

A Comparative Study of Corporate Social Responsibility in Public Sector Undertaking: A case study of Steel Authority of India Limited (SAIL), Bokaro

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Abstract—This study investigates the financial architecture of Corporate Social Responsibility (CSR) projects to explore how initiatives under the Steel Authority of India Limited (SAIL), Bokaro Steel Plant, are directed toward sustainable development. The primary objective is to examine the allocation, utilisation, and management of financial resources under CSR, evaluating the extent to which these funds achieve social welfare goals. The study assesses the CSR financial structure with respect to budget formulation, spending priorities and statutory compliance under section 135 of the Companies Act, 2013. Furthermore, it benchmarks financial utilization efficiency against transparent practices in other public sector undertakings (PSUs). The findings indicate that while SAIL has established a formal, systematic framework for CSR financial planning-investing substantial capital into its peripheral community- challenges remain regarding fund utilization efficiency, robust monitoring mechanisms, and comprehensive impact assessments. The paper concludes that enhancing financial transparency, performance evaluation, and outcome-based budgeting would significantly optimize the overall effectiveness of SAIL's CSR initiatives.

Index Terms—Corporate Social Responsibility (CSR), Financial Structure, Public Sector Undertaking (PSU), Steel Authority of India Limited (SAIL), Bokaro Steel Plant, CSR Expenditure, Budget Allocation.

I. INTRODUCTION

Sustainable development serves as the bedrock of modern corporate governance, ensuring that economic progress does not compromise environmental conservation or social welfare. This dual mandate

requires a balanced focus on education, healthcare, youth and women's empowerment, and rural development [1]. Elevating marginalized communities supporting the differently-abled, and providing for the elderly places a significant responsibility on both the state and the corporate sector. In this context, institutionalizing Corporate Social Responsibility (CSR) enables enterprises to drive systematic social progress and national development.

Steel Authority of India Limited (SAIL) is the largest steel manufacturer in India and holds the prestigious status of a Central Public Sector Maharatna Enterprises. Its operations encompass integrated steel plants- such as those in Bhilai, Durgapur, Rourkela, and Bokaro- alongside three specialized steel facilities (Salem Steel Plant, Alloy Steel Plant and Visveswaraya Iron & Steel Plant) [2]. Strategically located near domestic raw materials hub in eastern and central India, SAIL handles the distribution of its diverse product portfolio through its Central Marketing Organization (CMO). This network operates through 37 Branch Sales Offices (BSOs), 10 Customer Contact Offices (CCOs), 25 Departmental Warehouses and 22 Functional Consignment Agency Yards. Beyond industrial production, SAIL is committed to conducting business in a manner that delivers measurable social, environmental and economic benefits to its host communities, mirroring its core socio-economic goals [3].

II. REVIEW OF LITERATURE

Extant literature emphasizes the necessity of CSR within public sector undertakings to catalyze sustainable development through inclusive growth. Researchers observe that systematic financial planning and absolute transparency in fund utilization are the primary determinants of successful CSR campaigns. Scholars further contend that CSR frameworks within heavy industries like SAIL are vital to upgrading the quality of life in neighbouring rural societies, though continuous evaluation remains necessary to optimize outcomes.

The theoretical baseline spans human capital development, environmental sustainability, and statutory compliance. Okewale et al. (2020) highlighted the critical relationship between human capital investments including skill acquisition, formal education, and employee welfare and the realization of the Sustainable Development Goals (SDGs) in emerging economies [5]. In the domain of public infrastructure, regional studies emphasize the need for cross-border policy alignment to address accessibility, equity, and affordability in social safety nets, particularly healthcare access for vulnerable populations [2].

Focusing specifically on the steel sector, Maurya (2016) evaluated the operational footprint of SAIL's CSR policy, noting substantial allocations toward educational infrastructure, mobile health units, rural development, and regional civic upgrades [3]. However, the study concluded that public enterprises must adopt more rigorous impact assessment methodologies to validate the social returns on these expenditures. This aligns with industrial research highlighting the importance of manufacturing resilience, eco-innovation, and resource waste minimization as indirect contributors to local socio-economic stability [4].

In a comparative evaluation of public and private corporate frameworks, Ranjan and Tiwary (2018) observed that globalization forced CSR to transition from voluntary corporate philanthropy into structured planning [6]. While public sector undertakings primarily engage in welfare-oriented and community-centric CSR, private firms lean toward strategic, brand-aligned initiatives.

