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Environmental Prevention Cost Through Siri' na Pacce: An Ethnomethodological Study of Environmental Accounting Practices in Indonesia

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ABSTRACT

This study examines the meaning of Environmental Prevention Cost as understood and practiced by workers and management at PT Karya Rappo Indonesia through the cultural lens of Siri' na Pacce. Using an interpretive paradigm and an ethnomethodological approach, data were collected through in-depth interviews, observations, and documentation involving management, finance/accounting personnel, and production workers. Data were analyzed using indexicality, reflexivity, and contextuality to explore how organizational actors construct and enact the meaning of environmental prevention costs in everyday practices. The findings indicate that Environmental Prevention Cost is not merely perceived as an operational expenditure but as a mechanism for maintaining production quality, organizational dignity, and environmental responsibility. Management interprets prevention costs as a strategic investment for sustainability, while workers enact them through preventive practices such as material sorting, raw material cleaning, equipment maintenance, workplace sanitation, and residue control. The values of Siri' reinforce prevention as a form of preserving self-respect and organizational honor, whereas Pacce promotes empathetic responsibility toward communities and the environment affected by business activities. This study contributes to environmental and sustainability accounting literature by demonstrating that environmental prevention costs extend beyond economic and technical considerations and are socially constructed through local cultural values. The findings advance socio-cultural perspectives in accounting by highlighting how indigenous values shape environmental accountability and sustainability practices within organizational settings.

1. Introduction

Environmental impact is no longer considered an external issue outside the scope of accounting. Corporate economic activities inherently generate ecological consequences that must be identified, traced, and managed through relevant decision-useful information. In this context, Environmental Management Accounting provides both physical and monetary information to understand the relationship between operational activities, resource consumption, waste generation, and environmental cost consequences (Burritt et al., 2002; Hasan et al., 2024; International Federation of Accountants, 2005). Recent studies further indicate that Environmental Management Accounting plays a significant role in supporting environmental cost efficiency and sustainability-oriented strategic decisions; however, its effectiveness largely depends on how such information is internalized within organizational processes (Hasan et al., 2024; Huynh & Nguyen, 2024; Swalih et al., 2024; Zahrani & Sari, 2025).

Within the environmental cost framework, Environmental Prevention Cost

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represents a critical component. Guan et al., (2009) classify environmental quality costs into prevention costs, detection costs, internal failure costs, and external failure costs. Prevention costs are positioned at the earliest stage because they are directed toward avoiding waste generation, pollution, or environmental failure before negative impacts occur. From a cost accounting logic, prevention activities can significantly reduce higher future failure costs. However, in organizational practice, prevention costs are often treated merely as operational expenditures, while their social dimensions, lived experiences, and ethical values remain underexplored.

The urgency of environmental prevention has become increasingly prominent in Indonesia's plastic waste management context. The National Research and Innovation Agency (2024) reports that national waste generation reached 31.9 million tons based on data input from 290 regencies/cities as of July 24, 2024, with a substantial portion still not properly managed. Similarly, Systemiq and The Pew Charitable Trusts (2020) indicate that without upstream systemic changes, waste management costs are projected to increase significantly by 2040. This condition illustrates that prevention is not merely technical, but also a strategic choice to reduce residual waste, minimize environmental burden, and ensure operational sustainability. Prevention-oriented environmental practices are increasingly recognized as critical capabilities supporting circular economy implementation and environmental performance improvement (Acquah et al., 2024; Rashid, 2025).

Despite its importance, studies on Environmental Prevention Cost in Indonesia have largely focused on classification, recording, and cost control perspectives. Budianto et al. (2025) show that environmental costs can be understood through pollution prevention practices in batik enterprises; however, there remains limited exploration of how such costs are socially and culturally interpreted by organizational actors. In addition, studies on local cultural values, such as Siri' na Pacce, are more frequently positioned within discussions of ethics, governance, or social responsibility, rather than being specifically used as an interpretive lens for environmental prevention cost meaning. This gap opens an important space for inquiry by linking Environmental Prevention Cost as a concept of environmental cost accounting with Siri' na Pacce as a living cultural lens in the Bugis-Makassar context.

Siri' na Pacce is conceptually important because it embodies two complementary ethical dimensions. Siri' is associated with honor, shame, self-esteem, and the drive to maintain dignity, while Pacce relates to empathy, care, and sensitivity toward the suffering of others (Mattulada, 1995; Pelras, 1996). In organizational contexts, these values may function as a moral horizon shaping why certain actions are considered appropriate, necessary, or obligatory. Prior studies by Nur et al. (2021) and Daud et al. (2024) demonstrate that local cultural values in South Sulawesi can influence responsibility orientation, compliance, and social behavior. Thus, Siri' na Pacce has the potential to enrich the understanding of environmental prevention costs, which have predominantly been framed through economic rationality.

PT. Karya Rappo Indonesia represents a relevant site for examining the intersection between environmental accounting practices and local cultural values. This relevance is strengthened by evidence from Indonesia's plastic recycling industry showing that environmental accounting and circular economy practices can enhance organizational sustainability and operational performance (Ardini & Fahlevi, 2024). The company operates in plastic waste management and reuse, embedded within a social business ecosystem that connects production activities, community empowerment, and environmental responsibility (BCIC IKM, 2024; Karya Kreatif Indonesia, 2026). In such a setting, Environmental Prevention Cost does not merely appear as a budgeting decision, but as everyday practices involving material sorting,

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raw material cleaning, equipment maintenance, workplace hygiene, and residue control. These practices open the possibility of understanding prevention costs as a socially constructed phenomenon shaped by both management and workers.

Based on this context, this study aims to uncover the meaning of Environmental Prevention Cost through the cultural lens of Siri' na Pacce from the perspective of workers and management at PT. Karya Rappo Indonesia. This study contributes in three ways. First, it expands environmental accounting literature by positioning Environmental Prevention Cost as a socially and culturally embedded practice rather than a mere cost category. Second, it introduces Siri' na Pacce as an interpretive framework for understanding environmental cost accounting within a local context. Third, it employs ethnomethodology to explore how meanings of prevention costs are constructed through language, actions, and daily work routines. The novelty of this study lies in integrating environmental prevention cost accounting with the cultural epistemology of Siri' na Pacce through an ethnomethodological perspective in the context of Indonesian environmental practice.

2. Literature Review

2.1 Conceptual and Theoretical Foundations

2.1.1 Environmental Management Accounting and Environmental Prevention Cost

Environmental Management Accounting is an internal information tool that helps organizations connect operational activities with environmental consequences and costs. Burritt et al. (2002) explain that Environmental Management Accounting links business actors with environmental information tools, both in physical and monetary forms. International Federation of Accountants (2005) also emphasizes that environmental information needs to be used to design more preventive decisions, not only to record impacts after damage has occurred. In the context of sustainability, environmental accounting becomes a bridge between normative commitments to ecological responsibility and concrete managerial decisions. Environmental Management Accounting is also increasingly viewed as an instrument for achieving sustainable development objectives by integrating environmental concerns into organizational management systems (Afiah et al., 2024). Furthermore, EMA contributes to sustainability transitions by integrating environmental considerations into managerial planning and organizational decision-making processes (Huynh & Nguyen, 2024).

Environmental Prevention Cost is one of the main categories in environmental quality costs. Guan et al. (2009) explain that prevention costs include activities such as supplier evaluation, selection of pollution control equipment, process and product design that reduce pollution sources, employee training, and environmental studies. Burritt et al. (2010) emphasize that cost and material flow information can help organizations reduce waste at its source. Recent circular accounting studies further emphasize the importance of tracing material flows as a foundation for waste prevention and resource circularity (Aranda-Usón et al., 2024). In this logic, prevention has a strategic position because costs incurred at the beginning of the process can reduce the risk of waste, internal failure, environmental damage, and reputational burden.

