

GREEN ACCOUNTING PRACTICES AND ENVIRONMENTAL AWARENESS IN SUPPORTING HOSPITAL SUSTAINABILITY: A QUALITATIVE STUDY AT RSK X IN EAST JAVA

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Abstract

Hospital operations provide healthcare services while generating environmental impacts through medical waste, hazardous and toxic waste, wastewater, and the consumption of energy, water, and other resources. These impacts require hospitals to adopt environmental management practices that extend beyond regulatory compliance and strengthen environmental awareness. This study aims to analyze the role of green accounting in fostering environmental awareness and supporting organizational sustainability at a specialized hospital (RSK X) in East Java, Indonesia. The study employed a qualitative approach within an interpretive paradigm using a case study design. Data were collected through in-depth interviews, observations, and documentation involving informants engaged in environmental management and hospital operations. Data were analyzed through data reduction, data display, conclusion drawing, and thematic analysis using NVivo 14 Pro. The findings indicate that green accounting practices at RSK X are reflected in medical and hazardous waste management, wastewater treatment plant operations, environmental monitoring, resource efficiency, environmental reporting, and environmental cost recording. These practices function not only as mechanisms for administrative compliance and cost control but also as instruments for fostering employees' environmental awareness through socialization, monitoring, habituation, and behavioral change. Green accounting implementation is supported by management commitment, government regulations, accreditation requirements, and organizational culture. However, constraints remain, particularly the absence of a dedicated green accounting report, limited integration of environmental information into the hospital information system, and varying employee understanding of green accounting. The study concludes that green accounting serves managerial and behavioral functions by improving environmental accountability, strengthening environmental awareness, and contributing to hospital sustainability.

Keywords: *Green Accounting, Environmental Awareness, Environmental Management Accounting, Sustainability, Hospital*

1. INTRODUCTION

The healthcare sector currently faces a crucial dilemma: its primary function of restoring public health is accompanied by increasing negative environmental externalities, particularly in the form of hazardous and toxic materials (B3) waste. As resource-intensive operational entities, hospitals generate not only infectious medical waste but also chemical

waste and hazardous materials that may threaten ecosystems if not managed sustainably. Healthcare activities therefore generate not only social benefits through healthcare services but also ecological consequences that require systematic and accountable management.

Rumah Sakit Khusus X (RSK X) in East Java is one healthcare organization facing this condition. The growth of medical service activities at RSK X has had direct implications for a significant increase in B3 waste volume throughout the 2023–2025 period, as presented in Table 1.

Table 1. B3 Waste Volume at RSK X, 2023–2025

Year	Total Waste (kg)	Daily Average (kg)	Trend
2023	4,608	12.60	-
2024	4,995	13.75	Increased
2025	5,232	14.46	Increased

Source: Data Processed, 2026

The increase in B3 waste burden indicates that environmental management has become an increasingly important part of hospital operations. Although this phenomenon requires accountable environmental governance, environmental management practices at RSK X have so far remained largely focused on fulfilling administrative regulatory requirements (compliance-driven). The implementation of Environmental Management Accounting (EMA) and green accounting has not yet been formally internalized into the hospital's financial accounting cost-recording system. Consequently, the financial impacts of environmental protection activities and the operational efficiency of waste management have not yet been measured comprehensively and systematically.

This condition indicates a gap between environmental management practices and the formalization of the environmental accounting system. At the operational level, RSK X has carried out various environmental management activities, including waste segregation, waste storage and transportation, B3 waste management, operation of the Wastewater Treatment Plant (IPAL), environmental monitoring, and efforts to improve resource-use efficiency. These activities require resources and generate environmental costs. However, when such costs remain integrated into general operating costs, information on total environmental costs cannot be fully identified as specific information for management.

In this context, Environmental Management Accounting (EMA) provides a relevant perspective for understanding the relationship between environmental activities and accounting information. EMA integrates monetary and physical information related to environmental activities into organizational decision-making processes. Monetary information provides an overview of the costs incurred for environmental management, while physical information describes the use of energy, water, raw materials, and the volume of waste generated. Thus, green accounting is not limited to recording environmental costs but can also serve as a management instrument for identifying environmental impacts, improving resource-use efficiency, and supporting organizational decision-making.

Environmental management issues in hospitals also cannot be separated from employee awareness and behavior. Compliance with environmental procedures does not necessarily indicate that environmental values have been internalized by employees. Environmental awareness can develop through experience, organizational rules, supervision,

socialization, habituation, and repeated practices. Under these conditions, green accounting can be viewed not only as a recording and reporting instrument but also as an awareness tool that connects information about environmental activities and costs with employees' awareness of the ecological impacts of their operational activities.

