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Developing a Paradigmatic Model of Organizational Whistleblowing in Industrial and Mining Companies: A Grounded Theory Approach

ABSTRACT

In industrial and mining companies, every unreported safety hazard, concealed quality fraud, or environmental violation can lead to human casualties, production disruptions, and reputational crises. Nevertheless, the mere existence of a reporting channel does not guarantee that employees will report misconduct. This study aimed to identify the components and indicators of organizational whistleblowing and to develop a paradigmatic model of whistleblowing in industrial and mining companies. The study employed a qualitative design using the systematic grounded theory approach of Strauss and Corbin. Participants consisted of experts and key informants from industrial and mining companies located in the industrial estates of Kerman Province, who were selected through purposive and snowball sampling. Data were collected through 15 semi-structured interviews until theoretical saturation was achieved and were analyzed through three stages of open, axial, and selective coding. The trustworthiness of the findings was established based on Lincoln and Guba's criteria through strategies including member checking, peer review, and maintenance of an audit trail. Data analysis yielded 45 final open codes and 15 subcategories, which were organized into the six components of the paradigmatic model. The core category was identified as "responsible whistleblowing within a context of protected trust and effective case handling." Causal conditions included the preventive and ethical orientation of reporting and the scope of reportable misconduct; contextual conditions comprised a culture of silence, power structure, and managerial roles; intervening conditions included trust in the reporting channel, identity protection, multidimensional retaliation risk, and the quality of case handling; strategies included staged reporting, escalation to independent channels, secure technical architecture and independent governance, legal–psychological protection, and ethical reinforcement; and consequences were identified along two pathways: "correction–trust" and "failure–silence." Effective whistleblowing in industrial and mining companies does not emerge merely through the establishment of a single reporting channel; responsible reporting constitutes the condition for its legitimacy, protection of the reporter is the condition for its occurrence, and effective case handling is the condition for its continuity. The proposed model can provide a basis for designing reporting systems, anti-retaliation policies, and feedback mechanisms in these companies.

Keywords: organizational whistleblowing, grounded theory, trust in reporting channels, whistleblower protection, retaliation, industrial and mining companies.

Introduction

Organizational whistleblowing has become an increasingly important mechanism of organizational accountability because employees are often the first individuals to observe misconduct, safety failures, fraud, corruption, regulatory violations, unethical managerial behavior, and other practices that may threaten organizational sustainability or public welfare. In contemporary organizations, formal control systems, internal audits, compliance procedures, and managerial supervision cannot identify every harmful act or latent risk, particularly when misconduct is concealed, normalized, or embedded in informal organizational routines. Under such conditions, employees' willingness to raise concerns can provide organizations

with early warning signals that enable corrective action before problems escalate into serious financial, operational, legal, environmental, or reputational consequences. Whistleblowing, therefore, should not be understood merely as the act of reporting wrongdoing; rather, it represents a complex form of employee voice through which organizational members communicate information about practices that they perceive as illegitimate, dangerous, unethical, or contrary to the interests of the organization or its stakeholders. Research on employee voice has consistently shown that speaking up can improve decision quality, facilitate organizational learning, and contribute to effectiveness, whereas silence deprives organizations of critical information necessary for preventing errors and correcting dysfunctional processes [1, 2]. The strategic value of employee voice is particularly salient in high-risk organizational environments, where delayed communication can transform a manageable problem into a major crisis.

Whistleblowing is nevertheless distinct from ordinary employee voice because it generally concerns serious misconduct and often involves a higher level of perceived personal risk. Employees considering whether to report wrongdoing must evaluate not only the severity and legitimacy of the observed problem but also the credibility of reporting channels, the potential reaction of supervisors and colleagues, the probability of identity disclosure, and the likelihood of retaliation. This makes whistleblowing a fundamentally relational and context-dependent process rather than a simple consequence of individual morality. Reviews of whistleblowing research in accounting and other professional settings have demonstrated that reporting decisions are influenced by a combination of individual, situational, organizational, and institutional determinants, including perceived seriousness of wrongdoing, personal responsibility, organizational support, reporting-channel characteristics, professional commitment, and anticipated consequences [3]. Similarly, research on internal whistleblowing has identified heterogeneous motives ranging from commitment to professional or organizational values to protection of colleagues, prevention of harm, and preservation of organizational integrity [4]. These findings imply that understanding whistleblowing requires attention to both the moral interpretation of misconduct and the organizational conditions that determine whether employees believe that reporting is feasible, protected, and likely to result in meaningful action.

The preventive role of whistleblowing is especially significant in industrial and mining companies. Such organizations operate in environments characterized by occupational hazards, heavy machinery, complex technical systems, hazardous materials, environmental externalities, production pressures, extensive subcontracting arrangements, procurement risks, and substantial financial and operational interdependencies. In these settings, an employee may encounter unsafe equipment, concealed accidents, noncompliance with environmental standards, falsified quality records, procurement irregularities, unauthorized deviations from technical specifications, manipulation of production data, or managerial decisions that increase operational risk. Failure to report such issues can produce consequences that extend far beyond the individual employee or work unit. A concealed technical defect may result in injury or loss of life; a quality violation may create downstream production failures; environmental misconduct may lead to regulatory sanctions and ecological damage; and financial wrongdoing may evolve into systematic corruption. In analogous high-stakes settings, such as healthcare, the literature has shown that whistleblowing can be central to patient safety and quality protection but is often undermined by fear, organizational resistance, and distrust in management responses [5]. This logic is directly relevant to industrial and mining settings, in which the timely reporting of safety, quality, environmental, or integrity concerns may function as an organizational risk-control mechanism.

Despite the potential organizational benefits of whistleblowing, employees frequently remain silent. Silence may result from fear of retaliation, a belief that reporting will not lead to corrective action, concern about being labeled disloyal, or expectations that management will protect powerful individuals rather than the reporter. Organizational politics can further discourage employee voice by increasing uncertainty about how information will be interpreted and whether speaking up will threaten access to resources or career opportunities. From a resource perspective, employees who perceive high levels of organizational politics may treat voice as costly because reporting can jeopardize interpersonal relationships, status, or future organizational support [6]. Workplace ostracism is similarly important because exclusion from social and professional networks may communicate that challenging misconduct carries relational penalties. Recent research suggests that ethical leadership can counteract these dynamics by strengthening employees' moral identity at work and encouraging ethical voice, whereas ostracism can suppress the willingness to speak up [7]. In industrial and mining organizations, where work is often highly interdependent and employees may depend heavily on supervisors and teams for scheduling, overtime, assignments, safety cooperation, and advancement, these relational risks can become particularly powerful deterrents.