However, prevention costs cannot be fully understood through numbers alone. Gray, (2010) and Milne and Gray (2012) remind that environmentally sound reports in a technical sense do not necessarily reflect social experiences, interest conflicts, and the values operating behind organizational practices. Therefore, Environmental Prevention Cost needs to be read as a social practice involving actors, language, habits, and context. This view is consistent with Ahrens and Chapman (2007), who see management accounting as a practice formed through everyday organizational activities, not merely a formal system standing

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outside the actors.

2.1.2 Siri' na Pacce as a Cultural Lens in Environmental Accounting

Siri' na Pacce is a Bugis-Makassar cultural value containing principles of honor and care. Mattulada (1995) explains Siri' as an inner call to maintain dignity and what is respected, both for oneself and for the group. Pelras (1996) explains that Siri' is related to life, self-esteem, and honor, while Pacce or Pesse refers to deep empathy for the suffering of others. Thus, Siri' na Pacce is not only a cultural identity but also an ethical framework that directs action.

In an organizational context, Siri' can function as a drive to maintain reputation, integrity, and appropriateness of actions. Pacce can function as sensitivity to prevent others from bearing the negative impacts of organizational actions. Ardhy (2024) explains that Siri' na Pacce remains relevant as an ethical horizon in the modern era because it combines the dimension of honor with concern for others. In environmental accounting, this value allows prevention costs to be read not only as expenditures, but as actions to maintain organizational dignity and reduce potential ecological burdens on society.

Cultural-based interpretation is important to avoid reducing environmental accounting into mere recording techniques. Gray et al. (2014) emphasize that social and environmental accounting relates to organizational accountability to society and the environment. Within the Siri' na Pacce framework, accountability does not only mean presenting verifiable information, but also ensuring that organizational actions do not damage honor, social relations, and environmental integrity. Thus, local values can provide moral depth to Environmental Prevention Cost practices.

2.1.3 Ethnomethodology in the Interpretation of Accounting Practices

Ethnomethodology developed by Garfinkel (1967) focuses on how social actors create and maintain social order through everyday actions. Heritage, (2013) explains that ethnomethodology pays attention to how members of society use practical knowledge to make the social world appear orderly, reasonable, and understandable. In accounting research, this approach is relevant because accounting practices do not only exist in formal procedures but also in how actors explain, justify, and normalize actions.

The three interpretive lenses used in this study are indexicality, reflexivity, and contextuality. Indexicality helps interpret meanings of terms and actions that are highly dependent on context, such as the expressions "cleaned safely" or "disrupting workflow." Reflexivity helps understand how actors' explanations simultaneously construct the legitimacy of preventive actions. Contextuality situates utterances and practices within the specific conditions of a plastic recycling company in Makassar operating within the cultural horizon of Siri' na Pacce. Through these three lenses, Environmental Prevention Cost can be understood as an order of practice shaped by language, action, and values.

2.2 Review of Empirical Studies

This section critically reviews prior empirical and conceptual studies that are thematically related to Environmental Management Accounting (EMA), Environmental Prevention Cost, culturally embedded accounting practices, and ethnomethodological interpretations of accounting practices. The literature indicates that EMA has been widely discussed as an internal information system that links operational activities with environmental impacts. Burritt et al. (2002) and the International Federation of Accountants (2005) emphasize that EMA functions not only as a reporting mechanism but also as a decision-support tool that enables preventive environmental management. This reflects a shift from reactive environmental reporting toward proactive environmental decision-making systems.

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In relation to environmental cost structures, Guan et al. (2009) and Burritt et al. (2010) demonstrate that Environmental Prevention Cost plays a strategic role in reducing waste at its source through supplier evaluation, pollution control investment, process redesign, and employee training. These studies consistently highlight that prevention-oriented investments can reduce long-term environmental damage and operational inefficiencies. However, they predominantly treat environmental costs as technical-economic constructs, with limited attention to socio-cultural dimensions.

Critical perspectives from Gray (2010) and Milne and Gray (2012) challenge this technocratic view by arguing that environmental accounting reports may not fully capture lived experiences, conflicts of interest, and value systems embedded in organizational practices. Nevertheless, a growing body of evidence suggests that environmental accounting practices can simultaneously support sustainability objectives and organizational performance when effectively embedded in management systems (Ramautar & España, 2022). Ahrens and Chapman (2007) further reinforce this argument by positioning management accounting as a socially constructed practice shaped through everyday organizational interactions rather than merely a formal system.

Within the cultural domain, Siri' na Pacce has been widely discussed as a value system rooted in Bugis-Makassar culture. Mattulada (1995) explains Siri' as an internal moral force related to dignity and honor, while Pelras (1996) emphasizes Siri' as closely related to self-esteem and social honor, and Pacce as deep empathy for others' suffering. Ardhy (2024) further argues that Siri' na Pacce remains relevant in contemporary organizational ethics because it integrates dignity and social concern.

Finally, ethnomethodological studies such as Garfinkel (1967) and Heritage (2013) emphasize that social order is continuously constructed through everyday practices, language, and shared meanings. This approach is increasingly applied in accounting research to interpret how accounting practices are enacted rather than merely designed. However, integration between ethnomethodology, environmental accounting, and local cultural ethics remains limited, particularly in environmental cost studies in developing country contexts.

2.3 Identification of the Research Gap

Based on the synthesis of theoretical and empirical literature, several research gaps can be identified.

First, although Environmental Management Accounting has been widely conceptualized as a decision-support system (Burritt et al., 2002; International Federation of Accountants, 2005), most studies remain dominated by technical and economic perspectives, with limited exploration of socio-cultural meanings embedded in environmental cost practices. Although recent studies have linked EMA to sustainable business performance under institutional pressure, limited attention has been paid to how environmental cost practices are interpreted within local socio-cultural contexts (Kadir et al., 2025).

Second, research on Environmental Prevention Cost (Burritt et al., 2010; Guan et al., 2009) primarily focuses on efficiency, waste reduction, and operational design, but rarely investigates how prevention costs are interpreted and socially constructed within organizations.

Third, critical accounting literature Ahrens and Chapman (2007), Gray (2010), Milne and Gray (2012) acknowledges the social nature of accounting, yet empirical integration with environmental cost accounting remains underdeveloped, particularly in recycling-based industries in emerging economies.

Fourth, although Siri' na Pacce has been widely studied as a cultural ethical system (Mattulada, 1995; Pelras, 1996), its application as an interpretive lens in environmental

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accounting—especially Environmental Prevention Cost—remains limited.

Finally, ethnomethodological approaches by Garfinkel (1967) and Heritage (2013) have not been extensively integrated into Environmental Management Accounting research. There is still limited understanding of how indexicality, reflexivity, and contextuality shape environmental prevention cost practices.

These gaps indicate the need for an integrative study combining Environmental Management Accounting, Environmental Prevention Cost, cultural ethics, and ethnomethodology.

2.4 Development of the Conceptual Framework

This study integrates four main conceptual domains: Environmental Management Accounting, Environmental Prevention Cost, Siri' na Pacce cultural values, and ethnomethodological interpretation.

