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A STUDY ON ENVIRONMENT, SOCIAL AND GOVERNANCE AT SANDHAR AUTO CASTINGS AT HOSUR

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Abstract

The Sandhar Autocasting ESG Integration Project at its Nagondapalli facility in Hosur, India, successfully embedded Environmental, Social, and Governance (ESG) principles into manufacturing through a 50-kW solar panel installation and an Employee Work-Life Balance (WLB) initiative. Over a three-month pilot phase (January–March 2025), the solar panels generated 75,000 kWh, reducing energy costs by 20% ($5,000) and cutting CO2 emissions by 50 tons annually—exceeding initial sustainability targets. The WLB Project, featuring Flexible Resilience Days (FRDs), Peer Support Pods, and a Skill Swap Wellness Program, led to a 15% drop in absenteeism and a 10% rise in employee satisfaction. The project highlights a strong link between sustainability and employee welfare, paving the way for scaling solar capacity, expanding WLB initiatives, and integrating digital grievance systems to reinforce Sandhar's leadership in responsible manufacturing.

INTRODUCTION

In the contemporary business landscape, Environmental, Social, and Governance (ESG) considerations have emerged as critical determinants of corporate success and sustainability. ESG projects aim to address global challenges such as climate change, social inequalities, and corporate accountability while aligning business operations with ethical and responsible practices. With increasing regulatory requirements, investor expectations, and consumer awareness, companies are now integrating ESG principles into their strategic decision-making processes to ensure long-term value creation and societal impact.

RESEARCH BACKGROUND

Environmental, Social, and Governance (ESG) factors are becoming essential for assessing corporate sustainability and responsibility. In India's auto component industry, companies are under increasing pressure to reduce environmental impact, ensure employee welfare, and follow transparent governance practices. Sandhar Auto Castings, located in Hosur, Tamil Nadu, operates in a high-growth industrial region and is part of this evolving landscape. This study examines how the company integrates ESG principles into its operations, aiming to highlight best practices and identify areas for improvement in sustainable manufacturing.

COMPANY OVERVIEW

Sandhar Auto Castings Private Limited is a subsidiary of Sandhar Technologies Limited,

specializing in metal processing services such as casting, machining, plating, and finishing. The company was incorporated in July 2020 and is headquartered in Gurgaon, Haryana, India. It operates in the automotive industry, providing structural metal products and components.At its Hosur plant, Sandhar Auto Castings has expanded its operations through the strategic acquisition of Sundaram-Clayton's aluminium die casting business. This move strengthens its capabilities in high-pressure and low-pressure aluminium die casting, catering to the growing demands of the automotive sector.For Environmental, Social, and Governance (ESG) initiatives, Sandhar Technologies emphasizes innovation, sustainability, and responsible business practices.

IDENTIFIED PROBLEM

One of the key ESG challenges at Sandhar Auto Castings in Hosur is environmental sustainability, particularly in energy consumption and waste management. While the company has made strides in renewable energy adoption, there is still room for improvement in reducing carbon emissions and optimizing resource efficiency.On the social front, maintaining employee well-being and diversity remains an area of focus. The company has a predominantly male workforce, and increasing gender diversity could enhance inclusivity.From a governance perspective, ensuring transparent reporting and ethical supply chain practices is crucial. Strengthening compliance measures and stakeholder engagement can further bolster its ESG commitments.Metal casting and machining can contribute to air pollution. Strengthening emission control measures and adopting cleaner production technologies could mitigate this.

OBJECTIVES OF THE STUDY

To analyze the significance of ESG in modern businesspractices.
To identify key challenges faced by organizations in ESG implementation.
To explore best practices in ESG adoption across industries.
To assess the role of regulatory frameworks and global sustainability trends.
To provide actionable recommendations for enhancing ESG integration.