Power distance is another critical contextual factor in whistleblowing. In organizations characterized by steep hierarchies, centralized authority, and strong deference to supervisors, employees may perceive reporting as a challenge to managerial legitimacy or as an act of insubordination. Research conducted in high power-distance societies has indicated that hierarchical cultural values can significantly influence employees' propensity to blow the whistle, particularly when organizational norms discourage questioning authority or escalating concerns beyond immediate supervisors [8]. This issue is relevant to industrial and mining companies, where command structures are often operationally necessary but may unintentionally strengthen silence if employees believe that bypassing the chain of command is unacceptable. At the same time, management style can either reinforce or mitigate this effect. Participative, ethical, and responsive leadership may normalize reporting as a legitimate contribution to organizational safety and improvement, whereas authoritarian or person-centered management can transform reporting into a politically risky act. Evidence from intelligent manufacturing also demonstrates that ethical leadership and employee voice are closely associated with innovation and constructive organizational climates, suggesting that managerial openness can broaden the role of voice from reactive reporting to proactive organizational improvement [9].

The credibility of reporting channels is therefore central to whistleblowing behavior. Employees must believe that a channel is not only available but also confidential, impartial, accessible, and capable of producing a meaningful organizational response. The existence of a hotline, complaint system, or internal reporting procedure does not by itself ensure use. Research across sectors has repeatedly emphasized that the perceived effectiveness of reporting channels affects whether employees choose internal reporting, external disclosure, or silence. In the international sports sector, reporting-channel effectiveness has been identified as an important determinant of whistleblowing behavior, alongside organizational and situational variables [10]. In large professional organizations, formal voice systems may exist rhetorically while employees still perceive limitations in their practical accessibility, independence, or responsiveness [11]. Consequently, the institutional design of a reporting system must be assessed from the employee's perspective: employees ask whether the channel can protect them, whether powerful actors can interfere with the process, whether reports are investigated professionally, and whether they will receive any feedback about outcomes.

Confidentiality and anonymity constitute especially sensitive components of channel credibility. Whistleblowers often face a dilemma between the protection afforded by anonymity and the practical difficulties that anonymous reporting may create

for investigation and follow-up. If identity protection is weak, employees may avoid reporting because they fear that their names can be inferred or disclosed through intermediaries, technical data, or organizational networks. Conversely, completely anonymous reporting may restrict communication between investigators and reporters, thereby reducing the ability to verify details or gather supplementary evidence. Recent research has highlighted the significance of identity protection in shaping whistleblowing-related social and organizational outcomes, showing that protection mechanisms can influence willingness to cooperate with whistleblowers and perceptions of the reporting process [12]. Digital technologies and artificial intelligence are also increasingly being discussed as tools for strengthening confidentiality, reducing exposure, and improving the security and traceability of whistleblowing systems, particularly in contexts where conventional reporting mechanisms are perceived as vulnerable to retaliation or interference [13]. For industrial and mining companies, this suggests that reporting-channel architecture should be treated not only as an administrative issue but also as a technical governance problem involving access controls, identity protection, communication protocols, and independent oversight.

Retaliation remains one of the most persistent barriers to whistleblowing. Importantly, retaliation is not limited to formal dismissal or disciplinary action. It may occur through subtle and cumulative practices such as exclusion from meetings, denial of promotion, unfavorable shift allocation, reduced overtime, reassignment, social isolation, stigmatization, or deterioration in relationships with supervisors and colleagues. Such informal retaliation may be difficult to document but can be highly effective in signaling to other employees that reporting is personally costly. Research on whistleblowing experiences has demonstrated that reporting is often not a single event but a prolonged process in which the whistleblower continues to face organizational, relational, and psychological consequences after the initial disclosure [14]. Accordingly, the decision to report is shaped by anticipated costs as much as by moral or professional motivations. Recent evidence also shows that perceived whistleblowing costs can significantly affect intentions to report violations, including in information-system contexts where employees weigh the expected personal consequences of disclosure against the perceived seriousness of misconduct [15]. These findings reinforce the need to conceptualize retaliation as multidimensional and temporally extended.

Professional identity and ethical commitment can, however, increase willingness to report even when risk is present. In auditing, for example, professional commitment and commitment to independence have been associated with whistleblowing judgments and intentions because individuals may interpret reporting as part of their professional duty rather than merely a discretionary action [16]. Similar dynamics may operate among engineers, HSE personnel, quality-control specialists, legal staff, financial professionals, maintenance technicians, and production managers in industrial and mining companies. When employees perceive that silence could endanger lives, compromise product quality, violate technical standards, or facilitate corruption, whistleblowing may be framed as an obligation arising from professional ethics. Yet professional commitment alone is unlikely to overcome organizational barriers if employees believe that reporting will be ignored or punished. Research among accountants in non-Western settings has shown that whistleblowing intentions are shaped by cultural and organizational conditions as well as professional considerations, highlighting the limitations of models that treat reporting primarily as an individual ethical choice [17].

Fair treatment and trust in the organization also influence whistleblowing practices. When employees perceive procedures as fair, managers as cooperative, and employment relationships as respectful, they may be more willing to expose wrongdoing because they expect the organization to respond legitimately. Evidence from government-linked companies indicates that job satisfaction, fair treatment, and cooperativeness are associated with whistleblowing practices, suggesting

that reporting decisions are embedded in broader assessments of organizational justice and relational quality [18]. Group dynamics are similarly relevant. Strong group cohesion can either encourage reporting when ethical norms are shared or suppress it when loyalty to colleagues is interpreted as a reason to conceal wrongdoing. Research involving auditors has shown that group cohesion can shape whistleblowing intentions, illustrating how social belonging may modify the perceived legitimacy and cost of reporting [19]. This tension is particularly salient in mining and industrial environments, where work teams often depend on strong interpersonal coordination and where employees may feel torn between loyalty to coworkers and responsibility to safety, quality, or organizational integrity.

The quality of the organizational response after a report is submitted may be just as important as the initial availability of the reporting channel. Employees observe whether investigations are timely, impartial, professional, and transparent, and these experiences shape future reporting behavior. If reports disappear into administrative procedures, if investigators are perceived as biased, or if no corrective action is visible, employees may conclude that the reporting system is symbolic rather than functional. Reviews of whistleblowing in financial practice have emphasized that outcomes depend not only on the decision to report but also on the processes through which organizations receive, assess, investigate, and respond to disclosures [20]. Likewise, the broader employee-voice literature shows that employees evaluate voice opportunities partly through past organizational responses; a history of ignored or punished voice can gradually establish silence as a rational behavioral norm [2]. Therefore, reporting systems should be conceptualized as feedback loops in which organizational handling of previous reports continuously reconstructs employees' trust or distrust.