Environmental Management Accounting is defined as an internal information system linking organizational activities with environmental consequences in both physical and monetary terms (Burritt et al., 2002; International Federation of Accountants, 2005). In addition, EMA supports organizational sustainability by facilitating the incorporation of environmental information into managerial planning and strategic decision-making (Huynh & Nguyen, 2024). Within this system, Environmental Prevention Cost refers to proactive expenditures aimed at reducing environmental risks at the source, including supplier evaluation, pollution prevention technologies, employee training, and environmentally oriented product design (Burritt et al., 2010; Guan et al., 2009).

However, environmental costs are not purely technical constructs but socially constructed practices shaped by actors, language, and organizational context (Ahrens & Chapman, 2007; Gray, 2010; Milne & Gray, 2012).

The cultural dimension of Siri' na Pacce by Ardhy (2024), Mattulada (1995), and Pelras (1996) introduces ethical values of honor (Siri') and empathy (Pacce), which potentially influence how environmental prevention costs are justified and prioritized in organizational decision-making.

Ethnomethodology by Garfinkel (1967) and Heritage (2013) provides analytical tools through indexicality, reflexivity, and contextuality to understand how actors construct meaning in everyday accounting practices.

Overall, the conceptual framework positions Environmental Prevention Cost as a socially and culturally embedded accounting practice shaped by institutional logic, ethical values, and everyday organizational interactions.

2.5 Research Propositions

This qualitative study develops the following research propositions:

Proposition 1: Environmental Prevention Cost is not only a technical and financial category but also a socially constructed practice within Environmental Management Accounting systems (Ahrens & Chapman, 2007; Burritt et al., 2002; International Federation of Accountants, 2005).

Proposition 2: The meaning and implementation of Environmental Prevention Cost are influenced by Siri' na Pacce values, particularly honor (Siri') and empathy (Pacce), which shape organizational responsibility toward environmental impacts (Ardhy, 2024; Mattulada, 1995; Pelras, 1996)

Proposition 3: Environmental Prevention Cost is constructed through everyday organizational interactions reflecting indexicality, reflexivity, and contextuality (Garfinkel, 1967; Heritage, 2013).

Proposition 4: Environmental accounting practices, cultural ethics, and social meaning construction are interrelated in shaping Environmental Prevention Cost implementation.

3. Research Methods

3.1 Research Design

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This study uses a qualitative research design within an interpretive paradigm supported by an ethnomethodological approach. The design is selected to explore how Environmental Prevention Cost is socially constructed and understood by organizational actors rather than measured quantitatively. The interpretive design serves as a strategic framework that guides the collection and analysis of data by emphasizing meaning-making processes, social interactions, and contextual interpretation. This approach ensures methodological consistency and scientific rigor in understanding the lived experiences of actors involved in environmental prevention practices. Ethnomethodology is considered appropriate because the study focuses on how organizational actors produce, recognize, and sustain the practical meaning of Environmental Prevention Cost through their everyday language, interactions, and workplace practices. Rather than treating Environmental Prevention Cost as a predetermined accounting construct, the approach examines how prevention-related costs and practices become meaningful through actors' situated actions and interpretations. This perspective is particularly relevant to understanding *Siri' na Pacce*, because its meaning is expressed not only through explicit statements but also through practical conduct, interpersonal interactions, and context-specific workplace practices.

3.2 Research Context and Setting

The research was conducted at PT. Karya Rappo Indonesia, a company engaged in plastic waste management and recycling in Makassar, Indonesia. This setting was chosen purposively due to its direct relevance to plastic waste issues, recycling practices, and Bugis-Makassar socio-cultural values embedded in organizational behavior. The context provides a unique empirical setting to explore how environmental prevention costs are understood and practiced within a sustainability-oriented organization operating in a culturally rich environment.

3.3 Research Participants and Sampling Strategy

The participants in this study were selected using purposive sampling based on their direct involvement in decision-making, cost management, and production activities related to environmental prevention practices. The study involved three organizational actors representing management, finance/accounting, and production roles, namely M1, A1, and P1. These three participants constituted the primary and complete set of research participants included in the analysis. No additional individuals were interviewed and subsequently excluded from the analysis.

M1 was the Management/CEO & Founder, whose responsibilities included providing policy direction, determining sustainability strategies, and making decisions related to environmental prevention practices. M1 was selected because of their direct authority and involvement in organizational policies, sustainability strategies, and environmental prevention decisions.

A1 was a finance, accounting, and tax staff member responsible for cost management, budgeting, asset control, and prevention-related administration. A1 was selected because of their direct involvement in financial administration, cost-related practices, budgeting, and the recording or management of activities associated with environmental prevention.

P1 was a production staff member involved in material sorting, workplace cleanliness, and residue control. P1 was selected because of their direct involvement in day-to-day production activities and environmental prevention practices, particularly material sorting, workplace cleanliness, and residue control.

The selection of these three participants was intended to capture variations in organizational roles and perspectives relevant to the construction of the meaning of Environmental Prevention Cost. Accordingly,

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the participants were not intended to statistically represent a population, but rather to provide contextually situated accounts from organizational actors directly involved in management, financial and accounting administration, and production activities related to environmental prevention.

Table 1. Research Informants

Code	Position	Involvement	Data Collection Techniques
M1	Management/CEO & Founder	Policy direction, sustainability strategy, and prevention decisions	Interview, observation, documentation
A1	Finance, accounting, and tax staff	Cost management, budgeting, asset control, and prevention administration	Interview, observation, documentation
P1	Production staff	Material sorting, workplace cleanliness, and residue control	Interview, observation

3.4 Data Sources and Data Collection

Data were collected using in-depth interviews, participant observation, and documentation. Interviews were designed to capture participants' explanations regarding prevention practices, cost considerations, operational relationships, and the meaning of Siri' na Pacce in workplace actions. Observation was conducted to understand the working context, particularly activities such as material sorting, cleanliness practices, equipment arrangement, workspace maintenance, and waste control. Documentation was used to complement and validate understanding of company profiles, operational procedures, and environmental management records.

3.5 Measurement of Variables and Research Instruments

As this study adopts a qualitative interpretive design, it does not employ statistical variable measurement. Instead, key concepts such as Environmental Prevention Cost are operationalized through thematic constructs derived from participants' narratives and field observations. The interview guide, observation checklist, and documentation review framework were developed based on relevant literature on environmental management accounting and ethnomethodology. These instruments were used flexibly to capture meaning construction processes, with indicators emerging from field interactions rather than standardized measurement scales.

3.6 Data Analysis Techniques

Data analysis was conducted using ethnomethodological analysis consisting of three main stages. First, indexicality was used to interpret terms, expressions, and actions whose meanings depend on specific work contexts. For example, expressions used by participants concerning cleanliness, responsibility, cooperation, or *Siri' na Pacce* were interpreted by referring to the particular workplace situation, interaction, and activity in which those expressions were used. Thus, the researcher did not assume that a particular expression had a fixed meaning outside its organizational context. Second, reflexivity was applied to examine how participants' explanations not only describe actions but also justify and reinforce the regularity of environmental prevention practices. For instance, when participants explained why particular environmental prevention activities were considered necessary or responsible, their explanations were examined as part of the process through which the practice itself was made reasonable and routinely

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maintained. Third, contextuality was used to situate findings within PT. Karya Rappo Indonesia as a plastic recycling company embedded in Bugis-Makassar cultural values. Contextuality was examined by relating participants' statements and interactions to the actual workplace setting, organizational roles, and environmental prevention activities observed by the researcher. In this way, *Siri' na Pacce* was interpreted through its manifestation in situated workplace practices rather than treated merely as an abstract cultural concept.