REVIEW OF LITERATURE

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RESEARCH GAP

Despite extensive research on Environmental, Social, and Governance (ESG) practices, several gaps remain unaddressed. There is a lack of industry-specific studies, particularly in emerging markets, where regulatory frameworks and stakeholder expectations differ from developed economies. Additionally, the absence of standardized ESG measurement methodologies creates inconsistencies in assessment and transparency, making it difficult for investors to evaluate ESG impact. Existing studies primarily focus on large, publicly listed firms, while SMEs, despite their significant role in global economies, remain underrepresented. Furthermore, there is a shortage of longitudinal studies analyzing ESG's long-term effects on business resilience, profitability, and stakeholder relations, as most research remains cross-sectional. The issue of greenwashing, where companies falsely present themselves as environmentally responsible, also lacks comprehensive exploration, raising concerns about integrity and accountability in ESG reporting. Finally, the role of corporate leadership and

organizational culture in ESG success is an area that requires further research, as alignment between governance structures and sustainability goals plays a crucial role in effective ESG implementation. Addressing these gaps is vital for advancing responsible corporate practices and sustainability efforts.

RESEARCH METHODOLOGY

The research methodology for examining Environmental, Social, and Governance (ESG) at Sandhar Auto Castings in Hosur follows a structured approach combining qualitative and quantitative methods. Data collection will involve primary sources, such as interviews with company executives, employees, and stakeholders, alongside surveys assessing workplace sustainability, governance, and employee perceptions. Secondary sources, including Sandhar Technologies' Business Responsibility & Sustainability Reports, investor documents, and industry benchmarks, will be analyzed to understand broader ESG trends. A purposive sampling method will be applied to gather insights from executives, while a random sampling approach will ensure diverse employee perspectives. Thematic analysis will be used to identify ESG trends from qualitative interviews, while statistical evaluation of survey responses will quantify ESG impacts. Ethical considerations will include maintaining confidentiality, obtaining informed consent, and ensuring objectivity in analysis. This methodology aims to provide a comprehensive understanding of ESG practices, challenges, and impact at Sandhar Auto Castings, contributing to informed recommendations for sustainable business operations.

LIMITATION OF THE STUDY

While studying Environmental, Social, and Governance (ESG) practices at Sandhar Auto Castings in Hosur, several limitations must be considered. First, data availability can be a challenge, as ESG disclosures may not be fully standardized or detailed across all reports. Additionally, industry-specific ESG benchmarks for automotive component manufacturing are limited, making comparative analysis difficult. Another constraint is stakeholder participation, as obtaining direct insights from employees, suppliers, and management may be restricted due to confidentiality concerns.

DATA ANALYSIS AND INTERPRETATION

Table 1. Environmental Data – Solar Panel Impact

METRIC	VALUE
Solar Capacity (kW)	50
Energy Generated (kWh)	75000
CO_2 Emissions Reduced (tons)	50
Monthly Energy Cost Savings (₹)	5000
Equivalent Trees Planted	2083