In the literature, research on green accounting in the healthcare sector has generally discussed waste management, environmental costs, environmental performance, environmental reporting, and regulatory compliance. Previous studies have also largely been conducted in large-scale manufacturing entities or general hospitals that have formal sustainability reporting systems. Meanwhile, there remains limited research on how specialized hospitals utilize green accounting instruments not only as financial reporting tools but also as awareness tools for building ecological awareness among operational employees.

This limitation indicates an empirical and theoretical research gap. An interesting phenomenon is that ecological concern within organizations can grow through institutional norms, rules, and workplace cultural values even when formal environmental accounting systems have not yet been fully established. In other words, environmental practices may develop first at the level of organizational behavior, while conceptual understanding and the formalization of the green accounting system remain in development. This condition creates an opportunity to view green accounting from a broader perspective, namely not only as a mechanism for reporting environmental costs but also as a mechanism that can encourage the formation of environmental awareness and behavior.

Institutional Theory can be used to explain how government regulations, accreditation requirements, organizational policies, and external pressures encourage hospitals to implement environmental management practices. Such institutional pressures may initially encourage employees to comply with organizational procedures and rules. However, through repeated implementation, supervision, socialization, and habituation, these practices can develop into values embedded in organizational culture. Thus, environmental awareness can be understood as a process formed through the interaction between institutional pressures and internal organizational practices.

Furthermore, the Triple Bottom Line concept places organizational sustainability on a balance among economic, social, and environmental dimensions. In the hospital context, the economic dimension is reflected in cost control and resource-use efficiency, the social dimension in employee and stakeholder involvement, and the environmental dimension in waste management, pollution control, and environmental protection. The implementation of green accounting can serve as one mechanism connecting these three dimensions by integrating environmental considerations into organizational management and decision-making.

Based on this gap, this study aims to elaborate how the integration of green accounting and Environmental Management Accounting (EMA) functions as an awareness tool for increasing employees' ecological awareness at RSK X. The study also identifies the green accounting practices implemented, the factors that support and hinder their implementation, and their implications for environmental accountability and hospital sustainability. Through the perspective of Institutional Theory and the Triple Bottom Line concept, this study is

expected to contribute theoretically by documenting the dynamics of green accounting implementation in the healthcare sector, particularly in specialized hospitals, while also providing practical implications for hospital management in formulating accountable and sustainable environmental governance strategies.

2. RESEARCH METHOD

This study uses a qualitative approach with an interpretive paradigm and a case study design. A qualitative approach was selected because the study seeks to understand experiences, understandings, practices, and the process of developing environmental awareness within the context of a hospital organization.

The study was conducted at Rumah Sakit Khusus (RSK X) in East Java. Informants were selected using purposive sampling, namely the selection of informants based on their involvement in and knowledge of environmental management activities and hospital operations.

The research informants consisted of representatives from management, finance and accounting, K3L, general administration and human resources, medical support units, and operational staff. The selection of these informants was intended to obtain diverse perspectives on the implementation of green accounting at RSK X.

The research data consisted of primary and secondary data. Primary data were obtained through in-depth interviews and observations, while secondary data were obtained through organizational documentation. The documents included waste-management SOPs, environmental-management documents, B3 waste management reports, environmental cost documents, energy and water consumption data, and other related documents.

Data were collected through in-depth interviews, observations, and documentation. Interviews were used to obtain information about informants' understanding and experiences related to green accounting, environmental management, environmental awareness, and sustainability. Observations were conducted to examine environmental practices occurring in hospital operations. Documentation was used to strengthen the information obtained from interviews and observations.

Data analysis was conducted through data reduction, data display, and conclusion drawing. Thematic analysis was then performed with the assistance of NVivo 14 Pro. The analysis process included open coding, axial coding, and selective coding to identify themes and relationships among themes.

The research coding framework included the themes of green accounting, environmental awareness, sustainability culture, stakeholder commitment, institutional pressure, internalization process, supporting factors, and inhibiting factors. Various NVivo features were used to support the analysis, including Coding Stripes, Hierarchy Chart, Cluster Analysis, Concept Map, Mind Map, Project Map, Word Frequency, Matrix Coding, Relationship Map, Tree Map, and Framework Matrix.

Data validity was established through source and technique triangulation, member checking, and an audit trail. Triangulation was conducted by comparing information from different informants and different data-collection techniques to obtain a more comprehensive understanding of the research phenomenon.