The analysis proceeded systematically from transcription and data familiarization to the identification of meaningful statements, interactions, and workplace practices. The researcher repeatedly read the verbatim interview transcripts and field notes, identified context-dependent expressions and actions, compared these with the situations in which they occurred, and examined how participants accounted for and reproduced environmental prevention practices. Relevant documentary evidence was then compared with interview and observation data. The analysis focused on the practical accomplishment of meaning in everyday organizational interactions, distinguishing it from conventional thematic analysis, which primarily seeks to categorize recurring topics or themes. In the present study, themes were developed only after examining how participants produced and negotiated meaning through situated language, interaction, and action.

Throughout the analysis process, interview data were continuously compared with observation notes and documentary evidence to ensure interpretive depth and consistency across data sources. Any discrepancies between interview statements, observed practices, and documentary evidence were not immediately treated as errors; instead, they were revisited in their respective contexts and interpreted as potentially meaningful differences between what participants said, what they did, and what organizational documents formally recorded.

3.7 Validity, Reliability, and Trustworthiness

The trustworthiness of the data was ensured through triangulation of sources and techniques, repeated observations, and iterative reading of transcripts. Source triangulation was conducted by comparing perspectives from management, finance/accounting staff, and production workers. Technique triangulation involved cross-checking interview data with field observations and company documentation. These strategies were used to strengthen credibility and ensure that the meaning of Environmental Prevention Cost emerged from the interconnectedness of language, action, and context.

Triangulation was conducted at the level of specific empirical information rather than being treated only as a general validation procedure. Statements from M1 concerning environmental prevention policies and decisions were compared with A1's explanations of cost management and prevention administration and with relevant observations and documents. Statements from A1 concerning cost-related practices were compared with observed workplace activities and available company records, while statements from P1 concerning material sorting, cleanliness, and residue control were compared with the researcher's field observations. Where differences occurred between interview accounts, observations, and documents, the researcher revisited the relevant field notes, transcript sections, and documentary evidence and interpreted the discrepancy according to the context in which each form of evidence was produced.

Researcher reflexivity was also maintained throughout data collection and analysis. The researcher recognized that the interpretation of culturally embedded concepts such as *Siri' na Pacce* could be influenced by the researcher's own assumptions and perspective. Therefore, interpretations were continually checked against participants' actual language, observed interactions, field notes,

and documentary evidence. The researcher also distinguished participants' explanations from the researcher's analytical interpretation to strengthen confirmability and reduce the possibility that cultural meanings were imposed externally on the data.

3.8 Ethical Considerations

This study adhered to ethical research principles by ensuring informed consent from all participants prior to data collection. Confidentiality and anonymity were maintained by using participant codes (M1, A1, P1) instead of real names. All data were used solely for academic purposes, and participants were informed about the objectives of the study. Ethical compliance was maintained to safeguard participants' rights and ensure academic integrity throughout the research process.

3.9 Research Procedure

The research was conducted through several structured stages. First, the researcher identified the research problem and selected the interpretive ethnomethodological approach. Second, the research site and participants were determined purposively. Third, data collection was carried out through interviews, observations, and documentation. During this stage, the researcher conducted participant observation, recorded field notes, conducted semi-structured in-depth interviews, and collected documentary evidence selected according to its relevance to the research focus. Interviews were [audio-recorded with participants' consent] and transcribed verbatim. Fourth, collected data were organized and transcribed for analysis. Fifth, data were analyzed using indexicality, reflexivity, and contextuality. The analysis involved repeated reading of transcripts and field notes, identification of situated language and workplace interactions, comparison of participants' accounts with observed practices and documentary evidence, and development of interpretations based on how meaning was practically constructed in context. Finally, findings were validated through triangulation to ensure interpretive accuracy and credibility.

3.10 Methodological Limitations

This study has several methodological limitations inherent in its qualitative interpretive design. First, the use of a small number of informants limits generalizability to broader populations. Second, findings are highly context-dependent, as they are grounded in a single organizational setting. Third, interpretations are influenced by the researcher's subjective engagement in the data analysis process. However, these limitations are acknowledged as inherent in interpretive ethnomethodological research, where the primary objective is depth of understanding rather than statistical generalization.

4. Results and Discussion

4.1 Research Results

4.1.1 Sample Description and Descriptive Statistics (Empirical Findings)

a. Prevention as an Upstream Operational Practice

The research findings indicate that Environmental Prevention Cost at PT. Karya Rappo Indonesia primarily emerges in upstream operational activities. Prevention begins when post-consumer plastic materials are curated, cleaned, dried, and ensured to be suitable before entering the production process. These activities are not understood merely as technical work, but as a mechanism to prevent dirty materials, residues, or contamination from entering the production stage and creating new problems. This is reflected in M1's explanation that materials must be "safely cleaned" because they pose risks to worker health and production machine performance.

> "...we have to make sure that the waste has been safely cleaned up, and there are also potential health risks involved, as well as operational issues with the machines, since recycling machines aren't widely available in Indonesia, so it's not easy when one breaks down..."

(M1, Management/CEO & Founder, April 2026).

The phrase "safely cleaned" has an indexical meaning because it can only be understood in the context of plastic recycling. To outsiders, the phrase may appear to be a routine cleaning instruction. However, for those working at PT. Karya Rappo Indonesia, the phrase refers to internal standards regarding materials that are safe for workers, do not damage machinery, and do not produce new residues. Thus, material cleaning serves as a preventive practice that maintains process quality and reduces the risk of production failures.

Prevention costs are not limited to formal training or process design, but also exist in repetitive and seemingly simple operational actions. In the context of PT. Karya Rappo Indonesia, labor for material cleaning, time spent sorting plastics, and discipline in maintaining workflow constitute economic sacrifices that prevent waste from being released back into the environment. Prevention occurs before damage becomes visible; therefore, its benefits are often not directly observable as numbers, but as process stability and reduced risk.

b. Prevention Cost as Organizational Investment

One of the key findings of this study is the shift in meaning of Environmental Prevention Cost from expenditure to sustainability investment. A1 explains that costs for cleaning materials, repairing assets, or maintaining equipment are necessary expenditures because they are part of corporate responsibility. In this study, these prevention-related costs were identified through participants' explanations of cost-bearing activities and organizational practices rather than through disclosed monetary amounts. The available empirical evidence therefore supports the identification and interpretation of prevention cost categories and their organizational meaning, but does not provide sufficient accounting records to quantify their monetary value, budget proportions, or formal cost allocations. This indicates that prevention costs are not narrowly understood as burdens that reduce profit, but as sacrifices that maintain production continuity and reduce potentially larger future costs.

Reflexivity appears when informants describe prevention costs as reasonable, necessary, and accountable. A1, for instance, explains that if materials are not suitable, they must be cleaned first "so they do not go back into the environment." This explanation not only describes cleaning activity but also constructs legitimacy that labor costs, time, and attention to materials are part of corporate environmental responsibility. In other words, informants' narratives construct an orderly meaning that prevention costs are valuable costs.

> "We sort through the waste again to determine whether it's still suitable for immediate shipment; if not, we usually clean any waste that's still dirty first. That definitely incurs additional costs for the workers to clean it before returning it to the startup that will manage our waste so it doesn't end up in the environment again." (A1, Finance, Accounting, and Tax Staff, April 2026).

From a managerial perspective, prevention costs are also attached to organizational reputation sustainability. M1 states that it is better to incur higher upfront costs for machine maintenance or raw material cleanliness standards than to face machine breakdowns and material failure later. This reflects a preventive logic aligned with environmental quality cost literature: prevention at the beginning is more rational than failure handling at the end. However, this finding adds a cultural dimension: such costs are also understood as a way to preserve the company's dignity as a clean waste-processing organization.

