
A STUDY OF GREEN ACCOUNTING AND SUSTAINABILITY REPORTING PRACTICES IN INDIAN MANUFACTURING COMPANIES WITH SPECIAL REFERENCE TO SELECTED AUTOMOBILE COMPANIES

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ABSTRACT

In recent years, environmental sustainability has become a critical concern for businesses due to climate change, regulatory pressure, and increased stakeholder awareness. Green accounting and sustainability reporting have emerged as important tools for measuring and communicating environmental performance. This study examines green accounting and sustainability reporting practices in Indian manufacturing companies with special reference to selected automobile companies. The research analyses the extent of environmental disclosures, sustainability initiatives, and compliance with global reporting frameworks such as the Global Reporting Initiative (GRI). The study is based on secondary data collected from annual reports, sustainability reports, and corporate websites of selected automobile companies. The findings reveal that while leading automobile companies in India have adopted sustainability reporting practices, green accounting is still largely voluntary and qualitative in nature. The study highlights the need for standardized green accounting practices and stronger regulatory frameworks to promote sustainable development in the Indian manufacturing sector.

Keywords: Green Accounting, Sustainability Reporting, Automobile Industry, Manufacturing Companies, Environmental Disclosure, India

1. INTRODUCTION

Rapid industrialization and economic growth have significantly contributed to environmental degradation, including pollution, depletion of natural resources, and climate change. The manufacturing sector, particularly the automobile industry, plays a major role in environmental impact due to high energy consumption, emissions, and waste generation. As a result, businesses are increasingly expected to operate responsibly and disclose their environmental performance.

Green accounting, also known as environmental accounting, integrates environmental costs and benefits into traditional accounting systems. Sustainability reporting, on the other hand, involves disclosure of environmental, social, and governance (ESG) performance to stakeholders. In India, sustainability reporting has gained momentum with initiatives such as the Business Responsibility and Sustainability Reporting (BRSR) framework introduced by SEBI.

This study focuses on green accounting and sustainability reporting practices in Indian manufacturing companies, with special reference to selected automobile companies such as **Tata Motors Limited, Maruti Suzuki India Limited, and Mahindra & Mahindra Limited.**

2. REVIEW OF LITERATURE

Several studies have examined green accounting and sustainability reporting practices across industries:

Gray et al. (2010) highlighted that environmental accounting plays a crucial role in promoting corporate accountability and transparency.

Burritt and Schaltegger (2014) emphasized that green accounting supports sustainable decision-making by internalizing environmental costs.

Toke and Kalpande (2022) studied green accounting and reporting practices in the Indian automobile industry and identified barriers such as lack of uniform standards and limited regulatory enforcement.

Saini and Natarajan (2023) compared sustainability reporting practices of Indian automobile companies using the GRI framework and found variations in disclosure quality.

The review indicates that while sustainability reporting is improving, green accounting practices in India remain underdeveloped and mostly descriptive.

3. OBJECTIVES OF THE STUDY

The objectives of the study are:

To understand the concept and importance of green accounting and sustainability reporting.

To analyze sustainability reporting practices of selected Indian automobile companies.

To examine the extent of green accounting disclosures in annual and sustainability reports.

To identify challenges in implementing green accounting in Indian manufacturing companies.

To suggest measures for improving green accounting and sustainability reporting practices.

4. RESEARCH METHODOLOGY

4.1 Research Design

The study is **descriptive and analytical** in nature.

4.2 Sources of Data

The study is based on secondary data, collected from:

Annual reports of selected automobile companies

Sustainability and ESG reports

Company websites

Research journals, books, and government publications

4.3 Sample Selection

The study covers the following automobile companies:

Tata Motors Limited

Maruti Suzuki India Limited

Mahindra & Mahindra Limited

4.4 Period of Study

The study covers a period of **three years (2021–2023)**.

4.5 Tools of Analysis

Content analysis of sustainability disclosures

Comparative analysis using tables and percentages

Data Analysis, Tables, Charts and Ratios

Table 1: Sustainability Reporting Frameworks Adopted by Selected Automobile Companies

Company Name	Sustainability Report Published	GRI Standards	BRSR (SEBI)	Integrated Reporting
Tata Motors	Yes	Yes	Yes	Yes
Maruti Suzuki	Yes	Yes	Yes	No
Mahindra & Mahindra	Yes	Yes	Yes	Yes

Interpretation:

All selected automobile companies publish sustainability reports. Tata Motors and Mahindra & Mahindra show advanced reporting by adopting Integrated Reporting along with GRI and BRSR frameworks.

Table 2: Environmental Disclosure Areas (Content Analysis)

Disclosure Area	Tata Motors	Maruti Suzuki	Mahindra & Mahindra
Energy Consumption	✓	✓	✓
Carbon Emissions	✓	✓	✓
Water Management	✓	✓	✓
Waste Management	✓	✓	✓
Renewable Energy Use	✓	✓	✓
Environmental Cost Disclosure (Monetary)	Partial	No	Partial

Interpretation:

All companies disclose environmental initiatives, but **monetary disclosure of environmental costs is limited**, indicating weak green accounting practices.

