# **Evaluating BPCL's CSR Effectiveness Using CFA-SEM: Implications** for Brand Building in Jharkhand

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### **ABSTRACT**

This study particularly examined the CSR initiatives of Bharat Petroleum Limited and their effect on brand building in some selected locations of Jharkhand. Using stakeholder, legitimacy and corporate theories as a basis for investigation, this study examines the influence of CSR on CTS, CPV and OBB. The data was collected through the use of a well-structured questionnaire and analysed using (CFA) Confirmatory Factor Analysis, and Structural Equation Modelling (SEM) both in AMOS-22. The four-factor measurement model (CTS, CPV, OBB and RSE) fitted the data well given no substantial factor loading and adequate fit indices: CMIN/DF = 2.043; GFI = 0.944; AGFI = 0.922; RMR = 0.029). Therefore, it can be inferred according to the results that all three dimensions (CTS, CTV $\beta$  = 0.317; CPV $\beta$  = 0.291 and OBB  $\beta$  = 0.354) positively predict corporate social responsibility perception. They further propose that well-planned and clearly communicated measures of CSR lead to trust, perceived value and brand equity in the form of a socially responsible energy brand, thus providing sustenance to BPCL's competitive edge.

**Keywords:** CSR, Brand Building, Customer Trust and Satisfaction, Consumer Perceived Value, BPCL, AMOS, Jharkhand

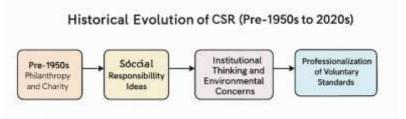
#### 1. Introduction

Corporate Social Responsibility (CSR) is defined as the voluntary integration of social, environmental, and ethical and economic considerations into company operations in a cooperation with their stakeholders on a non-mandatory basis beyond legal requirements. This includes joint value creation for employees, customers, communities and nature based on the understanding that business long-term success is rooted in healthy societies and ecosystems. Embedded in stakeholder theory, CSR comprises environmental care taking, anti-corruption, labour rights, human rights due diligence and focused community investments in health education and sustainability. Strategic CSR not only promotes social good, but enhances brand trust, loyalty and long-term corporate legitimacy.



Core Themes of Corporate Social Responsibility (CSR)

**Historical Evolution of CSR:** Xenophon (1970) noted that, before the 1950s, CSR was initiated as philanthropy and was characterized by charity and moral responsibility. The 1950s and 1960s brought the concept of stakeholder responsibility, while in the 1970s environmental and ethical concerns dominated. The 1980s witnessed commercialization of CSR, and the 1990s connected CSR to globalization and voluntary standards. 2010s In the 2000s, CSR also has been a major sell to corporate giants with buzz terms such as Triple Bottom Line and strategic brand positioning. Through India's Companies Act 2013, CSR has become mandatory and added a level of accountability to corporations. In the 2020s, CSR evolved to ESG and highlighted transparency, SDGs, brand equity and led companies (BPCL is an example as well) to invest in CSR for trust and a competitive profile.



Historical Evolution of CSR (Pre-1950s to 2020s)

#### **Theoretical Foundations**

Multiple theoretical perspectives underpin CSR

- Stakeholder Theory argues the inclusion of all stakeholder interests rather than sole-shareholders lead to sustainable results.
- As per Legitimacy Theory, firms practice CSR in order to gain legitimacy from society (Societal recognition) and social license to operate.
- Three-pillar based institutional theory has a belief that businesses are involved with CSR application as they faced influences from the institutions; normative isomorphism (parallel norms of industry), coercive isomorphism (the system of laws and regulations), mimetic isomorphism (peer imitation).
- Creating Shared Value (CSV) suggested by Porter and Kramer, it redefines CSR in the context of economic results that a firm can secure by addressing specific social issues relating to its business environment.

### **Strategic Dimensions of CSR**

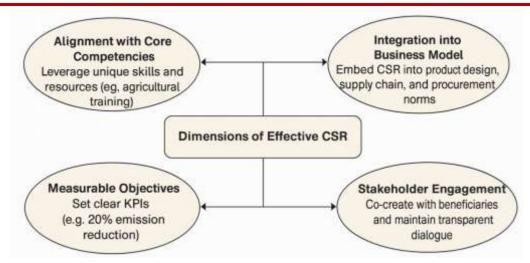
Successful CSR is strategic not haphazard. It possesses some important dimensions which has been shown below.