> "We'd rather spend a little more upfront on machine maintenance or ensuring the hygiene standards of our raw materials

than have the machines break down in the middle of the process and end up with plastic waste that can't be used anymore. That's a necessary preventive cost for us to uphold our company's reputation as a clean waste processing facility." (M1, Management/CEO & Founder, April 2026).

This finding strengthens Ahrens et al. (2007) that management accounting is embedded in everyday organizational practices. Environmental Prevention Cost does not stand as an abstract classification, but operates through how actors justify expenditures, evaluate cost reasonableness, and link them to the organization's future. At this point, prevention costs acquire a dual meaning: economically rational because they reduce failure costs, and socially meaningful because they protect organizational reputation and responsibility.

c. Control Workers' Everyday Prevention Practices

From the workers' perspective, Environmental Prevention Costs are better understood through concrete actions than through formal accounting terms. Workers interpret them through material sorting, cleaning of raw materials, tool return practices, workplace cleanliness maintenance, and control of material waste. P1 explains that materials and tools not returned to their proper places can disrupt workflow, prolong search times, and cause production delays. In ethnomethodological terms, the phrase "disrupting workflow" indicates strong indexicality because it refers to a sequence of work understood only by the actors within the production space.

"Every type of material has its own designated place. Organizing them takes time and discipline... so that plastic scraps don't end up scattered around and disrupt our workflow." (P1, Production Staff, April 2026).

In this context, workplace orderliness is not merely physical neatness. Neatness becomes part of the prevention system because it avoids time waste, reduces error risks, and suppresses potential formation of new residues. This practice shows that workers are key actors in enacting Environmental Prevention Cost. They may not explicitly label their actions as prevention costs, but their practices make prevention materially real. Thus, prevention costs are not only managerial decisions but collective outcomes requiring disciplined execution.

That environmental management requires tracing costs and material flows from their source. However, field findings show that such tracing occurs not only in accounting systems but also in work habits. When workers sort, clean, organize, and control residues, they are effectively performing Environmental Management Accounting in practical form: ensuring material flows do not become sources of waste and environmental impact.

d. Siri' as Organizational Dignity

Siri' emerges in this study as a value that provides a moral foundation for prevention actions. P1 states that working carelessly and allowing plastic residues to pollute the surrounding environment would create shame because it could damage Rappo's reputation. This indicates that environmental prevention is not only driven by procedures but also by a sense of honor attached to worker and organizational identity. Siri' frames prevention as a means of preserving dignity.

"Here, we don't just work for a paycheck. There's a strong sense of shame (Siri') if we do a sloppy job, especially if the leftover plastic scraps end up polluting the surrounding environment. Upholding Rappo's good name means upholding our self-respect as environmentally conscious people of Makassar." (P1, Production Staff, April 2026).

The meaning of Siri' is consistent with Mattulada (1995, pp. 62–63), who positions Siri' as an inner call to defend dignity and honor. In PT. Karya Rappo Indonesia, this dignity is attached to the company's image as a

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clean, responsible, and socially impactful waste processor. If a recycling company produces pollution, the failure is not merely technical but also a matter of organizational honor.

At the managerial level, Siri' is reflected in commitments to work standards, ethical codes, and sustainability vision. M1 explains that Rappo was founded as a social enterprise; therefore, prevention costs are understood as investments to ensure the company does not produce future shameful outcomes. Reflexively, this constructs a moral justification that prevention expenditures are not wasteful but a form of reputation preservation. Thus, Siri' adds a dignity dimension to Environmental Prevention Cost.

> "...Rappo has always had the vision that we are a social enterprise... So there are certain principles we need to apply... Prevention costs are actually an investment, so that they don't end up being an embarrassment for us in the future." (M1, Management/CEO & Founder, April 2026).

e. Pacce as Ecological Responsibility

If Siri' emphasizes dignity, Pacce strengthens the dimension of empathy in environmental prevention practices. Pacce is evident when workers and management avoid shifting negative impacts of production to others. P1 explains that negligence in maintaining the work environment can harm coworkers and others. A1 also emphasizes that unsuitable materials must be cleaned so they do not become environmental burdens again. These statements show that prevention is driven by awareness not to let others bear the consequences of organizational negligence.

> "...It's more about feeling bad, really... it shows that we're not being responsible and could also harm others... So, being responsible means taking care of our environment so that our colleagues don't suffer negative consequences because we haven't maintained our work environment." (P1, Production Staff, April 2026).

In this study, Pacce can be interpreted as ecological empathy. Pelras (1996, pp. 224–225) explains Pacce (or Pesse) as the ability to deeply feel others' suffering. In an environmental context, this empathy extends beyond visible humans to communities and ecosystems potentially affected by residues. Environmental prevention thus becomes a way to avoid transferring ecological burdens to surrounding society.

This finding extends the concept of accountability. Legitimacy refers to the perception that organizational actions are appropriate within prevailing social norms. However, within Pacce, accountability is not only about external legitimacy but also an inner moral awareness not to harm others. Therefore, Environmental Prevention Cost can be understood as conscience-based accountability: expenditures made to ensure economic activity does not break the empathetic relationship between company, society, and environment.

f. Integrated Interpretation

Overall findings show that Environmental Prevention Cost at PT. Karya Rappo Indonesia lies at the intersection of economic rationality and cultural reasoning. Economically, prevention costs ensure process continuity, reduce machine damage risks, minimize material waste, and prevent new residue formation. Culturally, these costs are interpreted as a means of preserving dignity, honor, care, and organizational relationships with society and the environment. Thus, Environmental Prevention Cost functions not only as an efficiency instrument but also as a dignity practice.

> "...we don't want to view the surrounding community merely as bystanders, but as part of the ecosystem. So if there are costs associated with training, the procurement of personal protective equipment, and waste management, those aren't 'wasted expenses.' That's how we ensure the company's economy grows while also addressing our concern

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for the environment and the community. So, the business logic works, and the humanitarian logic is also upheld." (M1, Management/CEO & Founder, April 2026).

An ethnomethodological analysis reveals that these meanings do not arise solely from normative statements, but are constructed through everyday actions. Expressions such as "cleaned safely," "disrupting workflow," "necessary costs," and "don't make a fool of yourself" demonstrate how organizational actors shape the meanings of systematic prevention. Such language is not neutral; it reflects work experiences, internal standards, and living cultural values.

Within this framework, environmental accounting can be understood as a practice beyond cost recording. Accounting becomes a means of linking production processes, ecological responsibility, and local values. In this study, Environmental Prevention Cost is understood through the types of prevention-related expenditures and activities identified from participants' accounts and observed practices. Because the study did not obtain or disclose detailed monetary accounting records, the findings do not establish the actual monetary amount, percentage allocation, or formal accounting treatment of these costs. The empirical contribution therefore concerns how prevention-related costs are recognized, justified, and enacted within organizational practice rather than their numerical measurement. It also contains traces of responsibility, empathy, and dignity. This study refers to this as dignified accounting, an accounting system that evaluates not only economic sacrifice but also the moral and cultural reasoning behind it.

The contribution of this finding to environmental accounting literature lies in shifting focus from "how much the prevention cost is" to "what forms of prevention cost are recognized, how these costs are understood and enacted." By incorporating Siri' na Pacce as a cultural lens, this study shows that environmental cost decisions are shaped not only by managerial calculations but also by shame, pride, empathy, and social responsibility embedded in organizational daily life. Methodologically, it also demonstrates that ethnomethodology can be used to read accounting practices as social order produced through language, action, and context.