The relationship between voice, responsiveness, and organizational effectiveness has also been demonstrated in settings where errors can have severe consequences. Systematic evidence from healthcare shows that employee voice can contribute to safety improvement when organizations provide credible mechanisms for raising concerns and when leaders respond constructively rather than defensively [21]. However, when employees perceive that management values reputation protection more than problem correction, silence becomes more likely. The same dynamic can be expected in industrial and mining organizations, where production targets, cost pressures, or concerns about operational disruption may create incentives to minimize or delay responses to reports. In such circumstances, employees may interpret management's willingness to investigate as contingent on the cost of corrective action, which can undermine trust in the entire reporting system. This suggests that whistleblowing effectiveness should be understood as a governance issue involving procedural justice, responsiveness, independence, and the visible implementation of corrective measures.

A further challenge concerns the boundary between internal and external whistleblowing. Employees often prefer to begin with internal channels because internal reporting allows the organization an opportunity to correct the problem and may be perceived as more consistent with organizational loyalty. However, if internal channels are compromised by conflicts of interest, confidentiality failures, or repeated inaction, employees may escalate concerns to independent internal units, regulators, third parties, or external actors. Studies of whistleblowing processes suggest that employees frequently move through a sequence of reporting choices rather than making a single binary decision between silence and disclosure [14, 20]. This staged character of whistleblowing is particularly relevant when the direct supervisor may be implicated in the wrongdoing or when organizational hierarchies make escalation difficult. Accordingly, an effective organizational model should account for channel switching, escalation, and the need for independent reporting routes.

Recent developments also underscore the role of technology in reshaping whistleblowing systems. Digital reporting platforms, encrypted communication, anonymous tracking codes, and AI-supported case triage have the potential to improve accessibility, confidentiality, and responsiveness, although they also introduce new governance concerns regarding data security and technical identity exposure. The possibility of using AI-supported solutions to strengthen whistleblower protection has been increasingly emphasized in contexts where traditional institutional protections are weak or retaliation risks are high [13]. At the same time, the digitalization of reporting does not eliminate the human and political dimensions of whistleblowing. Even the most technically secure platform will fail if employees believe that investigators are not independent, managers can interfere with cases, or corrective action will not follow. Thus, technology should be understood as one component of a broader system of trust, protection, accountability, and organizational learning.

Although existing studies have generated substantial knowledge about whistleblowing determinants, much of the literature remains concentrated in accounting, auditing, healthcare, sport, public administration, and professional-service contexts [3, 5, 10, 11]. These studies identify important variables, but the organizational reality of industrial and mining companies introduces a distinctive combination of occupational safety risk, environmental exposure, technical complexity, hierarchical work organization, contractor relationships, production pressure, and potential financial misconduct. Furthermore, much prior research examines whistleblowing intention through predetermined quantitative variables, whereas fewer studies reconstruct the phenomenon inductively from the lived experiences of employees and experts across different organizational functions. This is a significant gap because the meaning of whistleblowing, the boundaries between legitimate reporting and personal complaint, the sequence of reporting channels, the forms of retaliation, and the criteria by which employees judge organizational response may be highly context-specific. A grounded theory approach is therefore valuable for identifying how causal conditions, contextual structures, intervening factors, strategies, and consequences interact within the specific institutional environment of industrial and mining companies.

Taken together, the literature indicates that effective whistleblowing cannot be reduced to the existence of a formal reporting mechanism. It requires an integrated organizational architecture in which employees recognize reporting as ethically and professionally legitimate, reporting channels are trusted, identities are protected, retaliation is actively prevented, managers respond impartially, investigations are timely, and corrective outcomes are visible. Where these conditions are absent, silence can become institutionally rational even when employees recognize serious wrongdoing. Conversely, where employees observe fair processes, reliable confidentiality, ethical leadership, professional commitment, and meaningful organizational action, reporting can become part of a constructive culture of risk prevention and organizational learning [12, 16, 17]. Moreover, the consequences of reporting extend beyond the resolution of a single incident, because each organizational response communicates information to all employees about whether future voice will be protected, ignored, or punished. Whistleblowing systems should therefore be conceptualized as dynamic trust-building mechanisms rather than static compliance tools.

Accordingly, the aim of this study was to identify the components and indicators of organizational whistleblowing and to develop a paradigmatic grounded-theory model explaining its causal conditions, core phenomenon, contextual and intervening conditions, strategies, and consequences in industrial and mining companies.

Methodology

In terms of purpose, this study was applied-developmental, and in terms of methodological orientation, it followed a qualitative approach. The research was conducted using grounded theory based on the systematic approach proposed by Strauss and Corbin (1998). This strategy was selected for two reasons. First, whistleblowing is a context-dependent phenomenon intertwined with organizational culture, power structures, safety risks, and occupational consequences; therefore, understanding it requires reliance on actors' experiences. Second, the systematic approach, through its paradigmatic model comprising causal conditions, the core phenomenon, contextual conditions, intervening conditions, strategies, and consequences, enables the relationships among categories to be formulated within a coherent explanatory framework. This study constituted the qualitative phase of an exploratory sequential mixed-methods design, in which the results of the qualitative phase provided the basis for developing the measurement instrument and conducting the subsequent quantitative testing (Creswell & Plano Clark, 2018).

The geographical scope of the study comprised industrial and mining companies located in the industrial estates of Kerman Province, and the temporal scope covered 2025–2027. Participants consisted of experts and key informants working in these companies in the areas of safety and health, safety, and environment (HSE), production, human resources, environmental management, finance, maintenance, quality control, legal affairs, extraction, warehousing, internal auditing, and training. The inclusion criteria were at least three years of relevant experience in industrial or mining companies, familiarity with reporting and case-handling processes or direct exposure to misconduct and accident cases, and willingness to participate based on informed consent. Withdrawal from further participation or incompleteness of data to an extent that could compromise the analysis constituted the exclusion criteria. Sampling began purposively, and snowball sampling was also employed to gain access to key individuals and enhance the diversity of perspectives. Efforts were made to ensure variation in organizational roles, including managerial and specialist positions; type of organization, including mining, steel, copper, cement, concentrate production, contracting firms, and holding companies; and degree of exposure to reportable incidents. Data collection continued until theoretical saturation was achieved, resulting in a total of 15 interviews. Participants had between 6 and 20 years of work experience, with a mean of 12.33 years and a median of 12 years. Nine participants were men and six were women. Participant characteristics are presented in Table 1.