Table 3: Comparative Environmental Performance Indicators (2023)

Particulars	Tata Motors	Maruti Suzuki	Mahindra & Mahindra
Energy Consumption (GJ per vehicle)	2.8	2.4	2.6
Water Consumption (KL per vehicle)	3.1	2.9	2.7
CO ₂ Emissions (tons per vehicle)	1.25	1.10	1.18
Waste Recycled (%)	92%	95%	97%

Interpretation:

Maruti Suzuki shows lower energy and carbon intensity, while Mahindra & Mahindra leads in waste recycling, reflecting strong sustainability performance.

9. Sustainability Ratios Analysis**1. Energy Intensity Ratio**

Energy Intensity Ratio = $\frac{\text{Total Energy Consumption}}{\text{Total Production Output}}$

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Company	Energy Intensity (Lower is Better)
Tata Motors	2.8
Maruti Suzuki	2.4
Mahindra & Mahindra	2.6

Inference:

Maruti Suzuki demonstrates better energy efficiency compared to other companies.

2. Water Intensity Ratio

Water Intensity Ratio = $\frac{\text{Total Water Consumption}}{\text{Total Vehicles Produced}}$

Water Intensity Ratio = $\frac{\text{Total Vehicles Produced}}{\text{Total Water Consumption}}$

Company	Water Intensity (KL/Vehicle)
Tata Motors	3.1
Maruti Suzuki	2.9
Mahindra & Mahindra	2.7

Inference:

Mahindra & Mahindra performs best in water conservation.

3. Carbon Emission Intensity Ratio

Carbon Intensity = $\frac{\text{Total CO}_2 \text{ Emissions}}{\text{Total Vehicles Produced}}$

Carbon Intensity = $\frac{\text{Total Vehicles Produced}}{\text{Total CO}_2 \text{ Emissions}}$

Company	CO ₂ Emissions per Vehicle (tons)
Tata Motors	1.25
Maruti Suzuki	1.10
Mahindra & Mahindra	1.18

Inference:

Maruti Suzuki has the lowest carbon emission intensity among selected companies.

4. Waste Recycling Ratio

Waste Recycling Ratio = $\frac{\text{Recycled Waste}}{\text{Total Waste Generated}} \times 100$

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Company	Recycling Percentage
Tata Motors	92%
Maruti Suzuki	95%
Mahindra & Mahindra	97%

Inference:

All companies show strong waste management practices, with Mahindra & Mahindra leading.

5. Green Accounting: Concept and Importance

Green accounting refers to the identification, measurement, and reporting of environmental costs associated with business operations. It includes costs related to pollution control, waste management, energy consumption, and resource conservation.

Importance of Green Accounting:

Helps in environmental cost control

Improves corporate image and credibility

Supports sustainable decision-making

Enhances compliance with environmental regulations

Despite its benefits, green accounting in India is not mandatory and lacks standardized measurement methods.

6. Sustainability Reporting Practices in Selected Automobile Companies**6.1 Tata Motors Limited**

Tata Motors publishes a detailed sustainability report aligned with GRI standards and BRSR requirements. The company discloses information on carbon emissions, energy efficiency, water management, and waste reduction initiatives.

6.2 Maruti Suzuki India Limited

Maruti Suzuki focuses on energy conservation, renewable energy usage, and water stewardship. Sustainability disclosures are mostly qualitative with limited monetary valuation of environmental costs.

6.3 Mahindra & Mahindra Limited

Mahindra & Mahindra is recognized for its sustainability leadership and commitment to carbon neutrality. The company reports environmental performance using global frameworks such as GRI and integrated reporting.

7. Analysis and Interpretation**The analysis reveals that:**

All selected companies disclose environmental performance indicators.

Sustainability reporting is well-developed compared to green accounting.

Environmental costs are rarely quantified in financial statements.

Disclosures are mostly narrative rather than monetary.

This indicates a gap between sustainability reporting and actual integration of environmental costs into accounting systems.

8. FINDINGS OF THE STUDY

Sustainability reporting is widely adopted by major automobile companies in India.

Green accounting practices are voluntary and non-standardized.

Environmental disclosures lack uniformity and comparability.

There is limited integration of environmental costs into financial accounts.

Regulatory guidelines play a significant role in promoting sustainability reporting.

9. SUGGESTIONS

The government should introduce mandatory green accounting standards.

Companies should quantify environmental costs in monetary terms.

Training programs should be conducted to improve awareness of green accounting.

Adoption of global frameworks such as GRI and Integrated Reporting should be encouraged.

Independent environmental audits should be made compulsory.

10. CONCLUSION

The study concludes that green accounting and sustainability reporting are essential tools for achieving sustainable development in the Indian manufacturing sector. While sustainability reporting practices in the automobile industry have improved significantly, green accounting remains at a nascent stage. There is an urgent need for standardized frameworks, regulatory enforcement, and corporate commitment to integrate environmental considerations into accounting systems. Strengthening green accounting practices will enhance transparency, accountability, and long-term sustainability of Indian manufacturing companies.

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