3. RESULTS AND DISCUSSION

Understanding and Implementation of Green Accounting at RSK X

The findings show that green accounting practices at RSK X have been incorporated into hospital operational activities. These practices are reflected in medical and B3 waste management, operation of the IPAL, environmental monitoring, efficient resource use, and the recording of costs related to environmental activities. Nevertheless, environmental costs have not yet been presented in a separate environmental accounting report and remain integrated into hospital operating costs.

The understanding of green accounting is reflected in the perspective of the Finance & Accounting Unit, which views environmental aspects as needing to be considered alongside financial aspects. The informant stated:

“In our view, the concept of green accounting or environmental accounting is an accounting approach that does not only focus on recording a company’s financial activities but also takes into account the impact of the company’s activities on the environment.” (Finance & Accounting Unit Interview Transcript)

This statement indicates that green accounting has been understood as an approach that connects financial information with environmental impacts. This understanding is then manifested in routine environmental management practices. This was reinforced by the K3L Unit informant, who explained:

“Every year, we budget for programs related to the environment, starting with environmental responsibilities such as its management, and then we manage the outputs of environmental impacts so that they can also be minimized through activities aimed at managing those environmental impacts properly.” (K3L Unit Interview Transcript)

These two statements show that green accounting practices at RSK X have two dimensions, namely the information/accounting dimension and the environmental management dimension. This finding is consistent with the Environmental Management Accounting (EMA) perspective, which positions monetary and physical environmental information as part of organizational management.

However, the implementation is not yet fully formalized. Environmental costs remain combined with operating costs, so information on total environmental costs cannot yet be presented separately. Thus, there is a gap between established environmental management practices and the formalization of the green accounting reporting system.

The coding process using NVivo 14 Pro shows that green accounting implementation at RSK X forms several main themes, namely environmental cost management,

environmental management, motivation and awareness, and implementation challenges. The structure of these themes is visualized through the Hierarchy Chart in Figure 1.

Figure 1. Hierarchy Chart



Source: Data Processed, 2026

Based on the Hierarchy Chart, green accounting management at RSK X is not limited to environmental cost aspects but also includes environmental management practices, employee motivation and awareness, and various challenges faced by the organization. In terms of environmental cost management, the coding results indicate the management, measurement, and reporting of environmental costs. Meanwhile, environmental management includes waste management, energy efficiency, water use, and environmentally friendly procurement. These findings indicate that green accounting practices at RSK X are interconnected across accounting aspects, environmental activities, and organizational behavior.

Green Accounting as a Stimulus for Environmental Awareness

The findings show that green accounting is not only related to recording environmental costs but also to the development of employees' environmental awareness. Such awareness develops through socialization, monitoring, organizational rules, and habituation in work activities. The behaviors identified include waste segregation, reducing plastic use, using tumblers, conserving electricity and water, and applying the principles of reduce, reuse, and recycle.

A Top Management informant provided a strong illustration of this process:

"Yes, in my opinion, it can increase that awareness. However, the influence may differ; at the management level, the impact is felt directly because they manage the data. For employees, the impact may not be felt directly through the figures in the reports. Therefore, we provide feedback to employees in the form of concrete

activities or through work-program evaluations.” (Top Management Interview Transcript)

This statement is important because it shows that accounting figures and information do not automatically change employee behavior. Such information needs to be translated into concrete activities, evaluation, and habituation.

The process of behavioral change can be seen in waste segregation practices. The informant explained:

“We educate employees to segregate waste (infectious and non-infectious) in every room.” (Top Management Interview Transcript)

This finding indicates that the awareness-tool function of green accounting operates through the mechanism of information → feedback → education → habituation → behavior. Thus, green accounting at RSK X does not stop at an administrative function but can play a role in the internalization of environmental values.

Supporting and Inhibiting Factors in Green Accounting Implementation

Green accounting implementation at RSK X is influenced by internal and external factors. The main supporting factors include management commitment, government regulations, accreditation requirements, and organizational culture. Meanwhile, inhibiting factors include the absence of a dedicated green accounting report and uneven employee understanding of the green accounting concept.

Management commitment is one of the most visible supporting factors. A Top Management informant explained:

“...every environmental program is always part of the hospital’s planning and receives support from management so that its implementation can run well.” (Top Management Interview Transcript)

This commitment is not merely a statement but is manifested through budgeting, internal policies, provision of facilities, and evaluation of environmental programs.

In addition to internal commitment, regulations are also an important driver. The informant explained:

“Environmental management is one of the main requirements for us to be able to operate.” (Top Management Interview Transcript)

This statement demonstrates the strong institutional pressure encouraging environmental practices at RSK X. This is consistent with Institutional Theory, which holds that organizations adjust their practices in response to regulatory and institutional demands.