Table 1

Demographic Characteristics of the Participants

Code	Type of Organization	Organizational Position	Gender	Education	Experience (Years)
P1	Iron ore mine	Mine safety supervisor	Male	Master's in HSE Engineering	14
P2	Steel company	Human resources specialist	Female	Master's in Human Resource Management	9
P3	Copper complex	Production manager	Male	Master's in Metallurgical Engineering	18
P4	Cement company	Environmental specialist	Female	Master's in Environmental Engineering	11
P5	Mining contractor	Financial specialist	Male	Bachelor's in Accounting	10
P6	Coal mine	Maintenance technician	Male	Associate degree in Mechanical Engineering	7
P7	Industrial company	Human resources manager	Female	Master's in Human Resource Management	20
P8	Lead and zinc mine	HSE specialist	Female	Bachelor's in Industrial Safety Engineering	8
P9	Steel plant	Quality control officer	Male	Master's in Materials Engineering	13
P10	Mining company	Legal specialist	Female	Master's in Law	15
P11	Gold mine	Extraction supervisor	Male	Bachelor's in Mining Engineering	16
P12	Concentrate plant	Production line operator	Male	Associate degree in Mineral Processing	6
P13	Industrial complex	Warehouse supervisor	Male	Bachelor's in Industrial Management	12
P14	Mining holding company	Internal audit manager	Female	Master's in Accounting	17
P15	Steel company	Training specialist	Male	Master's in Educational Management	9

The data collection instrument was a semi-structured interview. The interview guide was developed based on the research objectives and was reviewed by several experts prior to implementation in terms of clarity, logical sequencing, and adequacy of the questions. The main questions were organized around five domains: (1) the meaning of organizational whistleblowing, its common manifestations in industrial and mining settings, and its boundaries relative to other behaviors; (2) the channels used by employees, including internal, external, and third-party channels, and the degree of trust in each channel; (3) management of confidentiality and anonymity and employees' concerns regarding retaliation; (4) the quality of organizational responses to reports and its effect on willingness to report; and (5) the role of organizational culture, management style, and power relations in the decision to report or remain silent, together with suggestions for improvement. Follow-up probes were posed according to the progression of each interview, and insights obtained from earlier interviews were used to enrich subsequent interviews.

The interviews were conducted either face-to-face or online by prior arrangement, with each interview lasting between 30 and 75 minutes. Following informed consent, the conversations were audio-recorded while field notes were simultaneously documented. The interviews were subsequently transcribed verbatim, and participants' names and other identifying information were removed and replaced with codes.

Data were analyzed using MAXQDA software according to Strauss and Corbin's three-stage coding procedure. The unit of analysis was a sentence or a group of sentences conveying an independent meaning regarding the nature of whistleblowing, type of misconduct, reporting channel, trust, confidentiality, retaliation, quality of case handling, organizational culture, proposed solutions, or consequences. A single meaning unit could receive more than one code when it contained multiple implications. For example, the statement "anonymous reporting provides psychological safety, but it makes follow-up difficult" was coded simultaneously as "advantage of anonymity" and "follow-up limitation." During open coding, the transcripts were read line by line, conceptualized, and integrated through constant comparison, and the properties and dimensions of each concept were identified. During axial coding, the codes were linked by examining the conditions under which they emerged, the context in which they occurred, facilitating or inhibiting factors, actions, and consequences, and were subsequently organized into subcategories and components of the paradigmatic model. During selective coding, the core category was identified, the theoretical storyline was developed, discrepant cases were examined, and the final model was refined. It should be emphasized that all concepts and relationships were derived from the interview data, while paradigmatic terminology was used solely to organize the findings.

To establish trustworthiness, the four criteria proposed by Lincoln and Guba (1985) were applied. For credibility, interpretations and descriptive codes were returned to participants for verification, and incorrect interpretations were revised; additionally, the coding process was reviewed by members of the research team and academic experts. For transferability, a rich description of the research context, types of companies, and reporting structures was provided, and participants were selected from knowledgeable individuals with direct experience. For dependability, an audit trail was maintained, including different versions of the codebook, decisions concerning the merging and separation of codes, and analytical memos. For confirmability, selected quotations and the process through which raw data were transformed into categories were reported, enabling readers to trace the analytical reasoning.

Findings and Results

During open coding, code labels were kept as close as possible to the participants' own language. Table 2 presents examples of the transformation of meaning units into concepts and open codes.

Table 2

Examples of Transforming Meaning Units Into Open Codes

Code	Meaning Unit (Quotation)	Extracted Concept	Open Code
P3	"Whistleblowing means prioritizing the 'survival of the system' over 'loyalty to an individual.'"	Prioritizing organizational survival over personal loyalty	T1-2
P14	"Personal complaints, retaliation, rumor-spreading, disagreements with a manager, or reports without sufficient documentation should not be regarded as whistleblowing."	Distinguishing genuine reporting from complaints and retaliation	T1-3, T1-4
P6	"Reporting a hazard before an accident occurs is its most important form."	Pre-incident hazard reporting	T1-5
P3	"The spare parts purchased for the turbines do not meet the material standards specified in the contract."	Quality fraud involving components and materials	T1-7
P10	"Most reports are initially verbal. People prefer to assess managers' reactions before filing a formal report."	Testing managerial response through verbal reporting	T2-1
P6	"If the shift supervisor is personally involved in the misconduct, employees remain silent."	Managerial conflict of interest and cessation of reporting	T2-5
P1	"Trust in internal channels is low because employees are concerned that intermediaries may reveal their identities."	Link between channel trust and identity protection	T2-6, T3-1
P3	"Using a tracking code instead of a name and ensuring that the system cannot access technical identity information such as an IP address."	Tracking without disclosure of technical identity	T3-4
P14	"Direct employment threats are less common, but concerns about informal and long-term consequences are usually greater."	Predominance of informal and long-term retaliation	T4-4
P1	"The case-handling process is usually slow. Transparency in feedback is almost nonexistent."	Delayed handling and ambiguity of feedback	T5-1, T5-3
P6	"Investigations are sometimes merely performative. If employees do not see tangible outcomes, trust disappears."	Performative handling and erosion of trust	T5-4, T5-7
P8	"Do not get involved, or you will create problems for yourself."	Norm of caution and silence	T6-1
P1	"Establish an independent committee consisting of auditing, legal affairs, and an employee representative that provides both legal and psychological support to the whistleblower."	Independent committee with multilayered support	T7-2, T7-3, T7-4
P15	"Failure to issue warnings and engage in whistleblowing will result in corruption, rent-seeking, and the formation of mafia-like groups."	Expansion of corruption and rent-seeking as a consequence of silence	T7-9

Following constant comparison and the integration of synonymous expressions, 45 final open codes remained, as presented in Table 3. The frequency of each code represents the number of participants who provided clear evidence supporting that concept. These frequencies have a descriptive function and are not intended to substitute for the theoretical significance of the codes. The most frequently occurring codes were dependence of trust on confidentiality, previous case-handling experience, and feedback (14 participants); initiating reports through close and informal channels (13 participants); fear of identity disclosure (13 participants); culture of silence (12 participants); preventive function of reporting (12 participants); and the effect of anonymity on psychological safety (12 participants).