Table 2. Synthesis of Environmental Prevention Cost Meaning in the Siri' na Pacce Lens

Meaning Focus	Actor Perspective	Empirical Practices/Findings	Ethnomethodological Lens	Meaning of Environmental Prevention Cost	Reading of Siri' na Pacce
Prevention as production process safeguarding	Management and workers	Material curation, raw material cleaning, sterilization, and residue control before production	Indexicality: "safely cleaned" refers to specific recycling standards	Cost ensuring process continuity, material quality, and preventing new environmental problems	Siri' as reputation protection; Pacce as awareness to avoid environmental burden
Prevention cost as sustainability investment	Management	Machine maintenance, equipment upkeep, material quality control, and upfront expenditures	Reflexivity: costs justified as reasonable and necessary	Long-term investment ensuring operations, reputation, and ecological responsibility	Siri' as organizational dignity; Pacce as care for societal/environmental impact

Prevention cost as accounting responsibility	Finance/Accounting	Labor costs, asset maintenance, budgeting, and administrative prevention costs	Contextuality: costs linked to material flow control	Economic sacrifice supporting production and preventing environmental impact	Siri' as professional accountability; Pacce as preventing environmental leakage
Prevention as daily work discipline	Production workers	Sorting, tool arrangement, workplace cleanliness, tool return, residue control	Indexicality & reflexivity: "mengganggu flow kerja" shows maintained order	Prevention embedded in daily operations though not formally labeled	Siri' as shame for negligence; Pacce as concern for coworkers/environment
Dignified accounting practice	Management and workers	Integration of policy, cost allocation, daily practices, and cultural values	Contextuality: meanings shaped in a social enterprise context	Intersection of economic rationality, environmental accounting, and socio-ecological responsibility	Siri' na Pacce defines prevention cost as dignity, empathy, and sustainability practice

4.2 Research Discussion

4.2.1 Interpretation of Key Findings

a. Prevention Cost as a Situated Organizational Practice

The findings demonstrate that Environmental Prevention Cost in PT. Karya Rappo Indonesia is not merely a category of environmental expenditure, but a multi-layered social production of prevention meaning that is continuously constructed through interaction between material practices, organizational reasoning, and cultural ethics.

A critical analytical insight is that prevention cost does not exist *before* practice; instead, it is produced through practice itself. The phrase "cleaned properly," for instance, is not a neutral technical instruction, but an indexical device that activates shared understanding among workers, management, and accounting actors. Its meaning cannot be detached from the recycling context, indicating that accounting language here is fundamentally context-dependent and socially embedded.

More importantly, the findings show that actors do not merely "use" accounting concepts—they actively translate operational actions into moral and economic narratives. When M1 frames maintenance cost as "protecting dignity," or when A1 describes cleaning as "preventing waste from returning to the environment," they are engaging in reflexive justification practices. This reflexivity indicates that Environmental Prevention Cost is continuously legitimized through narrative construction rather than fixed accounting classification.

At the operational level, prevention is not perceived as "cost" at all, but as organizational order maintenance. Workers interpret prevention through workflow stability, not financial categories. This reveals a fundamental epistemic gap between formal accounting logic and lived operational logic. Accounting labels lag behind practice; meaning is first produced in action, then retrospectively rationalized as "cost."

This interpretation complements Environmental Management Accounting (EMA) literature by showing that environmental prevention costs are not necessarily experienced by organizational members as formally separated accounting categories. Instead, they become recognizable as costs

through the organizational interpretation of activities that consume labor, time, materials, equipment, and other resources for preventive purposes. In this sense, prevention cost is a situated organizational practice: its meaning depends on where, how, and by whom prevention activities are performed and interpreted.

Thus, Environmental Prevention Cost functions as a boundary object between three worlds:

a. managerial rationality (efficiency and investment logic),
b. accounting rationality (cost classification),
c. and operational reality (workflow discipline and material handling).

The boundary-object character of Environmental Prevention Cost explains why the same activity can simultaneously be understood as an operational requirement by workers, an organizational investment by management, and a cost-related activity by finance and accounting personnel. The finding therefore extends the conventional understanding of environmental cost by demonstrating that its organizational meaning is produced at the intersection of these different practical perspectives.

b. Siri' and the Moralization of Prevention Cost

Environmental prevention cost is commonly conceptualized as an economically rational strategy aimed at minimizing future failure costs. However, this study reveals a critical deviation: rationality is not purely economic but culturally mediated.

While Hansen et al. assume that prevention cost decisions are driven by cost-benefit logic, the findings here demonstrate that decisions are also shaped by:

a. shame avoidance (Siri'),
b. moral discomfort (Pacce),
c. and reputational dignity preservation.

This means that economic rationality is not eliminated but re-embedded within cultural rationality.

Siri' is particularly important in explaining this re-embedding because it gives prevention cost a moral meaning beyond economic expenditure. The findings indicate that environmental negligence can be interpreted as a threat to organizational dignity and reputation. Consequently, expenditures and efforts directed toward cleanliness, material quality, equipment maintenance, and environmental protection can be understood as practices for preserving organizational honor.

This moralization does not mean that Siri' replaces economic reasoning. Rather, Siri' provides an additional evaluative frame through which economically relevant decisions become morally meaningful. Prevention expenditure is therefore understood not only in terms of whether it is financially justified, but also whether failing to undertake the preventive action would conflict with the organization's sense of dignity and responsibility.

Whereas prevention is conventionally associated with avoiding future failure costs, the present study indicates that prevention can also be justified through culturally embedded concerns about organizational dignity. Siri' therefore functions as a cultural mechanism through which prevention becomes morally obligatory within everyday organizational practice.

c. Pacce and Socio-Ecological Accountability

Material flow accounting as a structured system of tracking environmental impact. However, this study shows that material flow is not only a system of measurement but also a socially disciplined practice embedded in bodily routines. Workers do not "apply" material flow accounting—they perform it through habit, discipline, and shared spatial order. This finding complements recent evidence showing that Environmental Management Accounting and circular economy practices jointly contribute to organizational performance improvement (Fahru Komarudin et al., 2024).

Pacce provides a complementary explanation for why these practices are maintained. While Siri' emphasizes dignity and the avoidance of shame, Pacce emphasizes concern for the consequences of organizational actions for others. In the context of this study, environmental prevention is therefore connected to a form of socio-ecological accountability in which actors seek to prevent negative consequences from being transferred to coworkers, surrounding communities, and the environment.

The significance of Pacce lies in extending accountability beyond formal organizational responsibility. Legitimacy as a perception that organizational actions are appropriate within social norms. Within the Pacce perspective identified in this study, however, responsibility is also internally experienced as an obligation to avoid causing harm. Environmental accountability consequently operates through both external expectations and internalized concern for others.

This finding suggests that environmental prevention practices may be sustained through relational and ethical considerations that are not fully captured by conventional cost-benefit calculations. Pacce thus helps explain why material sorting, residue control, workplace cleanliness, and responsible waste handling can acquire significance as collective responsibilities rather than merely as operational requirements.

d. Ethnomethodological Contribution

The ethnomethodological perspective provides the analytical mechanism for explaining how these meanings are produced in everyday organizational interactions. Rather than treating Environmental Prevention Cost, Siri', and Pacce as predetermined categories, ethnomethodology directs attention to the members' methods through which organizational actors make prevention practices intelligible, reasonable, and accountable.

