative Strategies	Involves parties responsible for fraud risk management in strategic discussions and considers the impact of strategic decisions on fraud risk.	The involvement of relevant functions remains limited to administrative controls. The impact of strategic decisions and business changes on fraud risk has not yet been formally analyzed.	Partially fulfilled
Formulates Business Objectives	Links business objectives with fraud risks, establishes fraud prevention as an organizational objective, and integrates it into performance measures and incentive mechanisms.	Growth objectives have not yet been formally linked to fraud risks. Fraud prevention has not been established as a distinct objective and is not yet reflected in KPIs, performance evaluations, incentives, or compensation.	Not fulfilled
Assesses Substantial Change	Identifies, assesses, and responds to significant internal and external changes and their impact on fraud risk.	Changes in ERP systems, personnel, regulations, and the external environment have not been systematically assessed in relation to fraud risk. Evaluation remains largely reactive.	Not fulfilled
Reviews Risk and Performance	Monitors metrics, updates risk assessments, develops monitoring mechanisms for priority risks, evaluates organizational culture, corrective actions, and root causes.	Formal anti-fraud metrics and monitoring mechanisms have not yet been established. Risk assessments are not periodically updated, while cultural evaluation, root cause analysis, and systematic monitoring of corrective actions are also lacking.	Not fulfilled
Pursues Improvement	Updates knowledge, conducts self-assessments, independent evaluations, benchmarking, and	There are no systematic mechanisms for knowledge updates, self-assessment, independent evaluation, benchmarking, or	Not fulfilled

	reviews the effectiveness of fraud risk assessments.	periodic review of the effectiveness of fraud risk assessments.	
Leverages Information and Technology	Ensures access to relevant information, strengthens technology and data analytics capabilities, and develops dashboards for monitoring fraud controls.	Access to information remains incomplete. Digital systems have not been fully optimized to support fraud controls, manual records and traceability limitations remain, and anti-fraud data analytics and dashboards have not yet been developed.	Partially fulfilled
Communicates Risk Information	Communicates anti-fraud roles and responsibilities, provides periodic reporting, establishes escalation protocols, tailors communication to individual functions, and facilitates two-way communication.	Anti-fraud communication remains largely verbal and limited to certain operational levels. Periodic reporting, written escalation protocols, function-specific communication, and secure two-way communication channels have not yet been established.	Partially fulfilled
Reports on Risk, Culture and Performance	Reports fraud risk assessments, effectiveness metrics, training outcomes, fraud cases and follow-up actions, and corrective measures in a structured manner.	Structured reporting on fraud risks, culture, performance, training, cases, and follow-up actions has not yet been established. Documentation of corrective actions remains case-based and is not supported by a dedicated system.	Not fulfilled

The comparative analysis shows that the planning and leading functions at PT XYZ have a foundation of controls and risk management, but require strengthening so that asset-misappropriation prevention is not merely administrative and reactive, but becomes part of formal, consistent, and risk-based governance.

Risk Identification

Fraud risk identification was conducted to obtain an overview of potential forms of fraud risk. This stage was based on data triangulation from questionnaires, interviews, document studies, and the gap analysis of the planning and leading functions in fraud prevention.

In this study, fraud-risk identification focused on fraud events that have occurred and on organizational planning and leadership practices that may increase the likelihood of fraud. Fraud risks were identified by considering risk sources, causal factors, potential forms of fraud, and impacts on business processes, procedural compliance, information reliability, and the effectiveness of internal controls.

Table 7. Risk Identification

Risk Code	Risk Event	Causal Factors	Impact
R1	Fraud may be perpetrated or concealed because the same party is involved in journal entry preparation, payments, and reconciliation.	Overlapping functions and shared ERP user accounts.	Transaction manipulation, unauthorized payments, journal-entry errors, or concealment of fraud may be difficult to detect due to inadequate segregation of duties.
R2	Transactions are processed based on verbal instructions,	Management override.	Transactions may be processed without adequate justification,