Table 3

Final Open-Coding Codebook and Frequency of Evidence

Code	Final Concept	Frequency
T1-1	Deliberate warning and reporting with preventive and protective functions	12
T1-2	Ethical and professional responsibility and prioritization of organizational survival over personal loyalty	9
T1-3	Good faith, evidence-based reporting, and orientation toward public/organizational interests as boundaries of whistleblowing	8
T1-4	Exclusion of personal complaints, rumors, retaliation, and disagreements of opinion from the scope of whistleblowing	5
T1-5	Safety hazards, equipment defects, concealed incidents, and environmental violations	8
T1-6	Financial, procurement, and contractual misconduct; shortages/theft; and managerial abuse	8
T1-7	Quality fraud, nonstandard materials, production concealment, and data manipulation	6
T2-1	Initiating reporting through close, verbal, and informal channels	13
T2-2	Use of formal internal channels such as HSE, human resources, legal affairs, security, and internal audit	7
T2-3	Preference for independent bodies, third parties, regulatory institutions, or online/anonymous systems	10

T2-4	Staged escalation from internal channels to higher organizational levels or outside the organization	6
T2-5	Changing the reporting route when the direct manager has a vested interest or is involved in the misconduct	5
T2-6	Dependence of trust on confidentiality, previous handling record, feedback, impartiality, and traceability	14
T3-1	Fear of direct or indirect disclosure of the reporter's identity	13
T3-2	Increased psychological safety and likelihood of reporting through anonymity	12
T3-3	Difficulty in completing evidence and conducting follow-up in anonymous reports	4
T3-4	Need for tracking codes, restricted access, and removal of technical identity markers	4
T3-5	Effect of the organization's actual history of protecting or disclosing identities on current trust	5
T4-1	Labeling, distrust, and damage to workplace relationships	8
T4-2	Exclusion from meetings, projects, teams, preferred shifts, or promotion opportunities	8
T4-3	Transfer, dismissal, reduction in income/overtime, work pressure, or threats	5
T4-4	Predominance of informal and long-term retaliation over explicit formal punishment	4
T4-5	Organizational isolation, psychological pressure, reduced motivation, and regret over reporting	6
T5-1	Speed and clearly defined timelines for case handling	8
T5-2	Impartiality, professionalism, and avoidance of arbitrary treatment	5
T5-3	Process transparency and feedback regarding status and outcomes	9
T5-4	Genuine corrective action versus performative or inconclusive handling	10
T5-5	Dependence of the speed or initiation of case handling on costs and managerial considerations	2
T5-6	Increased trust, sense of being valued, and future reporting following successful case handling	6
T5-7	Reduced trust and reinforcement of silence or external disclosure following poor case handling	11
T6-1	Culture of silence and prioritization of personal security over raising concerns	12
T6-2	Power distance, rigid hierarchy, and authoritarian/power-centered management	8
T6-3	Person-centered management, intertwined interests, and clan-like governance as a specific contextual condition	1
T6-4	First-line manager as a gatekeeper of trust or fear	9
T6-5	Participative management, openness to criticism, learning, and accountability	8
T6-6	Generational/tenure differences in reporting-channel selection	2
T7-1	Secure, confidential, anonymous, and traceable reporting system	11
T7-2	Independent committee or body outside the chain of command	9
T7-3	Clear and enforceable anti-retaliation policy and legal protection	7
T7-4	Psychological support, conversational safety, and prevention of whistleblower isolation	6
T7-5	Professional ethics training, management training, and culture building	7
T7-6	Standardized, time-bound, transparent process accompanied by periodic reporting	8
T7-7	Recognition and ethical rewards for appropriate reporting	3
T7-8	Positive consequences: correction, safety, quality, trust, and sense of usefulness	7
T7-9	Negative consequences of silence/system failure: recurrence of errors, corruption, rent-seeking, and mafia-like networks	5

To move beyond simple labeling, the properties and dimensions of key concepts were also extracted from the data. For example, "retaliation" varied in form, intensity, and timing along a continuum ranging from overt and immediate retaliation to informal, gradual, and long-term retaliation. "Trust in the reporting channel" ranged from low, superficial trust to high trust grounded in a positive record of case handling. "Anonymity" was understood in terms of the duality between reporter security and the ability to conduct follow-up. These dimensions were used during axial coding to explain the relationships among conditions, strategies, and consequences.

During axial coding, the 45 open codes were organized into 15 subcategories, and the position of each subcategory within the paradigmatic model was determined, as shown in Table 4.

Table 4

Subcategories and Their Position Within the Paradigmatic Model

Code	Subcategory	Constituent Open Codes	Paradigmatic Position
C1	Preventive and ethical orientation of reporting	T1-1 to T1-4	Causal conditions
C2	Scope of reportable misconduct	T1-5 to T1-7	Causal/contextual conditions
C3	Internal and informal reporting pathways	T2-1, T2-2	Strategy
C4	Escalation, rerouting, and channel independence	T2-3 to T2-5	Strategy
C5	Trust in the reporting channel	T2-6, T3-5	Intervening conditions
C6	Identity protection and anonymity	T3-1 to T3-4	Intervening conditions/strategy
C7	Multidimensional retaliation risk	T4-1 to T4-5	Intervening conditions
C8	Procedural and corrective quality of case handling	T5-1 to T5-5	Intervening conditions/strategy

C9	Trust–silence feedback loop	T5-6, T5-7	Consequence
C10	Culture of silence and power structure	T6-1 to T6-3	Contextual conditions
C11	Managerial role and diversity in channel selection	T6-4 to T6-6	Contextual/intervening conditions
C12	Technical architecture and independent governance	T7-1, T7-2, T7-6	Strategy
C13	Legal–psychological protection and empowerment	T7-3 to T7-5	Strategy
C14	Ethical reinforcement and recognition	T7-7	Strategy
C15	Consequences of correction or failure of the reporting system	T7-8, T7-9	Consequence

Causal Conditions. Causal conditions refer to the events and assessments that initiate the whistleblowing phenomenon. In the data, merely encountering serious misconduct or risk was insufficient; individuals also needed to perceive the issue as having consequences for employees, the organization, or society and to view reporting as an ethical or professional responsibility. P3 expressed this orientation as follows: “Whistleblowing means prioritizing the survival of the system over loyalty to an individual.” Good faith, reliance on evidence, and protection of legitimate interests distinguished this behavior from personal complaints, rumors, and retaliation. The scope of misconduct also shaped the triggering conditions and included safety hazards and equipment defects (“Reporting a hazard before an accident occurs is its most important form,” P6), financial misconduct, procurement and contract violations, quality fraud, data manipulation, and environmental violations.