Stakeholder Perspective on Environmental Accountability

Green accounting implementation at RSK X also demonstrates a form of organizational accountability to stakeholders. Such accountability is realized through waste management, environmental monitoring, reporting to relevant authorities, and efforts to

control the environmental impacts of healthcare activities. A Top Management informant emphasized:

“A hospital does not only provide services to patients; it must also be responsible for the surrounding environment because hospital activities inevitably generate waste and environmental impacts.” (Top Management Interview Transcript)

This statement indicates that the hospital’s responsibility is understood more broadly than merely providing healthcare services to patients. The hospital also has responsibilities toward the community, government, the environment, and other parties affected by organizational activities.

From the perspective of Stakeholder Theory, this condition indicates that environmental management is part of the organization’s effort to maintain stakeholder trust and legitimacy. Green accounting then becomes one mechanism that connects environmental activities with information and forms of organizational accountability.

Green Accounting in Supporting Hospital Sustainability

The sustainability of RSK X is not only related to the hospital’s ability to maintain its economic activities but also to its ability to protect the environment and fulfill its social responsibilities.

The findings show that efficient resource use, waste management, employee awareness, and sustainability culture are important components of hospital sustainability. These are reflected in various environmental management practices carried out continuously and incorporated into hospital operational activities.

From the Triple Bottom Line perspective, the implementation of green accounting connects three dimensions of sustainability. The profit dimension is reflected in cost control and resource-use efficiency. The people dimension is reflected in employee and stakeholder involvement in environmental practices. Meanwhile, the planet dimension is reflected in waste management, pollution control, and environmental protection.

This finding is reinforced by a K3L Unit informant who described the development of environmental management at RSK X:

“Compared with before, environmental management is now much more organized. Waste monitoring is more routine, reporting is also more complete, and employee awareness is beginning to increase.” (K3L Unit Interview Transcript)

This statement indicates that sustainability at RSK X is not realized only through the existence of environmental policies or procedures, but also through improvements in environmental management practices, increased monitoring and reporting, and employee awareness. Thus, the people and planet dimensions operate alongside the organization’s need to manage resources efficiently.

From the Triple Bottom Line perspective, this condition shows that green accounting can serve as a bridge between economic, social, and environmental interests. Information on costs and resource use helps the organization control and improve efficiency (profit), while employee involvement in environmental practices strengthens social responsibility (people). At the same time, waste management and control of environmental impacts support environmental protection (planet).

Thus, green accounting can support hospital sustainability by integrating economic and environmental information into organizational management.

Reflection and Expectation for Future Green Accounting Implementation

The findings show that green accounting implementation at RSK X has developed, particularly in waste management, environmental monitoring, reporting, and the development of employee awareness. However, there is still a need to strengthen the environmental cost recording and reporting system so that it becomes more integrated.

A K3L Unit informant described this development:

“Compared with before, environmental management is now much more organized. Waste monitoring is more routine, reporting is also more complete, and employee awareness is beginning to increase.” (K3L Unit Interview Transcript)

This statement indicates that green accounting implementation is a process of continuous improvement rather than a system that is immediately established in a perfect form. On the other hand, the study also found that financial reports do not have a strong leverage effect on environmental culture when considered on their own. Top Management stated:

“If we only rely on financial reports, the influence on the culture is still not significant.” (Top Management Interview Transcript)

4. CONCLUSION

This study shows that green accounting at RSK X has been implemented through various environmental management activities, including medical and B3 waste management, operation of the IPAL, environmental monitoring, environmental reporting, efficient resource use, and recording of environmental costs. Nevertheless, this implementation has not yet been fully realized in the form of a stand-alone environmental accounting report because environmental costs remain integrated into the hospital's operational costs.

Green accounting functions not only as an administrative and cost-control instrument but also as a stimulus for environmental awareness. Socialization, monitoring, habituation, and the implementation of environmental procedures have encouraged ecological behaviors among employees, such as waste segregation, energy and water conservation, reduction of plastic use, and application of the principles of reduce, reuse, and recycle.

The implementation of green accounting is supported by management commitment, government regulations, accreditation requirements, and organizational culture. Meanwhile, the identified obstacles include the absence of a dedicated green accounting report, limited information-system integration, and uneven employee understanding of the green accounting concept.

This study implies that the development of green accounting in hospitals should be directed not only toward improving the quality of environmental cost recording and reporting but also toward developing environmental awareness and behavior. Thus, green accounting can become an instrument that connects economic, social, and environmental aspects in supporting hospital sustainability.

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