First, indexicality explains why expressions such as "cleaned properly" and "workflow disturbed" cannot be interpreted independently of their workplace context. Their meanings are generated through the specific activities, material conditions, and shared understandings of the actors involved.

Second, reflexivity explains how participants' accounts simultaneously describe and sustain organizational practices. When actors explain why materials must be cleaned, why equipment must be maintained, or why workplace order must be preserved, their explanations do not merely report existing practices. They also provide accounts that make those practices appear reasonable and necessary, thereby contributing to their continued reproduction.

Third, contextuality demonstrates that the meaning of prevention is inseparable from the organizational environment in which it occurs. The same cleaning, sorting, or maintenance activity may have different meanings in different organizational settings. At PT. Karya Rappo Indonesia, these activities are situated within a plastic recycling operation and interpreted through environmental responsibility and Bugis-Makassar cultural values.

Fourth, members' methods show how organizational actors practically accomplish environmental accountability without necessarily relying on formal accounting terminology. Workers organize materials, maintain cleanliness, control residues, and preserve workflow through shared practical knowledge. Management and finance/accounting actors, meanwhile, justify resource use through organizational and cost-related reasoning. These practical methods demonstrate that accounting-related meanings can be embedded in ordinary organizational activities before they are formally represented as accounting information.

Accordingly, ethnomethodology contributes not by providing another measurement technique, but by explaining the social processes through which environmental accounting meanings become recognizable and

actionable. This perspective helps bridge the gap between formal accounting categories and the lived practices through which environmental prevention is actually accomplished.

e. Theoretical Model: Culturally Embedded Environmental Accountability

The integrated findings support the development of the concept of "Culturally Embedded Environmental Accountability." This concept emerges from the interaction of three empirical dimensions identified in the study: organizational prevention practices, cultural moral reasoning, and ethnomethodological meaning construction. It does not treat Siri' and Pacce as external cultural additions to environmental accounting, but as values that become embedded in how organizational actors interpret, justify, and perform environmental prevention.

The proposed theoretical relationship can be expressed as follows:

Everyday Prevention Practices → Meaning Construction through Members' Methods → Siri' and Pacce as Cultural Moral Frames → Culturally Embedded Environmental Accountability → Environmental Prevention as Responsible Organizational Practice

The first element, everyday prevention practices, consists of activities such as material sorting, cleaning, equipment maintenance, workplace organization, and residue control. The second element concerns the members' methods through which these activities are made meaningful through indexicality, reflexivity, contextuality, and practical reasoning. The third element represents the cultural interpretation of these practices through Siri' and Pacce. Siri' provides a dignity-based moral frame, while Pacce provides an empathy- and responsibility-based frame.

Through these processes, Environmental Prevention Cost is understood not merely as an economic sacrifice but as part of a broader accountability relationship connecting organizational performance, environmental responsibility, workers, and the surrounding community. The theoretical contribution therefore lies in explaining how cultural values can become embedded within the practical construction of environmental accountability.

This extends legitimacy theory by shifting attention from legitimacy as primarily an external evaluation mechanism toward the internalized processes through which organizational actors themselves make environmentally responsible actions reasonable, appropriate, and morally necessary. The proposed concept should therefore be understood as an interpretive theoretical contribution rather than a universally generalizable causal model.

f. Implications and Boundary Conditions

From a practical standpoint, the findings imply that environmental accounting systems will fail if they are designed solely as technical instruments without considering organizational moral infrastructure.

In PT. Karya Rappo Indonesia, prevention works effectively not because of formal accounting systems, but because:

1) workers feel shame if they neglect cleanliness (Siri'),
2) workers feel discomfort if others are harmed (Pacce),
3) and management frames cost as dignity preservation.

Therefore, policy implications include:

1) Environmental accounting systems should integrate behavioral and cultural drivers, not only cost structures. Such integration is important because environmental performance improvements are often achieved when environmental accounting practices are aligned with organizational behavior and sustainability objectives (Hasan et al., 2024).
2) Training programs should strengthen moral internalization, not only procedural compliance.
3) Sustainability policies should recognize workers as ethical agents, not only operational units.

This suggests a shift from compliance-

based environmental management to value-based environmental governance.

The practical implication, however, should be considered within the organizational and cultural conditions of the study. The findings are particularly relevant to organizations where environmental prevention depends substantially on everyday worker practices, where management recognizes environmental responsibility as part of organizational identity, and where local cultural values are actively present in organizational interactions.

The cultural boundary is also important. Siri' and Pacce are interpreted here within the specific Bugis-Makassar organizational context of PT. Karya Rappo Indonesia. Their meanings should therefore not be assumed to operate identically in organizations located in different cultural environments or even among organizations within the same broader cultural region. Their organizational significance depends on how members interpret and enact these values in practice.

The contextual boundary arises from the study's focus on a single plastic recycling organization. Differences in organizational size, industry, ownership structure, environmental risk, accounting systems, regulatory environment, and organizational culture may produce different forms of environmental prevention and accountability. Accordingly, the findings are analytically transferable to contexts with comparable characteristics rather than statistically generalizable to all organizations.

There is also a methodological boundary. The ethnomethodological approach prioritizes the practical construction of meaning over statistical measurement and causal estimation. Therefore, the study explains how environmental prevention and accountability are constructed and justified, but it does not establish the monetary magnitude, statistical effects, or causal relationships associated with Environmental Prevention Cost. This boundary is consistent with the interpretive purpose of the study and should be considered when applying the findings to settings that require quantitative cost evaluation.

Taken together, the implications of this study lie not in prescribing a universal environmental accounting model, but in demonstrating that environmental accountability can be strengthened when formal organizational practices are connected with the moral and cultural reasoning through which members understand their everyday responsibilities.

4.2.2 Comparison with Previous Studies

conceptualize environmental prevention cost as an economically rational strategy aimed at minimizing future failure costs. However, this study reveals a critical deviation: rationality is not purely economic but culturally mediated.

While Hansen et al. assume that prevention cost decisions are driven by cost-benefit logic, the findings here demonstrate that decisions are also shaped by:

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Material flow accounting as a structured system of tracking environmental impact. However, this study shows that material flow is not only a system of measurement but also a socially disciplined practice embedded in bodily routines. Workers do not "apply" material flow accounting—they perform it through habit, discipline, and shared spatial order. This finding complements recent evidence showing that Environmental Management Accounting and circular economy practices jointly contribute to organizational performance improvement (Fahru Komarudin et al., 2024).

Thus, the key divergence from prior literature is:

a. Prior studies → prevention cost as system-driven efficiency tool
b. This study → prevention cost as culture-

driven practice of responsibility

This shift is significant because it challenges the assumption that environmental accounting is primarily a technical optimization system. Instead, it reveals that technical systems are sustained by moral and cultural infrastructures.

4.2.3 Theoretical Contributions

This study contributes to Environmental Management Accounting theory through a three-layer theoretical extension:

a. From Cost Classification to Cost Construction

Traditional accounting theory treats prevention cost as a predefined category. This study shows that cost is not discovered but constructed through interaction. The classification emerges only after actors interpret, justify, and stabilize meanings of operational actions. Thus, Environmental Prevention Cost becomes a social accomplishment, not a static object. This interpretation is consistent with recent circular accounting perspectives emphasizing that accounting practices are increasingly connected to resource circulation and material stewardship rather than merely financial measurement (Ramautar & España, 2022).

b. Ethnomethodology as a Lens of Accounting Production

The application of ethnomethodology reveals that accounting is sustained through:

1) Indexical expressions ("cleaned properly," "workflow disturbed")
2) Reflexive reasoning (justifying costs as necessary and dignified)
3) Contextual accountability (actions only meaningful within shared practice systems)

This challenges conventional accounting theory by demonstrating that accounting is not only numerical representation but also language-based social order production.

c. Cultural Reconstitution of Environmental Accounting

The incorporation of Siri' and Pacce introduces a theoretical breakthrough: environmental accounting is not culturally neutral. This finding extends contemporary EMA literature that primarily explains environmental accounting through institutional and sustainability-performance perspectives by demonstrating the role of local cultural values in shaping environmental accountability (Kadir et al., 2025).