Contextual Conditions. Contextual conditions describe the environment within which the decision to report or remain silent occurs. A culture of silence characterized by the norm “Do not get involved, or you will create problems for yourself” (P8), together with power distance, rigid hierarchy, and authoritarian management, created an inhibiting context. One participant described the structure of some private companies as follows: “Private companies are person-centered; shareholders and managers are intertwined and the companies are governed in a clan-like manner” (P4). Conversely, participative management, openness to criticism, learning from errors, and accountability provided a favorable context for reporting (“A participative management style can strengthen the reporting culture,” P10). In this context, the first-line manager played the role of a “gatekeeper of trust or fear,” while differences in organizational tenure and generation also influenced channel selection. Some experienced employees preferred informal channels or silence, whereas younger employees tended to prefer online reporting channels.

Intervening Conditions. These conditions modify the strength and direction of the effects of contextual conditions. Trust in the channel, prior case-handling experience, genuine confidentiality, anonymity, conflicts of interest involving the direct manager, retaliation risk, impartiality and speed of case handling, and the cost of corrective action were among the most important factors. Fear of identity disclosure was one of the most frequently expressed concerns: “Employees are worried that intermediaries will reveal their names” (P1). Retaliation more commonly took informal forms, such as labeling, exclusion from projects and meetings, reduced promotion and overtime opportunities, transfer to remote units, and social isolation: “Direct employment threats are less commonly observed, but concern about informal and long-term consequences is usually greater” (P14). Anonymity increased security; however, without coded communication mechanisms, it made follow-up more difficult: “Anonymous reporting has the advantage of psychological safety, but it sometimes makes follow-up difficult” (P8).

Strategies. Strategies emerged at both behavioral and organizational levels. At the behavioral level, employees generally initiated reporting through a close, verbal, and internal pathway, assessed the manager’s response, and, when impartiality or meaningful results were absent, escalated the matter to higher organizational levels, anonymous channels, independent bodies, or external entities. At the organizational level, participants proposed secure and traceable reporting systems,

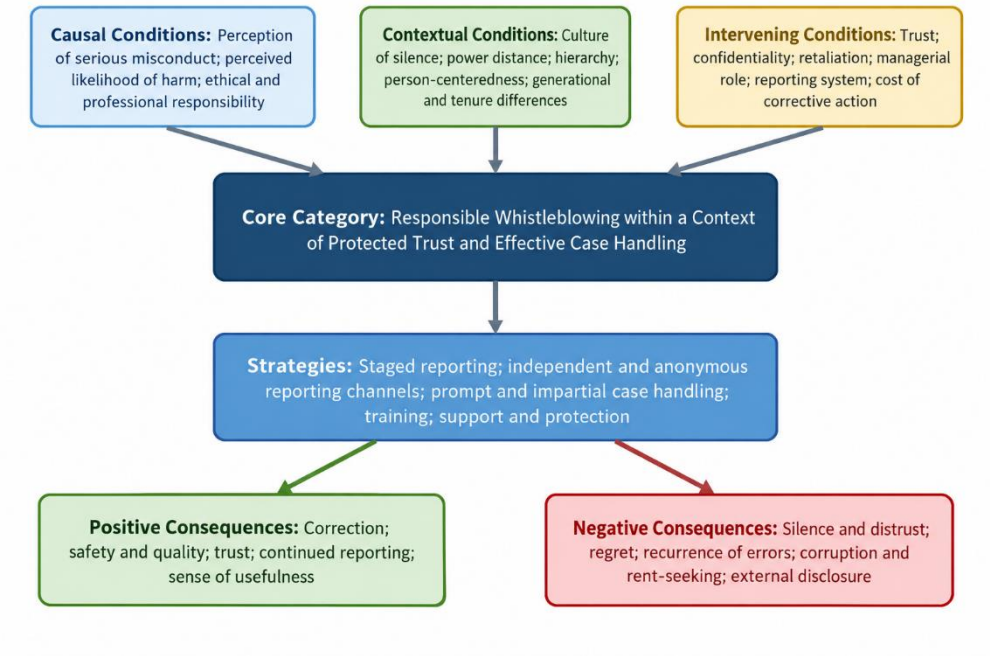
restricted access to identity information, independent committees outside the chain of command, anti-retaliation policies, legal and psychological protection, prompt and impartial case handling, feedback mechanisms, employee and manager training, and ethical recognition. Rather than financial incentives, one participant proposed "recognition for administrative integrity" (P3).

Consequences. Consequences were divided into positive and negative pathways. In the positive pathway, rapid and impartial case handling accompanied by feedback resulted in process correction, improved safety and quality, greater control of corruption, enhanced trust, a stronger sense of being valued, and continued reporting. P8 described a case in which management responded quickly after a ventilation-system defect was reported, thereby increasing employees' trust. In the negative pathway, identity disclosure, retaliation, delays, bias, or failure to produce tangible outcomes reinforced silence, regret, isolation, distrust, external disclosure, recurrence of errors, and the spread of corruption: "Investigations are sometimes merely performative. If employees do not see tangible results, trust disappears" (P6).

The final model (Figure 1) demonstrates that causal, contextual, and intervening conditions influence the core phenomenon, while the core phenomenon leads, through individual and organizational strategies, to two distinct consequence pathways. The relationships represented in this model are explanatory and grounded in participants' experiences and do not imply statistical causality.