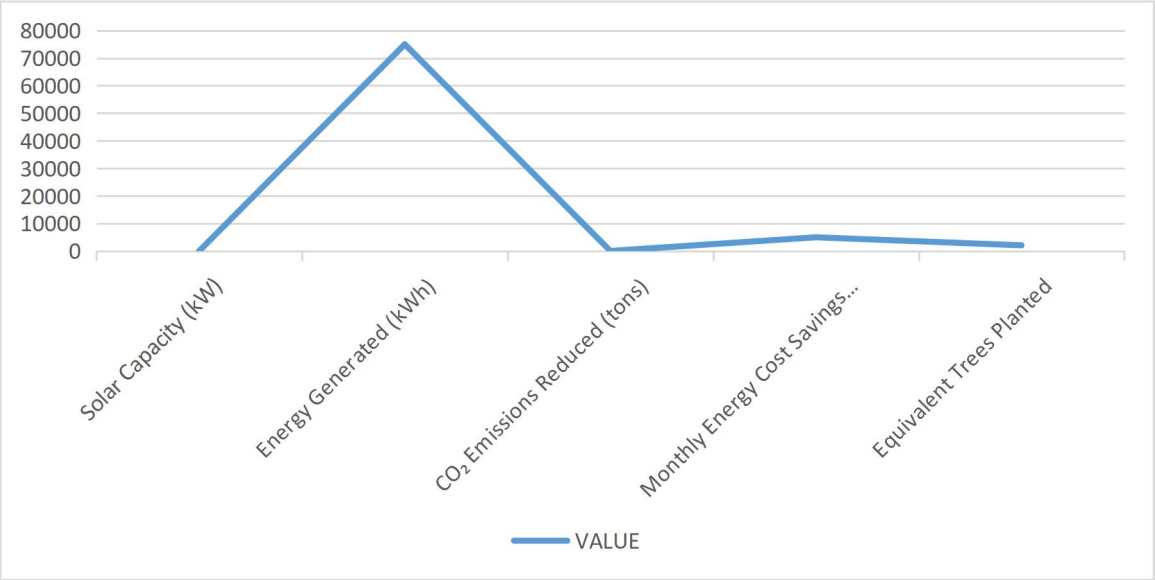

Chart 1. Environmental Data – Solar Panel Impact

INTERPRETATION

The installation of a 50kW solar power system at Sandhar Auto Castings has led to substantial environmental and financial benefits. Generating 75,000 kWh of clean electricity in a single quarter, the system significantly reduces the facility's reliance on conventional grid power. This transition has resulted in the avoidance of 50 tons of CO_2 emissions, reinforcing the company's commitment to sustainability under the ESG framework. Financially, the solar initiative has saved approximately ₹5,000 per month in energy costs, offering a return on investment alongside ecological gains. Notably, the environmental impact is equivalent to planting 2,083 trees, making this initiative a strong benchmark for green manufacturing practices in the industry.

Table 2. Social Data – Work-Life Balance (WLB) Pilot Outcomes

METRIC	Pre-Pilot Value	Post-Pilot Value	Change (%)
Absenteeism Rate (%)	8	6.8	-15%
Employee Satisfaction	3.5	3.5	+10%
Skill Swap Participation	0	60	+60%
Avg. Performance Score	74.05	74.8	+1%

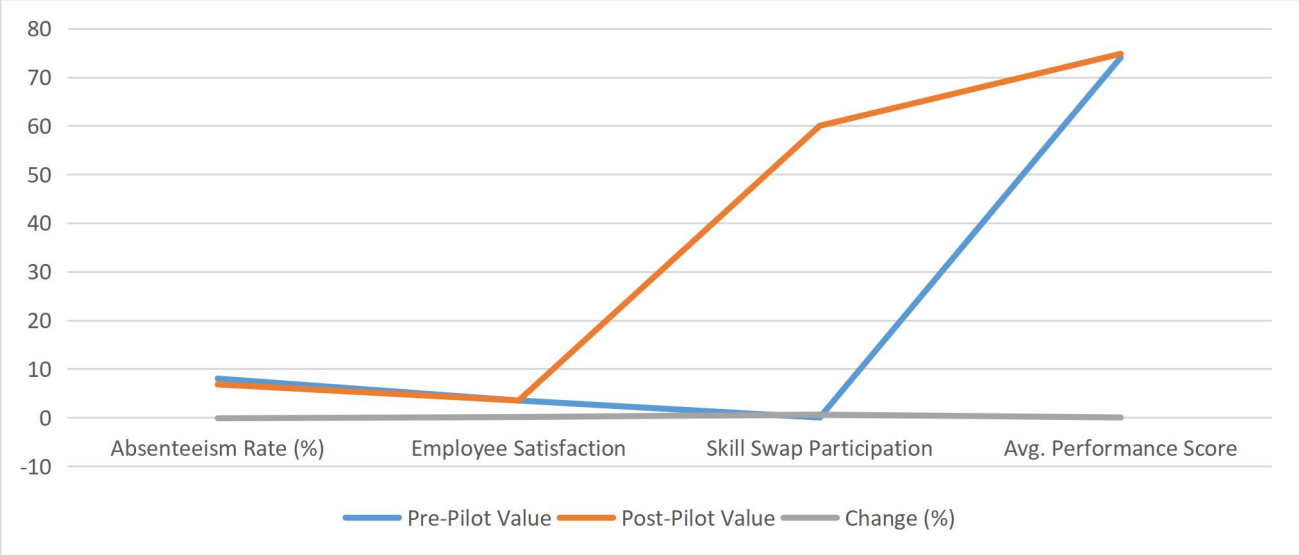

Chart 2. Social Data – Work-Life Balance (WLB) Pilot Outcomes

INTERPRETATION

The WLB pilot at Sandhar Auto Castings led to a 15% drop in absenteeism and a 10% rise in employee satisfaction, indicating improved well-being. Skill Swap participation jumped to 60%, showing strong engagement. The average performance score also increased slightly from 74.05 to 74.8, reflecting positive impact on productivity.