	resulting in inadequate documentation, approval, or supporting basis for claims.		reducing accountability and creating opportunities for authorized personnel to bypass established procedures.
R3	Fraud is detected late because examinations are mostly conducted only after a case, report, or indication of a problem arises.	Internal Audit is reactive rather than proactive, and no whistleblowing system is in place.	Irregularities may continue for an extended period, losses may increase, and the organization may lose the opportunity to prevent fraud at an early stage.
R4	Duplicate claims, invalid claims, or advances may not be settled on time.	Overlapping functions and systems that are not yet integrated or end-to-end.	Financial losses may occur, outstanding advances may accumulate, fictitious or duplicate claims may not be promptly detected, and the accountability process may be weakened.
R5	Manipulation or alteration of transactions is difficult to trace.	The system is not yet end-to-end.	The audit trail is weak, parties making transaction changes may be difficult to identify, and the investigation process may become ineffective.
R6	Fictitious claims, ineligible claims, or expense mark-ups may occur more easily because review standards vary.	Guidelines on claimable and non-claimable expenses are not fully clear or adequately communicated.	Claim reviews may become subjective, ineligible expenses may be reimbursed, and the potential for financial loss may increase.
R7	Fraud red flags are not identified consistently across all work units.	Anti-fraud training and risk-awareness development are not yet systematic, and employee competencies remain inadequate.	Early indications of fraud may be overlooked, employees may have different levels of vigilance, and fraud may only be detected after causing greater impact.
R8	Overpricing, vendor favoritism, conflicts of interest, or kickbacks may not be detected at an early stage.	Vendor selection is concentrated in one individual or department, and vendor monitoring is not yet optimal.	The firm may pay higher prices, vendors may not be selected objectively, and the risk of kickbacks or conflicts of interest in procurement may increase.
R9	Transactions bypass control stages, creating a risk of management override.	Leaders have not consistently acted as role models.	Formal controls may become ineffective, subordinates may tend to follow instructions even when they conflict with procedures, and the risk of abuse of authority may increase.
R10	Employees use outdated rules, verbal instructions, or personal interpretations when processing transactions.	Procedure owners and Internal Audit act reactively.	Work processes may vary, processing errors may occur, and employees may be difficult to hold accountable because the applicable rules are unclear.
R11	Employees do not recognize fraud indicators or do not know how to respond when irregularities are identified.	Anti-fraud training and risk-awareness development are not yet systematic.	Red flags may not be reported, fraud awareness may remain low, and potential irregularities may not be followed up promptly.
R12	Fraud or other irregularities recur due to the absence of	Sanctions are imposed subjectively, clear sanction criteria are absent, cases are	Perpetrators or other employees may rationalize misconduct, similar cases may recur, and the

	deterrence and formal organizational learning.	not investigated, and lessons learned are not formally communicated.	culture of compliance may weaken.
R13	Advance holders may obtain personal benefits from exchange-rate differences or manipulate foreign-currency settlements.	Weak monitoring and insufficiently documented assignments.	The firm may incur foreign-exchange losses, expense settlements may not reflect actual use, and advances may be exploited for personal gain.
R14	Advance funds may be misused, retained for an excessive period, or settled in a manner inconsistent with their actual use.	Weak monitoring and insufficiently documented assignments.	Firm funds may not be used for their intended purposes, cash flow may be disrupted, outstanding advances may increase, and potential misuse of funds may be difficult to monitor.
R15	The firm is slow to adjust controls in response to changes in external conditions.	Evaluations are uneven and irregular, and control functions operate mainly in response to requests.	Controls may become less relevant to changes in risk, such as changes in prices, exchange rates, vendor practices, or emerging fraud patterns.
R16	The submission process remains manual.	The system is not yet end-to-end.	The risk of lost documents, duplicate submissions, document manipulation, processing delays, and input errors may increase due to the absence of automated system controls.
R17	Employees may be placed in risk-sensitive positions without adequate validation of their competence and integrity.	The employee selection process does not assess EQ, IQ, and soft skills. Such assessments are conducted only for candidates at the supervisor level and above.	Employees without adequate competence or integrity may be assigned to positions involving the management of cash, vendors, documents, or critical approvals.
R18	Procedures may fail to address fraud-prone points because procedure owners and fraud-risk managers do not coordinate with one another.	QMS focuses on procedure documentation, while fraud risk is regarded as the responsibility of Internal Audit; both QMS and Internal Audit mainly act in response to reports or requests.	SOPs may become primarily administrative rather than fraud-risk-based, leaving vulnerable areas such as claims, advances, vendors, and payments inadequately controlled.

Risk Assessment

Risk assessment determines the priority level of each risk. The assessment used two main measures, likelihood and impact. Likelihood indicates the probability that a risk will occur, whereas impact indicates the magnitude of the consequences if it occurs. This assessment helps determine which risks require greater attention in PT XYZ's fraud-prevention efforts.