Figure 1

Paradigmatic Model of Organizational Whistleblowing in Industrial and Mining Companies



Discussion and Conclusion

The present study developed a paradigmatic model of organizational whistleblowing in industrial and mining companies and showed that whistleblowing in these settings is not an isolated act of disclosure but a multistage organizational process shaped by ethical judgment, organizational culture, power structures, trust in reporting channels, identity protection, retaliation risk, managerial behavior, quality of case handling, and the perceived consequences of speaking up. The core category that emerged from the grounded theory analysis was "responsible whistleblowing within a context of protected

trust and effective case handling." This core category indicates that the legitimacy and sustainability of whistleblowing depend on three interconnected conditions: the report must be perceived as responsible and grounded in organizational or public interest; the reporting environment must provide credible protection to the reporter; and the organization must respond to the report through a fair, timely, and effective process. The findings further demonstrated that employees commonly begin with close, verbal, and informal reporting channels and move gradually toward higher organizational levels, anonymous systems, independent bodies, or external channels when initial routes fail. This sequential pattern suggests that whistleblowing is better understood as a dynamic process of escalation and channel selection rather than a single reporting decision.

One of the central findings was that causal conditions consisted of both the preventive and ethical orientation of reporting and the scope of reportable misconduct. Participants did not define whistleblowing merely as disclosure of any dissatisfaction; rather, they distinguished legitimate whistleblowing from personal complaints, rumors, revenge, and disagreements with supervisors. Good faith, evidence, professional responsibility, and the protection of organizational or public interests were regarded as essential boundaries. This finding is consistent with prior literature emphasizing that whistleblowing decisions are influenced by the perceived seriousness of wrongdoing, moral evaluation, and professional commitment. Gao and Brink showed that the perceived seriousness and characteristics of misconduct are among the principal determinants of whistleblowing behavior in accounting research [3]. Likewise, Tuan Mansor et al. found that professional commitment and independence commitment are important predictors of auditors' willingness to report wrongdoing [16]. Hennequin similarly demonstrated that internal whistleblowing can be motivated by ethical responsibility, protection of colleagues and organizations, and adherence to professional values rather than solely by individual self-interest [4]. Thus, the current findings support the argument that whistleblowing becomes more likely when employees interpret reporting as an extension of their professional and moral obligations.

The findings also showed that the industrial and mining context broadens the domain of reportable misconduct beyond financial fraud. Participants referred to safety hazards, equipment defects, concealed incidents, environmental violations, procurement irregularities, substandard materials, quality fraud, data manipulation, and managerial abuse. This result is important because much of the established whistleblowing literature has focused on accounting, auditing, healthcare, public administration, and sport, while industrial and mining organizations combine technical, safety, environmental, and financial risks simultaneously. The current findings are nevertheless aligned with evidence from other high-risk sectors. Blenkinsopp et al. showed that in healthcare, whistleblowing is often motivated by concerns over patient safety and care quality, emphasizing that speaking up can serve as an early warning mechanism in systems where delayed reporting may have severe consequences [5]. Hague et al. similarly found that employee voice in healthcare plays a significant role in detecting and correcting operational and safety problems [21]. Therefore, the present findings extend this logic to industrial and mining environments, where whistleblowing can function as a preventive control against occupational accidents, environmental harm, production failure, and organizational corruption.

The contextual conditions identified in this study included a culture of silence, power distance, rigid hierarchy, person-centered management, and the role of first-line managers. Participants repeatedly described organizational silence as a learned response to environments where speaking up is associated with personal risk. This finding is consistent with research showing that hierarchical structures and strong power asymmetries can suppress employee voice. Puni and Anlesinya

demonstrated that whistleblowing propensity is significantly shaped by power-distance conditions, particularly in contexts where employees are expected to defer to authority and avoid challenging senior figures [8]. Zhou and Sun also showed that perceived organizational politics can reduce employee voice because employees may consider speaking up to be costly in terms of status, relationships, and access to organizational resources [6]. The present results reinforce these findings by showing that employees in industrial and mining companies evaluate not only the formal reporting process but also the informal political consequences of bypassing or confronting powerful supervisors.

The role of managers emerged as especially important. First-line managers were described as gatekeepers of either trust or fear, meaning that their reactions can determine whether employees continue reporting or retreat into silence. Participative, criticism-tolerant, and learning-oriented management was associated with greater willingness to report, while authoritarian and power-centered management reinforced silence. This result is compatible with research demonstrating that ethical leadership can encourage employee voice by legitimizing criticism and supporting moral expression. Zheng et al. showed that ethical leadership can mitigate the negative effects of workplace ostracism and strengthen ethical voice through its influence on employees' moral identity [7]. Yue et al. likewise demonstrated that ethical leadership promotes employee voice and contributes to creativity and innovation in intelligent manufacturing contexts [9]. These studies support the present finding that managerial openness is not merely a cultural preference but a structural condition influencing whether employees interpret reporting as safe and legitimate.

A major contribution of the present study concerns the role of intervening conditions, particularly trust in reporting channels, confidentiality, anonymity, retaliation risk, and the quality of case handling. Trust in reporting channels was the most frequently observed concept in the coding process. Participants indicated that employees do not trust a channel simply because it is formally available; they evaluate whether it protects identity, produces impartial investigation, provides feedback, and has a history of meaningful corrective action. This is strongly aligned with findings from previous studies. Verschuuren found that the perceived effectiveness of reporting channels significantly influences whistleblowing behavior in the international sports sector [10]. McCarthy et al. also showed that the existence of formal voice mechanisms does not guarantee meaningful employee voice when employees doubt the credibility, accessibility, or independence of those mechanisms [11]. The present study therefore confirms that formal reporting infrastructure has little practical value unless it is accompanied by procedural credibility.

The importance of confidentiality and anonymity was another prominent finding. Participants frequently expressed fear of identity disclosure and described anonymity as a source of psychological safety. At the same time, they recognized that fully anonymous reporting may create difficulties for evidence verification and follow-up. This dual role of anonymity is consistent with current scholarship on whistleblower protection. Sommerfeldt showed that identity protection has important implications not only for reporting willingness but also for subsequent interpersonal reactions to whistleblowers [12]. Kayembe and Mvenene further argued that technology and AI-supported reporting systems may strengthen whistleblower protection by reducing exposure and enhancing confidentiality [13]. The present findings complement this work by showing that secure reporting architecture should include not merely anonymity but also coded follow-up, restricted access, and technical protection against indirect identification.

Retaliation risk emerged as multidimensional and often informal. Participants emphasized that direct dismissal or overt disciplinary action was less common than subtle retaliation, including exclusion from meetings and projects, reduced

overtime, unfavorable transfers, blocked promotion, stigmatization, and social isolation. This finding is particularly important because it shows that anti-retaliation policies focused only on formal employment sanctions may fail to address the most common forms of punishment experienced by whistleblowers. Erickson et al. demonstrated that whistleblowing is often a prolonged process rather than a single act and that reporters may continue to experience psychological and organizational consequences after the initial disclosure [14]. Moqbel et al. similarly showed that perceived whistleblowing costs significantly influence reporting intentions, indicating that employees weigh anticipated personal consequences when deciding whether to report violations [15]. The present study extends these insights by demonstrating that retaliation should be conceptualized as a layered and temporally extended organizational phenomenon.