Furthermore, environmental sustainability remains central to community development in resource-rich states like Jharkhand. Chatterjee and Sarkar (2016) demonstrated that incorporating indigenous knowledge systems and environmental compliance into regional corporate initiatives significantly ensures ecological preservation [1]. Finally, Tanuja (2015) traced the legislative evolution of CSR in India, illustrating how the transition to mandatory compliance under the law has successfully institutionalized corporate funding to target national developmental priorities [7]. Collectively, the literature underscores that while public sector corporations maintain expansive welfare frameworks, there is an ongoing need for increased financial transparency and robust monitoring systems.

III. CORPORATE SOCIAL RESPONSIBILITY (CSR) FRAMEWORK OF SAIL

Corporate Social Responsibility at SAIL, Bokaro, centers on sustainable development and the socio-economic upliftment of communities residing within its operational periphery. The organization allocates resources across several key domains: education, healthcare, rural development, vocational training, and environmental sustainability. These initiatives are deliberately designed to reduce regional disparities and improve the human development index (HDI) of marginalized groups, while ensuring strict compliance with Section 135 of the Companies Act, 2013.

Table 1: CSR Concept of SAIL

CSR Activity	Focus Area	Intended Beneficiaries	Expected Outcome
School Infrastructure Development	Education	Rural students	Enhanced learning environments
Scholarship Programs	Education	Meritorious & Marginalized students	Retention and access to higher education
Mobile Health Vans	Healthcare	Peripheral Villagers	Accessible primary medical services
Free Medical Camps	Healthcare	Local communities	Early disease detection & prevention
Drinking Water Supply	Rural Development	Water-Scarce Villages	Access to Safe and potable drinking water

Sanitation Projects	Hygiene & Sanitation	Rural households	Open defecation free (ODF) communities
Skill Development Training	Employment	Unemployed Youth	Improved job readiness and vocational skills
Women Empowerment Programs	Social welfare	Self-Help Groups (SHGs)	Financial independence & entrepreneurship
Vocational Training Centers	Employment	Rural youth	Self-employment opportunities
Plantation Drives	Environment	Local Ecosystem	Carbon Sequestration & environmental balance
Solar Lighting Projects	Renewable Energy	Off-Grid Rural areas	Sustainable, clean energy access
Support to Disabled Persons	Social inclusion	Differently-abled Individuals	Improved livelihood & mobility support
Rural Road Development	Infrastructure	Remote Villages	Enhanced market connectivity
Sports Promotion	Youth development	Rural Students & Athletes	Talent identification & physical wellness
Awareness Programs (Health & Hygiene)	Public awareness	General public	Improved community preventive health habits



Figure 1: Corporate Social Responsibility (CSR) of SAIL

IV. RESEARCH METHODOLOGY

This study utilizes an exploratory research design based entirely on secondary data. No primary data was gathered directly from field surveys. The analysis relies on audited financial disclosures and operational data extracted from the official Annual CSR Reports of Steel Authority of India Limited, compliance disclosures from the Ministry of Corporate Affairs (MCA), research articles, academic journals, and statutory publications.

The primary objective is to analyze the sector-wise financial allocations and expenditure consistency of CSR at SAIL's Bokaro Steel Plant. Secondary data from corresponding financial periods were collated, categorized by socio-economic sectors, and evaluated to map spending trends. The inherent limitations of

this methodology rest on the accuracy and structural completeness of the publicly available published records.

a. Research Objectives:

- o To evaluate the structural implementation of Corporate Social Responsibility (CSR) initiatives executed by SAIL, Bokaro Steel Plant.
- o To analyze the financial trends and sectoral distributions across primary intervention areas, including education, healthcare, infrastructure, and environmental sustainability.

V. DATA INTERPRETATIONS AND STATISTICAL ANALYSIS

To assess the structural consistency of SAIL's CSR framework, a statistical analysis was conducted on the sector-wise financial expenditures across thirteen distinct welfare categories for the financial years ending March 31, 2024, and March 31, 2025. Statistical tools, including Pearson correlation and linear regression analysis, were applied to evaluate whether budget allocations maintain a steady, predictable operational trend over consecutive fiscal years.