The likelihood assessment considered the results of questionnaires, interviews, document studies, and observation. Likelihood and impact was assessed using a five-point scale. The higher the likelihood score, the greater the probability that the risk will occur. The higher the

impact score, the greater the effect on the firm. Risk impact was evaluated across several aspects, including legal, compliance, financial, operational, reputation, governance, culture, and ability to pursue strategic goals. With this approach, the impact of fraud was assessed not only in terms of financial losses, but also in terms of potential disruption to work processes, a weakened compliance culture, loss of trust, and obstacles to achieving organizational objectives. The likelihood and impact ratings were defined as follows:

Likelihood	1 = Rare	2 = Unlikely	3 = Possible	4 = Likely	5 = Almost Certain
Impact	1 = Insignificant	2 = Minor	3 = Serious	4 = Disastrous	5 = Catastrophic

These likelihood and impact ratings were then used to determine the overall risk score for each identified risk event. The results of the risk assessment are presented in the following table.

Table 8. Risk Assessment Scores

Risk Code	Likelihood	Impact	Risk Score	Risk Code	Likelihood	Impact	Risk Score
R1	5	4	20	R10	4	3	12
R2	5	4	20	R11	4	3	12
R3	4	4	16	R12	3	5	15
R4	5	5	25	R13	3	4	12
R5	4	4	16	R14	4	4	16
R6	4	4	16	R15	3	4	12
R7	4	3	12	R16	5	3	15
R8	4	5	20	R17	3	4	12
R9	5	4	20	R18	4	4	16

Based on the risk assessment, a risk matrix was prepared and used to map risks according to the combination of likelihood and impact, enabling the firm to determine risk-treatment priorities.

		Impact				
		1 Insignificant	**2 Minor**	**3 Serious**	**4 Disastrous**	**5 Catastrophic**
Likelihood	**5 Almost Certain**			**R16**	**R1, R2, R9**	**R4**
	4 Likely			**R7, R10, R11**	**R3, R5, R6, R14, R18**	**R8**
	3 Possible				**R13, R15, R17**	**R12**
	2 Unlikely					
	1 Rare					

Figure 4. Risk Matrix

Based on the risk-matrix mapping, most of the identified fraud risks fall into the Disastrous and Catastrophic categories. This indicates that fraud risks at PT XYZ have a high likelihood of occurrence and/or a significant impact on the firm's operations.

Discussion

Based on the risk-matrix mapping, indicates that PT XYZ is exposed not only to isolated fraud incidents, but also to structural weaknesses that may allow fraud to occur repeatedly or remain undetected for an extended period. The higher-risk events are mainly associated with weaknesses in segregation of duties, management override, vendor monitoring, fraud detection mechanisms, advance management, and the integration of transaction-processing systems. These risks are interconnected, as weaknesses in one control area may increase exposure in another. For example, overlapping functions and insufficient system integration may increase opportunities for unauthorized transactions while simultaneously reducing the effectiveness of detection and reconciliation. Similarly, weak monitoring and inconsistent enforcement may allow irregularities to recur and reinforce employees' rationalization of non-compliant practices.

Accordingly, the risk assessment suggests that fraud exposure at PT XYZ does not arise solely from individual employee behavior, but also from weaknesses in the design and implementation of organizational controls. This finding highlights the need for stronger preventive controls, clearer segregation of duties, more systematic monitoring, and more consistent management oversight.

Danduru et al. (2025) found that good corporate governance and internal control had positive and significant effects on fraud prevention. Their findings further showed that ethical leadership significantly moderated the relationship between good corporate governance and fraud prevention, but did not significantly moderate the relationship between internal control and fraud prevention. The authors interpreted this finding by positioning internal control as a formal or "hard mechanism" that can operate systematically through established procedures, while ethical leadership was considered more influential in strengthening cultural or "soft mechanisms." To support this interpretation, Danduru et al. referred to Apristiana & Utomo (2025) as evidence that internal control may prevent fraud independently when controls are sufficiently standardized, and to (Marcella et al. (2025) as evidence that ethical leadership is more dominant in cultural mechanisms such as whistleblowing systems than in formal internal controls.

However, these interpretations should be approached with caution. Apristiana and Utomo (2025) conducted a systematic review of corporate governance and fraud and identified internal control as one of several governance mechanisms associated with fraud prevention; their study did not specifically examine ethical leadership or establish that internal control operates independently of leadership. Similarly, Marcella et al. (2025) examined the effects of good corporate governance, financial distress, and whistleblowing systems on fraud prevention in Indonesian SOEs, without ethical leadership or formal internal control as variables. Therefore,

their findings cannot directly establish that ethical leadership has a stronger influence on whistleblowing systems than on internal control.