The findings also showed that the quality of organizational response strongly shapes subsequent trust and reporting behavior. Participants differentiated effective case handling from symbolic or performative investigation. Effective handling was characterized by speed, clear timelines, impartiality, transparency, feedback, and visible corrective action. Poor handling, in contrast, produced distrust, regret, silence, and external disclosure. This result is consistent with Al-Thani and Wright's review, which emphasizes that the consequences of whistleblowing depend not only on disclosure but also on the organizational processes through which reports are received, investigated, and resolved [20]. It is also compatible with Guarin et al., who argued that employee voice develops over time through repeated experiences of managerial responsiveness or neglect [2]. Accordingly, the present findings suggest that successful case handling generates a positive feedback loop: effective responses increase trust, reinforce the perceived value of speaking up, and increase the probability of future reporting.

The strategy dimension of the model also produced important findings. Employees often began with informal or proximal reporting, assessed the manager's reaction, and escalated only when the initial response was inadequate. This staged reporting process reflects a strategic balancing of organizational loyalty, risk, and expected effectiveness. Such findings align with Erickson et al., who showed that whistleblowing processes often unfold through multiple reporting attempts rather than a single disclosure event [14]. They also correspond with Al-Thani and Wright's emphasis on the procedural and sequential nature of whistleblowing [20]. Thus, the current study contributes by showing that channel selection in industrial and mining companies is adaptive: employees change routes when supervisors are implicated, internal channels appear compromised, or previous reporting has failed.

At the organizational level, participants recommended secure and traceable systems, independent committees outside the chain of command, legal and psychological protection, anti-retaliation policies, standardized procedures, training, feedback, and ethical recognition. These strategies are consistent with the broader employee voice literature. Maynes et al. emphasized that organizations can derive substantial benefits from employee voice when they create mechanisms that encourage and effectively process employee input [1]. Said et al. also found that fair treatment and cooperative organizational relationships support whistleblowing practices [18]. In addition, Alleyne et al. demonstrated that group cohesion can shape whistleblowing intentions, suggesting that organizational interventions should address social norms and group relationships rather than focus solely on formal reporting structures [19]. The present findings support a systems-based approach in which protection, culture, governance, technology, and managerial behavior are treated as mutually reinforcing elements.

The consequence structure identified in this study was organized into two pathways: “correction–trust” and “failure–silence.” In the positive pathway, effective reporting and case handling resulted in organizational correction, greater safety and quality, corruption control, increased trust, a sense of usefulness, and continued reporting. In the negative pathway, identity disclosure, retaliation, delayed or biased handling, and absence of visible outcomes produced distrust, silence, regret, external disclosure, recurrence of error, and expansion of corruption. This dual-path model is theoretically important because it shows that whistleblowing systems generate cumulative organizational learning effects. A successful case can strengthen the legitimacy of reporting for future employees, while a failed case can create collective evidence that silence is safer. This interpretation is consistent with Guarin et al.’s longitudinal perspective on employee voice, which emphasizes that voice behavior is shaped by prior organizational experiences and evolving expectations [2]. It is also compatible with the broader argument that voice mechanisms contribute to organizational effectiveness only when management responds constructively [1].

Overall, the findings indicate that organizational whistleblowing in industrial and mining companies should be understood as a governance system rather than as an individual act of courage. The model developed in this study integrates ethical motivation, organizational context, reporting-channel trust, retaliation, managerial behavior, technical protection, response quality, and organizational consequences into a single explanatory framework. This interpretation is supported by previous research showing that whistleblowing decisions emerge from the interaction of professional commitment, cultural context, perceived costs, organizational justice, reporting-channel design, and managerial response [4, 15-17]. The present study adds to this literature by demonstrating how these factors combine specifically in industrial and mining settings and by highlighting the recursive relationship between handling quality and future reporting. In this model, responsible reporting provides legitimacy, protection enables disclosure, and effective handling sustains the reporting system over time.

The present study had several limitations. First, the findings were derived from 15 experts and key informants working in industrial and mining companies located in one provincial context, and although theoretical saturation was achieved, the findings may reflect features of the local organizational and institutional environment. Second, participants represented different organizational functions and company types, which increased diversity but may also have introduced differences in exposure to misconduct and reporting systems. Third, because the study relied on retrospective interview accounts, some experiences may have been affected by recall bias, selective interpretation, or reluctance to disclose highly sensitive details. Fourth, the qualitative design was intended to develop an explanatory model and therefore does not permit statistical generalization or estimation of causal effect sizes.

Future research should test the proposed paradigmatic model quantitatively using a large and heterogeneous sample of employees from industrial and mining companies. The 15 subcategories identified in the present study can be transformed into measurable constructs and examined through confirmatory factor analysis and structural equation modeling. Comparative studies across industries, organizational ownership types, regions, and national contexts would also help determine which elements of the model are context-specific and which are more generalizable. Longitudinal research is particularly recommended to examine how trust in reporting channels changes following successful or unsuccessful case handling. Future studies could also investigate differences between anonymous and identified reporting, internal and external whistleblowing, managerial and non-managerial employees, and younger and more experienced workers.

Experimental or vignette-based research may further clarify how severity of misconduct, managerial involvement, anonymity, retaliation risk, and feedback affect reporting decisions.

From a practical perspective, industrial and mining companies should design whistleblowing systems as integrated governance mechanisms rather than as isolated complaint channels. Organizations should provide multiple reporting routes, including confidential internal systems, anonymous digital channels, and independent alternatives outside the direct chain of command. Clear anti-retaliation policies should explicitly address informal forms of punishment such as exclusion, blocked promotion, unfavorable transfers, and reduced work opportunities. Reporting procedures should specify investigation timelines, responsibility for case handling, feedback mechanisms, and criteria for corrective action. Access to identity information should be strictly limited, and coded communication should allow anonymous reporters to provide additional evidence and receive updates. Managers, especially first-line supervisors, should receive training in ethical leadership, nondefensive response to concerns, and protection of reporters. Organizations should also monitor reporting outcomes, communicate corrective actions when confidentiality permits, provide psychological and legal support to reporters, and reinforce the message that responsible whistleblowing is a legitimate contribution to safety, integrity, and organizational improvement.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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