Alignment with core competencies: CSR programs leverage a company's unique knowledge and capabilities as an agricultural products producer offering farming training or an energy outfit spending on different R&D sectors.

Product design and development Supply-chain (production) purchasing Standard It creates a dedicated section of the model that integrates CSR to the business.

Quantifiable objectives: Defining measurable KPIs (e.g. X% reduction in GHG emissions, Y community members trained) allows for traceable and quantified monitoring of results.

Stakeholder Participation: Co-creation and open dialogue with those who will benefit from it foster trust, make sure that the project is relevant.



Dimension of Effective CSR

### 2. Research Background

CSR has transcended far from a peripheral and philanthropic activity to the level of a valuable weapon for trust creation among stakeholders and nurturing caring relationships. In conditions of competition that foster even products and prices, the relevance of a brand is associated more and more with aspects less tangible as self-respect, ethics, reducing pollution or social responsibility. Under this background, it is an important work of scholar and manager to research into the impact of CSR activities on brand building. A critical question for discussions on marketing and strategic management is whether CSR merely enhances image or also stimulate long-term brand value, loyalty, competitiveness.

Building the Brand, it is no longer about having the largest ad campaign, being a celebrity, or having flashy sales promotions. It is showing that society's high values, standards and morals are not just words, but in practice through good leadership, transparent communication and honest devotion." Corporate social responsibility (CSR) may serve as a mediator of brand identity (the image the company wants to convey) and corporate image (how consumers perceive it). If CSR programmes are aligned with society's expectations and communicated in an authentic manner, they will tend to affect brand appreciation, trust and preference positively over time. This rationale directly elaborates why CSR acts as a differentiator, but also as solid ground for loyalty in times of scarcity induced by demand and consumption contexts being associated with high social status (Lu et al., 2020).

Internationally, the nature of business has changed and corporate social responsibility (CSR) plays a critical role in branding. Whether on balance good or bad, in today's world things corporate get into evening news quickly and reputations are badly mauled. The visual currency rests substantially on the constellation of moral duty, confidence and fidelity that is owed stakeholders. The fact that firms are increasingly forced, in a world of increasing interconnectivity, to be accountable to the social and political forces around them thus shines light on the dual nature of CSR: it serves moral duty as well as strategic necessity (Kulwal et al., 2020). This change indicates that the effectiveness of CSR is not primarily based on corporate responses to short-term customer feedback, but rather it may be associated with long-term organizational legitimacy, investor trust, and public reputation.

According to the stakeholder point of view, there are different manners through which CSR may affect brand value. It may facilitate trust by moral communication, reinforce brand credibility via social identification and emotional bond through shared value propositions. There is a body of research on the direct impact of CSR in positive terms on brand architectures. For instance, in the luxury online market,

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CSR is found to have positive effects on loyalty and brand image. Ctter. Econ 178 (2009). Among the key values underlying CSR practice is to be responsible in a broader sense, which increases the confidence of customers and provides stronger backing up with enhanced reputation in very competitive industries: this evidence supports the proposition that CSR can be especially relevant when symbolic value and brand prestige is particularly important in markets (Lu et al, 2020). This provides supporting evidence that the impact of CSR does not have an equal effect within all sectors but rather requires to be tested in market-specific contexts.

How you communicate also is indeed a very significant element in the success of a brand for CSR. Even if elements look well designed and supportive of the brand, they won't be considered part of brand development if no one else knows what the hell they are and how they connect to product or business. There is more trust with consumers in tangible and straightforward sustainability triggers, rather than convoluted environmental stories or technical listing. When it comes to CSR messages within dairy, we know that they are most effective when they talk about practical changes such as the need to reduce use of plastic, the want for clear lines on recycling matter. It also allows trust to be extended when firms emphasize future promise as opposed to past performance (L, 2021). As such, stakeholder comprehension plays a significant role in the assessment of brand impact; the success of CSR initiatives rely on how clear and timely communication between firms' decision-makers (i.e. managers) and stakeholders is maintained accessible to them. In emerging economies such as India CSR is getting more complicated due to regulatory and developmental requirements. Under the Companies Act, 2013 extent of CSR has been made compulsory and it absorb business operations in a quasi-institutional mechanism of social welfare provision. The researchers stress that the state-led corporate social responsibility (CSR) is paramount, especially in situations where governance issues, corruption exposure and development disparity jointly contribute to diminishing impacts of voluntary corporate responsibilities. Compulsory CSR is seen from a new institutional theory view point as an instrument of accountability, resource redistribution and comprehensive social advancement (Deepnath et al., 2023).