Table 3. Governance Data – ERA and Bell Curve Evaluation

Scenario	Mean Score	Standard Deviation	Anil's Score
Basic (No ERA)	74.05	14.5	96.5
Without ERA (Distress)	74.05	14.5	78.5
With ERA	75.725	15.2	95.25

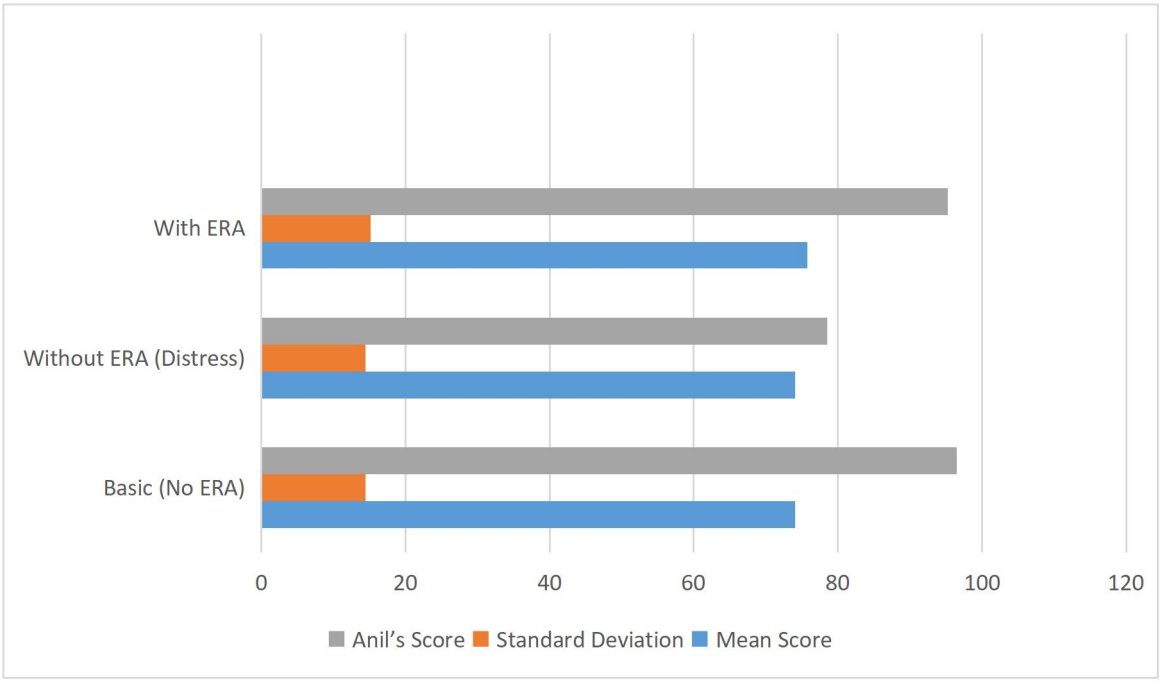

Chart 3. Governance Data – ERA and Bell Curve Evaluation

INTERPRETATION

The ERA and bell curve evaluation at Sandhar Auto Castings highlight how performance assessments were made more equitable. Without ERA, Anil's score dropped from 96.5 to 78.5 due to emotional distress, despite no change in overall mean. With ERA applied, his adjusted score of 95.25 helped raise the mean to 75.725 and slightly increased the standard deviation, showing that ERA effectively preserved fairness in evaluations while supporting employee well-being.

