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IMPLEMENTATION OF SUSTAINABILITY-ORIENTED ACCOUNTING AND INTEGRATED REPORTING IN STATE-OWNED ENTERPRISES IN THE CONSTRUCTION SECTOR

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Abstract

This research aims to analyze the implementation of Sustainability-Oriented Accounting (SOA) and Integrated Reporting (IR) in state-owned enterprises (SOEs) within the construction sector in Indonesia. A descriptive qualitative approach was used, utilizing literature study and content analysis of annual reports and sustainability reports of state-owned construction companies. The results indicate that while the implementation of SOA and IR in state-owned construction enterprises has progressed significantly, companies still face substantial challenges in integrating Environmental, Social, and Governance (ESG) aspects directly into core accounting systems. The primary challenges include a lack of standardized non-financial value metrics, limited quantitative data regarding environmental impacts, and high transition costs toward fully integrated reporting. Although IR adoption enhances corporate transparency and accountability, the presentation of future value creation requires further refinement. The implications highlight the necessity of stricter technical regulations from the Ministry of SOEs and the Financial Services Authority (OJK) to promote standardized and measurable sustainability disclosures.

Keywords: ***Sustainability-Oriented Accounting (SOA), Integrated Reporting (IR), State-Owned Enterprises (SOEs), Construction, ESG***.

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INTRODUCTION

Over the past two decades (2000s–2020s), sustainability issues have become a central focus in global business practice. Since the turn of the 21st century, there has been a paradigm shift from a shareholder-oriented to a stakeholder-oriented approach, wherein corporations are no longer focused solely on profit generation, but are also held accountable for the environmental and social impacts of their operations. This pressure intensified significantly following the adoption of the Paris Agreement, which mandates global contributions toward reducing carbon emissions.

Simultaneously, accounting—as the universal language of business—must dynamically adapt to evolving commercial needs and sustainable development agendas by delivering financial statements and business disclosures reflecting modern market realities. Sustainability reporting and green accounting have emerged as vital domains answering the call for sustainable development. A sustainability report details the economic, environmental, and social impacts caused by organizational activities (Financial Services Authority / OJK, 2017). Beyond traditional financial statements under Financial Accounting Standards

(SAK)—such as income statements, balance sheets, and cash flow statements—business entities are increasingly expected to report on social and environmental dimensions.

Globally, the construction sector represents one of the largest contributors to environmental impact. According to data from the United Nations Environment Programme (UNEP), the building and construction sector accounts for approximately 37% of global carbon emissions and over 30% of global energy consumption. This highlights that rapid infrastructure development over recent decades has often strained environmental ecosystems. In Indonesia, state-owned enterprises (SOEs / BUMN) in construction—such as PT Wijaya Karya (Persero) Tbk, PT Waskita Karya (Persero) Tbk, and PT Pembangunan Perumahan (Persero) Tbk—have played a pivotal role in national development. The Indonesian Ministry of SOEs actively promotes sustainability principles through Social and Environmental Responsibility (TJSL) programs and Environmental, Social, and Governance (ESG) frameworks.

As the 2010s transitioned into the 2020s, demands for corporate transparency and accountability mounted. Global institutional investors increasingly incorporate ESG metrics into investment decision-making, while international standard-setters such as the Global Reporting Initiative (GRI) and the International Sustainability Standards Board (ISSB) work toward harmonizing sustainability disclosures worldwide. In this context, Sustainability-Oriented Accounting (SOA) and Integrated Reporting (IR)—pioneered by the International Integrated Reporting Council (IIRC)—serve as vital instruments for fostering corporate transparency and long-term value creation.

Despite these developments spanning over two decades, the implementation of SOA and IR among Indonesian construction SOEs remains sub-optimal. Most enterprises remain in an adaptive stage where reporting is largely compliance-based rather than value-based. Furthermore, disclosures remain dominated by qualitative narratives rather than fully integrated quantitative accounting data. Prior literature highlights several persistent gaps in practice:

1. Rob Gray (2010): Observed that corporate sustainability accounting practices remain predominantly narrative-driven and fail to fully reflect authentic ecological conditions, often serving as symbolic reporting.
2. Stefan Schaltegger & Roger Burritt (2010): Demonstrated that sustainability accounting continues to evolve as a concept distinct from internal management accounting, remaining isolated from core managerial decision-making.
3. Edeltraud Guenther et al. (2016): Revealed that sustainability accounting, management control systems, and external reporting operate in a fragmented manner.
4. Experimental IR Studies: Indicated that while combining financial and non-financial metrics improves investor perception, it does not automatically enhance deep comprehension of sustainable performance.
5. Gunawan et al. (2022): Found that Indonesian SOEs display high compliance due to coercive regulatory pressure (Mimetic Isomorphism), yet disclosure quality varies widely with minimal quantitative environmental cost accounting (SOA).

Research Gaps

Existing literature reveals five primary research gaps in the context of construction SOEs:

1. Conceptual Gap: Sustainability accounting remains conceptual and is rarely integrated into core double-entry accounting architecture.
2. Integration Gap: Accounting systems, internal control mechanisms, and external reporting function independently without unified synergies.
3. Practice Gap: Reporting leans heavily on qualitative narrative rhetoric rather than rigorous quantitative metrics.
4. Contextual Gap: Empirical studies examining the direct intersection of SOA and IR specifically within state-owned construction firms in emerging economies remain sparse.

5. Process-Outcome Gap: Prior research overwhelmingly focuses on disclosure outputs rather than internal accounting processes and long-term value creation outcomes.