Table 2: Disclosure related to Corporate Social Responsibility

Primary Intervention Sector	CSR	FY ending 31 st March, 2025	FY ending 31 st March, 2024
Education		49.55	43.98
Healthcare		22.37	26.40
Livelihood Generation		16.50	13.63

Women Empowerment	2.77	3.76
Drinking Water	1.97	2.41
Sanitation	2.02	2.40
Sports	9.92	30.69
Art & Culture	3.42	2.20
Rural Development	7.76	22.75
Social Security	12.71	4.72

Environmental Sustainability	6.69	6.10
Project Identification & Monitoring	0.79	1.01
Capacity Building of Personnel	1.61	1.90
Total Annual Expenditure	138.08	161.95

Source: Compiled from SAIL Annual Report, 2025

Data Vector	Mean (INR Mn)	Std. Deviation	Number of Sectors (N)
A. Expenditure (FY 2024-25)	10.6215	13.40621	13
B. Expenditure (FY 2023-24)	12.4577	14.00463	13

The descriptive statistics reflect the internal distribution of CSR fund allocations across the 13 defined welfare sectors. For FY 2024-25, the mean allocation per sector stood at 10.62 million, with a standard deviation of 13.41 million. For FY 2023-24, the mean sector allocation was 12.46 million, with a standard deviation of 14.00 million. The high standard deviations relative to the means in both fiscal cycles confirm wide variance across categories. This indicates that rather than distributing funds uniformly, SAIL concentrates its financial allocations heavily on high-priority sectors, such as Education and Healthcare, while maintaining lower, baseline budgets for specialized areas like capacity building and project monitoring.

		31st March, 2025	31st March, 2024
Pearson Correlation Matrix	31st March, 2025	1.000	0.838
	31st March, 2024	0.838	1.000

The Pearson correlation analysis evaluates the directional stability of funding patterns across consecutive years. The correlation coefficient (r) is calculated at 0.838, demonstrating a strong, statistically significant positive relationship between the sector allocations of the two fiscal periods. This high value confirms that the budgetary preferences across sectors remained highly stable, reinforcing that SAIL, Bokaro, adheres to a structured, institutionalized funding paradigm year-over-year.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.838 ^a	0.702	0.675	7.64365	0.702	25.914	1	11	0.000

a. Predictors: (Constant), 31st March, 2024
 b. Dependent Variable: 31st March, 2025

The OLS regression model evaluates how strongly historical sectoral allocations predict subsequent budgeting. The coefficient of determination ($R^2 = 0.702$) establishes that 70.2% of the variance in sector-wise allocations in FY 2024-25 can be explained directly by the allocation patterns of FY 2023-24. The Adjusted R^2 value (0.675) verifies model stability after adjusting for degrees of freedom. The F-statistic of 25.914 and its corresponding significance value ($p < 0.001$) confirm that the linear relationship is highly reliable and did not occur by random variance.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constan)	0.630	2.889	-	0.218	0.831
	31st March, 2024	0.802	0.158	0.838	5.091	0.000

a. Dependent Variable: 31st March, 2025

The regression equation derived from the empirical data is formulated as:

$$\text{Expenditure}_{2025} = 0.630 + 0.802 \times (\text{Expenditure}_{2024})$$

The unstandardized coefficient ($B = 0.802$) shows that for every incremental increase of 1.00 million allocated to a sector in FY 2023-24, an average of 0.802 million was allocated to that same sector in FY 2024-25. The high t-statistic of 5.091 confirms the statistical significance of this predictor at the 1% level ($p = 0.000$). The constant (0.630) lacks statistical significance ($p = 0.831$), indicating it acts purely as a structural baseline within the model. This formal linear dependency mathematically validates the high continuity in SAIL's annual budgeting structure.

VI. CONCLUSION AND STRATEGIC RECOMMENDATIONS

This study demonstrates that the Corporate Social Responsibility framework at Steel Authority of India Limited, Bokaro Steel Plant, follows a stable, institutionalized financial path. Empirical correlation ($r = 0.838$) and regression modeling ($R^2 = 0.702$) confirm that the enterprise maintains highly consistent funding priorities across its core development categories year-over-year. Education, healthcare, and regional infrastructure consistently receive top-tier resource allocations, aligning with corporate priorities and basic community requirements.

However, to optimize the return on social investment, SAIL should transition from its current compliance-driven input budgeting toward an outcome-based budgeting framework. While the current financial architecture meets the statutory mandates of Section 135 of the Companies Act, 2013, the primary area for corporate improvement lies in long-term impact evaluation. The company should strengthen its project monitoring mechanisms and implement independent, third-party field assessments. Shifting focus from financial expenditure matching to tracking long-term changes in human development indices will help SAIL, Bokaro, maximize its contribution to sustainable development in the region.

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