1) Siri' transforms accounting into dignity governance
2) Pacce transforms accounting into empathy governance

Together, they form what can be theorized as "culturally embedded environmental accountability", where accounting becomes a mechanism for maintaining social honor and ecological empathy, not merely financial control.

This extends legitimacy theory by shifting legitimacy from an external evaluation mechanism to an internalized moral obligation system.

4.2.4 Practical and Policy Implications

From a practical standpoint, the findings imply that environmental accounting systems will fail if they are designed solely as technical instruments without considering organizational moral infrastructure.

In PT. Karya Rappo Indonesia, prevention works effectively not because of formal accounting systems, but because:

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Therefore, policy implications include:

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behavior and sustainability objectives (Hasan et al., 2024).

2) Training programs should strengthen moral internalization, not only procedural compliance.
3) Sustainability policies should recognize workers as ethical agents, not only operational units.

This suggests a shift from compliance-based environmental management to value-based environmental governance.

4.2.5 Integration with the Research Gap

The dominant gap in Environmental Management Accounting literature lies in its inability to explain how environmental costs are socially produced in everyday organizational life.

This study fills that gap by demonstrating that:

1) Prevention cost is not simply recorded → it is enacted
2) It is not only calculated → it is justified
3) It is not only economic → it is moral and cultural

More specifically, prior research neglects the question:

"How do organizations make environmental prevention cost *meaningful* before it becomes measurable?"

This study answers that question by showing that meaning is produced through:

1) workplace discipline,
2) linguistic practices,
3) and cultural ethics (Siri' na Pacce).

Thus, the originality lies not only in contextual application but in redefining the epistemology of environmental accounting itself.

4.2.6 Acknowledgement of Study Limitations

A critical limitation of this study lies in its deep contextual embeddedness. While this is a strength for interpretive richness, it also limits abstraction across different institutional environments.

Additionally, the strong presence of cultural constructs (Siri' and Pacce) raises an important analytical caution: their influence may not operate uniformly even within similar cultural regions, as they are dynamically interpreted in practice rather than fixed cultural variables.

Finally, the ethnomethodological lens prioritizes meaning construction over structural quantification, which means that macro-level economic impacts of prevention cost remain outside the analytical scope. As a result, the study privileges how meaning is produced over how cost magnitude is distributed, creating an intentional but important analytical boundary.

5. Conclusion

5.1 Summary of Key Findings

This study demonstrates that Environmental Prevention Cost at PT. Karya Rappo Indonesia is not merely an accounting expense, but a multidimensional organizational practice that integrates operational discipline, economic rationality, and cultural meaning.

Empirically, the findings show that:

1) Environmental Prevention Cost is primarily enacted in upstream operational activities, including material sorting, cleaning, drying, and preparation before production.
2) From a management perspective, prevention cost is constructed as a sustainability investment that safeguards operational continuity, machine reliability, organizational reputation, and environmental responsibility.
3) From a worker perspective, prevention cost is embodied in daily practical actions, such as maintaining cleanliness, organizing materials, controlling residues, and ensuring workflow stability.
4) The implementation of Environmental Prevention Cost is reinforced by Siri' na Pacce, where Siri' functions as a mechanism of dignity and shame that prevents careless behavior, while Pacce operates as ecological empathy that discourages harm to others and the environment.

Overall, the study confirms that Environmental Prevention Cost operates as a

shared system of practice between economic logic, operational discipline, and cultural values.

5.2 Theoretical Contributions

This study contributes to Environmental Management Accounting theory in several significant ways. First, it reconceptualizes Environmental Prevention Cost not as a fixed technical category, but as a socially constructed accounting practice that emerges through everyday organizational interactions. Cost is shown to be produced through action, language, and justification rather than merely recorded in accounting systems. Second, by applying an ethnomethodological perspective, the study demonstrates that accounting meaning is built through indexical expressions and reflexive reasoning, such as "cleaned properly," "workflow disturbance," and "necessary cost." These expressions reveal how actors continuously construct and stabilize the meaning of environmental prevention in practice. Third, the study extends environmental accounting theory by integrating Siri' na Pacce as a cultural framework, positioning environmental prevention cost within a moral economy of dignity and empathy. This challenges dominant Western-centric assumptions in Environmental Management Accounting by showing that environmental cost logic is also shaped by local cultural ethics.

Thus, the study advances theoretical understanding by shifting Environmental Prevention Cost from a financial classification logic to a culturally embedded accountability system.

5.3 Practical and Policy Implications

The findings provide several practical implications for organizations, particularly those engaged in waste management and recycling industries. First, companies should recognize that Environmental Prevention Cost is not only a financial burden but a strategic investment in sustainability, which helps prevent operational failure, environmental damage, and reputational risk. Such preventive investments are consistent with circular economy capabilities that support environmental performance and long-term sustainability outcomes (Abid et al., 2024; Acquah et al., 2024; Nandini et al., 2022). Second, organizations should strengthen daily operational discipline, as prevention is largely realized through routine practices such as sorting, cleaning, and controlling material flow. Workers should be viewed as active agents of environmental accounting rather than passive implementers of procedures. Third, management should integrate cultural and ethical values into environmental governance systems. In the context of this study, Siri' na Pacce plays a crucial role in sustaining environmentally responsible behavior. Similar culturally grounded values may be leveraged in other contexts to strengthen environmental commitment.

From a policy perspective, environmental accounting frameworks should move beyond purely technical and financial approaches by incorporating behavioral, social, and cultural dimensions to improve implementation effectiveness in practice.

5.4 Limitations of the Study

This study has several limitations that should be considered in interpreting its findings. First, the research is based on a single-case study, namely PT. Karya Rappo Indonesia. Therefore, the findings reflect a specific organizational and cultural context and cannot be statistically generalized to all organizations. Second, the number of informants is limited to key organizational actors, which may restrict the diversity of perspectives, particularly from external stakeholders such as regulators or customers. Third, the strong reliance on ethnomethodological interpretation means that the study prioritizes meaning construction over quantitative measurement of economic impact, so the financial magnitude of Environmental Prevention Cost is not analytically elaborated. Despite these

limitations, the study provides deep contextual insights into how environmental prevention cost is socially and culturally constructed in practice.

5.5 Directions for Future Research

Future research can extend this study in several directions. First, comparative studies across multiple recycling or environmentally focused organizations are recommended to examine whether the construction of Environmental Prevention Cost is consistent across different institutional settings. Second, future research may explore cross-cultural comparisons of environmental accounting practices, particularly by examining how different local wisdom systems influence sustainability-related cost interpretation. Third, researchers may develop mixed-method or quantitative models of Environmental Prevention Cost to complement the interpretive findings of this study, particularly to assess its financial and environmental performance impacts.

Finally, future studies may expand the theoretical framework by integrating additional perspectives such as institutional theory, actor-network theory, or sustainability governance frameworks to further enrich understanding of environmental accounting as a socio-cultural practice.

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