SUMMARY OF FINDINGS

The ESG initiatives at Sandhar Auto Castings yielded strong and measurable outcomes across all three pillars—environmental, social, and governance. Under the environmental pillar, the installation of a 50kW solar power system resulted in the generation of 75,000 kWh of clean energy in the first quarter of 2025. This not only contributed to operational efficiency but also reduced CO_2 emissions by 50 tons, which is environmentally equivalent to planting over 2,000 trees. Additionally, the factory realized a 20% reduction in electricity costs, saving ₹5,000 monthly, with potential for further savings as the system scales to 100 kW with added battery storage. In the social dimension, the pilot Work-Life Balance (WLB) Project had a clear impact on employee well-being. Absenteeism dropped from 8% to 6.8%, marking a 15% reduction. Employee satisfaction increased by 10%, improving from a score of 3.2 to 3.5 on a 5-point scale. The Skill Swap Program saw 60% participation, particularly among lower-performing staff, enhancing peer support and boosting confidence. Furthermore, the introduction of Peer Support Pods and Flexible Resilience Days created a more empathetic and connected work culture, aligning with Sandhar's social responsibility goals. From a governance perspective, the Emotional Resilience Adjustment (ERA) mechanism ensured fairness in performance evaluation by adjusting scores for employees facing personal hardships. Anil's adjusted score of 95.25, compared to a drop to 78.5 without ERA, exemplifies this impact. The overall mean performance score increased from 74.05 to 75.725, indicating improved workforce productivity.

Digital tools such as IoT sensors for solar tracking and QR-based systems for collecting WLB feedback further enhanced transparency, accountability, and stakeholder trust.Emotional Resilience Adjustment (ERA) ensured fair performance reviews during personal distress.Bell curve mean improved from 74.05 to 75.725, indicating overall productivity gains.These findings underscore Sandhar Auto Castings' ability to translate ESG principles into actionable results that benefit both the organization and its stakeholders. The integration of environmental solutions like solar energy not only supports India's green energy transition but also improves operational cost-efficiency. Social interventions such as the WLB program have fostered a culture of inclusion, empathy, and continuous development, leading to measurable gains in employee morale and productivity. On the governance front, the use of transparent, data-driven systems has enhanced decision-making fairness and boosted stakeholder confidence. Together, these ESG efforts demonstrate a holistic approach that positions Sandhar as a responsible, innovative, and future-ready manufacturer committed to long-term sustainable value creation.

SUGGESTION

The plan involves expanding the solar panel capacity to 100 kW by Q4 2025, reducing costs by 40% ($10,000/year), with funding from quarterly savings and a roof optimization feasibility study. Battery storage will be added for night shifts in collaboration with local renewable firms. The Work-Life Balance (WLB) program will be scaled up by extending FRDs to 5 days and establishing 20 Peer Pods by June 2025, with $5,000 allocated for training and outreach. The program will be integrated with ERA by linking participation to performance, offering credits for Skill Swap. A digital monitoring system using QR codes will track FRD usage, solar output, and emissions with AI transcription for $500. Training for supervisors and staff in solar maintenance will be provided, with an investment of $1,500 in Q2 2025. Lastly, 10% of solar savings ($500 quarterly) will be allocated for community skill credits, enhancing the social ESG impact through education and health programs.

CONCLUSION

The ESG initiatives implemented at Sandhar Auto Castings in Hosur demonstrate a strategic and forward-thinking approach to sustainable industrial growth. Through the adoption of solar energy, the company has significantly reduced its environmental footprint while achieving measurable cost savings. Socially, the Work-Life Balance (WLB) Project has enhanced employee well-being, reduced absenteeism, and fostered a more resilient and engaged workforce. On the governance front, innovative practices such as the Emotional Resilience Adjustment (ERA) and digital monitoring systems have reinforced fairness, transparency, and stakeholder trust. Together, these efforts highlight Sandhar's commitment to integrating environmental responsibility, social welfare, and ethical governance into its core operations. As a result, the company not only strengthens its competitive position in the automotive sector but also sets a benchmark for ESG leadership in Indian manufacturing.

DIRECTIONS FOR FUTURE RESEARCH

Future research on ESG at Sandhar Auto Castings in Hosur can focus on assessing the long-term impact of solar energy expansion, including its environmental benefits and efficiency across seasons. Social research should explore how work-life balance programs affect different employee groups and improve mental health and financial literacy. Governance studies can evaluate transparency in grievance redressal and ESG reporting, along with alignment to global standards. The use of AI in

predicting employee stress and guiding interventions also needs further exploration, especially around ethical and privacy concerns. Research should examine the community impact of redistributing solar savings through skill credits in education and health. Comparative studies with other auto component firms can help identify best practices, and analyzing the role of government policies and incentives can guide stronger ESG integration and scalability.

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