This interpretation also raises a conceptual inconsistency. Although internal control was theoretically explained using Agency Theory, its measurement was based on the COSO Internal Control Framework. COSO conceptualizes internal control as a dynamic and iterative process effected by the board of directors, management, and other personnel and embedded in the way management runs the organization (Committee of Sponsoring Organizations of the Treadway Commission, 2012). Accordingly, internal control cannot be regarded purely as an autonomous "hard mechanism" that operates independently of leadership. Formal policies and procedures may be standardized, but their establishment, implementation, enforcement, and evaluation remain influenced by management actions and decisions.

This interpretation becomes even less convincing when viewed from the COSO ERM 2017 perspective, which explicitly incorporates Governance & Culture as a core component of enterprise risk management. Culture, ethical values, accountability, and leadership are therefore not external factors operating separately from formal risk-management mechanisms, but integral elements that shape how those mechanisms are designed, implemented, and sustained (Committee of Sponsoring Organizations of the Treadway Commission & PwC, 2017). Therefore, the insignificant moderating effect of ethical leadership should be interpreted as an empirical finding within the specific model rather than as evidence that internal control is independent of leadership.

From a management-function perspective, the effectiveness enterprise risk management in supporting fraud prevention cannot be separated from either planning or leading. Planning provides the foundation through the establishment of objectives, identification of risks, design of policies and procedures, allocation of responsibilities and resources, and development of monitoring mechanisms. Leading, in turn, translates these plans into organizational practice through direction, communication, role modelling, enforcement, and accountability. Therefore, standardized controls should not be viewed as mechanisms that operate independently of managerial functions, because their design originates from planning and their effective implementation depends on leadership.

The discussion must develop arguments by correlating results, theories, and opinions, including the results of comparisons with previous research. It is important to state the potential contribution of the research findings to the development of science. The discussion section should not merely restate the findings reported in the results section or present additional findings that have not been previously discussed in the article. On the contrary, the focus should be on highlighting the broader implications of the study's findings and linking them back to previous research.

CONCLUSION

Based on the analysis of various activities in the planning and leading functions for asset-misappropriation prevention, obtained through questionnaires, interviews, document studies,

and observation and referring to the COSO Enterprise Risk Management Integrating with Strategy and Performance framework at PT XYZ, the planning and leading functions in PT XYZ's asset-misappropriation prevention efforts do not yet fully consider asset-misappropriation risks. The risks that arise do not have a significant financial impact because the amounts of expense reimbursements and billing mark-ups tend not to be large, but they have a greater operational impact because they may occur relatively frequently. If allowed to continue, these operational impacts may substantially affect the company's reputation and finances in its relationships with vendors and customers. Several key issues require serious and immediate attention: procedures and digital systems need to incorporate segregation of duties, internal and external dynamics and be evaluated consistently; PT XYZ does not have a documented fraud-mitigation plan, so anti-fraud procedures or policies need to be developed and implemented; the use of digital systems or information systems is not integrated, causing information not to reach relevant parties and weakening the audit trail, so PT XYZ needs to integrate all of its digital or information systems; sanctions and KPI assessments are subjective and based on each employee's supervisor, so the company needs to design 360-degree feedback as a basis for evaluation and sanctions; and procedures are frequently bypassed by certain parties, requiring clear and firm rules. None of the recommended planning and leading activities will occur without the initiation, example, and integrity of the owner, who also serves as PT XYZ's top leader.

This study has several limitations. First, it was conducted as a single-case study in one medical-device distribution firm, which limits the transferability of the findings to organizations with different characteristics, governance structures, or business environments. Second, although all COSO ERM 2017 principles were considered in the analysis, not all activities associated with each principle could be examined in equal depth due to differences in data availability and relevance to the planning and leading functions. Third, because fraud is a sensitive issue, questionnaire and interview responses may have been influenced by respondents' willingness to disclose information or by social-desirability bias. Although triangulation through interviews, questionnaires, document studies, and observations was used to strengthen the credibility of the findings, some information may still have remained inaccessible or undocumented. Further research may extend the analysis by examining other management functions, different types of fraud, and different organizational or industry contexts in the application of COSO ERM 2017 for fraud prevention.

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