Research Novelty

This study introduces novelty by:

1. Mapping the technical mechanism through which environmental cost accounting (SOA) data converts into natural and manufactured capitals within the Integrated Reporting framework. Unlike prior studies that examine sustainability reporting solely as a public relations tool, this research bridges the gap between internal accounting measurement systems and external multy-capital disclosures in high-impact state-owned enterprises.
2. Evaluating how state-owned construction enterprises balance strict government environmental mandates with post-pandemic financial restructuring and debt management. It offers a unique empirical lens on stage-driven infrastructure development within an emerging market context.
3. Providing a granular analysis of the practical trade-offs between short-term capital expenditure allocations and long-term ESG (Enviromental, Social, and Governance) value creation in construction projects.

Research Objectives & Contributions

The primary objective is to analyze the extent of SOA integration into internal financial accounting and examine how Integrated Reporting conveys multi-capital value creation. Theoretically, this study extends Legitimacy Theory and Stakeholder Theory in emerging market SOEs. Practically, it offers actionable guidelines for corporate management and regulatory bodies (Ministry of SOEs, OJK) to standardize integrated disclosures.

Scope of Discussions

The scope of this research is delineated as follows:

1. Sectoral Focus: State-Owned Enterprises operating within the construction and infrastructure sector in Indonesia;
2. Substantive Focus: Integration of the Six Capitals (Financial, Manufactured, Intellectual, Human, Social & Relationship, Natural) under the IIRC framework alongside SOA principles; and
3. Documentary Focus: Analysis of corporate Annual Reports, Sustainability Reports, and Integrated Reports.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Sustainability-Oriented Accounting (SOA)

Sustainability-Oriented Accounting (SOA) represents an extension of conventional accounting that incorporates environmental and social dimensions into economic measurement. Bello et al. (2021) define SOA as a branch of accounting that identifies, measures, collects, analyzes, and reports financial and non-financial impacts resulting from corporate activities. Munandar et al. (2026) emphasize SOA as an information system designed to internalize negative externalities into external reports. Aluchna et al. (2023) highlight the Triple Bottom Line (TBL) approach (Profit, People, Planet), while Cahyani & Nugroho (2024) position environmental preservation costs as strategic operational investments rather than mere expense burdens.

Integrated Reporting (IR) and the Six Capitals

Integrated Reporting (IR), established by the IIRC (2021), synthesizes financial and non-financial performance into a single, cohesive narrative. While SOA provides the underlying measurement data, IR

connects these inputs across Six Capitals: (1) Financial Capital; (2) Manufactured Capital; (3) Intellectual Capital; (4) Human Capital; (5) Social & Relationship Capital; and (6) Natural Capital.

Construction SOEs in the Indonesian Regulatory Context

Under Law No. 19/2003, amended through recent legislative updates (Law No. 01/2025 and Law No. 16/2025), Indonesian SOEs operate under a dual role: generating economic commercial profits while fulfilling state mandate as agents of development. The regulatory transition converting the Ministry of SOEs into the SOE Regulatory Body (BP BUMN) in 2025 further reshapes corporate governance and sustainability mandates.

RESEARCH METHOD

This study employs a descriptive qualitative design utilizing document analysis and qualitative content analysis (Sugiyono, 2021). The research objects comprise Annual Reports, Sustainability Reports, and Integrated Reports of publicly listed construction SOEs on the Indonesia Stock Exchange (IDX)—specifically PT Wijaya Karya (Persero) Tbk, PT Waskita Karya (Persero) Tbk, and PT Pembangunan Perumahan (Persero) Tbk. Secondary data were analyzed following the Miles, Huberman, and Saldana (2020) model (Data Reduction, Data Display, Comparative Analysis, Conclusion Drawing). Methodological rigor was ensured through source and theoretical triangulation (Rijali, 2021).

RESULT AND DISCUSSION

Empirical Findings

The empirical analysis reveals three major findings regarding SOA and IR implementation among Indonesian construction SOEs:

1. **High Compliance-Based Orientation:** SOEs strictly comply with OJK Regulation No. 51/POJK.03/2017, but reporting remains compliance-driven rather than value-driven.
2. **Dominance of Social Disclosures:** Occupational Health and Safety (OHS) and community development (TJSL) receive extensive coverage, whereas quantitative environmental cost accounting (SOA) remains minimally reported.
3. **Fragmented Six Capitals Disclosures:** Financial and manufactured capitals are thoroughly disclosed in audited statements, but natural and intellectual capitals are predominantly qualitative.

Discussion & Core Challenges

The synthesis of empirical observations identifies key structural challenges faced by construction SOEs in implementing SOA and IR:

No	Challenge Category	Detailed Description
1	**Data & Internal Accounting Gap**	Lack of specialized accounting software and chart of accounts capable of isolating, capturing, and internalizing environmental impact costs into real-time managerial cost accounting.
2	**Restructuring & Financial Dilemma**	In the post-pandemic recovery era, construction SOEs face severe liquidity pressures, leading to trade-offs where short-term cost reduction takes precedence over long-term ESG capital investment.

3	**Dual Mission Complexity**	The dual role as state development agents and commercial profit-seeking entities creates conflicting priorities, where short-term financial targets override multi-capital value creation.

CONCLUSION

The implementation of Sustainability-Oriented Accounting (SOA) and Integrated Reporting (IR) in Indonesian state-owned construction enterprises has advanced significantly in terms of regulatory compliance. However, reporting quality remains fragmented and predominantly qualitative. A persistent bottleneck is the lack of seamless conversion between internal environmental cost accounting (SOA) and quantitative Six Capitals measurement within Integrated Reports.

Policy & Practical Implications: Regulators (OJK, BP BUMN, IAI) should formulate standardized technical guidelines for environmental cost accounting classification. Furthermore, construction SOE management must establish integrated IT-driven management accounting systems to bridge financial and non-financial data, thereby fostering genuine long-term value creation.

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