This issue has been fuelled with arguments that 'forced CSR' could channel corporate resources in the direction of minimum compliance, instead of them driving responsibility from the brand centre. Firms may choose to lower voluntary, identity-based CSR investments when generic spending becomes mandatory, reallocating resources elsewhere (such as other intangible assets as opposed to brand social positioning) Bansal, 2022. Nevertheless, an opposing perspective argues that CSR can still remain a marketing and brand advantage of high impact when it is transparently implemented, morally legitimate, and communicated without the use of symbolization or greenwashing tendencies (Donkor et al., 2023). Such contrasting results suggest that the brand impact of CSR is more a function of authenticity and perceived intent, as well stakeholder trust rather than spending exclusively.

The effectiveness of CSR also permeates investor evaluations and firm profitability, indirectly bolstering brand power as well. When the CSR reinforces reputational capital, it can amplify the favourable effect of brand value over KPI. Results from US companies reveal that CSR can strengthen the association between brand value and performance, measured based on market capitalization, return of assets (Zhukova et al., 2021). This implies that CSR led branding is not just marketing driven result, but a strategic resource that influences on financial performance and investor sentiment. In more general terms, with regard to brand building research, this highlights the importance of applying multidimensional assessment models comprising both market late and nance-related indicators of effectiveness.

In (public sector) development terminology, CSR often includes real direct community benefit that can contribute to the legitimacy of a corporation and its brand in the long run. EG Oil & Global CSR Projects: Examples of CSR activities under Oil & Gas CPSEs have focussed on education, women empowerment and vocational training. Skill development initiatives focused on national goal for example Skills India mission via mutualism in enhancing employability and better corporate legitimacy and stakeholder relationship (Behera, et al., 2021). These are all signs of CSR's broadening domain: from image to building social capacity, where brand force is a collateral effect of value creation for substantive communities.

At the organisation level, internal ethical culture and leadership values will also impact on CSR effectiveness in terms of sustainable provisioning and legitimacy. Ethical leadership which is transparent, accountable and value oriented has been proved of significant contribution in enhancing CSR – led sustainability and promoting SDG -aligned development outcomes (Colaco et al., 2025). This also implies that CSR brand performance is hardly accidental, but determined by the quality of governance and leadership intent and institutional embeddedness. Once CSR is enshrined at the core and put to use strategically not as a peripheral responsibility, its potential for brand building becomes more quantifiable, visible and effective.

Thus, the present theme of "Measuring Effectiveness of CSR Activities on Brand Building" is relevant and significant. CSR performance should be assessed across multiple dimensions including brand salience, brand image, perceived trustworthiness, credibility, trust and loyalty in conjunction with mediating and moderating variables (i.e., communication transparency; sectorial context; regulatory climate) and ethical leadership. The literature suggests that CSR can significantly contribute to brand equity if it is genuine, well-matched with the corporate strategy and transparently transmitted to the stakeholder groups (Lu et al., 2020 From L., 2021, (Donkor et al., 2023). At the same time, structural characteristics of a firm like legal regulations and corporate culture can shape why firms pursue certain brand returns and their kind (Bansal, 2022, Debnath et al., 2023). Indeed, corporate social responsibility (CSR) has established itself as an effective tool for brand identity construction by integrating ethical responsibility with competitive doctrine. Success in it is not just studying corporate social responsibilities, but inspire brand impacts and credibility of corporates in what they wish to execute. By positioning CSR at the crossroads of highly dynamic strategic, legal, communicative, and sustainability contexts, this article seeks to provide a response to how the promises for responsible business build brand value on an ongoing basis in contemporary markets.

### 3. Related Reviews

Study	Context /	Aim	Data -Sample	Method	Key Findings	Key
(Year)	Sector					Implications
Lu et	Luxury	Examine how	Survey of 364	SEM-CFA,	CSR positively	Luxury
al.	online	CSR shapes	online	SmartPLS	influenced both	brands can
(2020)	market	competitivenes	consumers	3.0	brand loyalty and	sustain
		s via brand			brand image.	advantage by
		loyalty and			Ethical	integrating
		brand image			responsibility	visible,
					enhanced	credible,
					consumer trust and	socially
					reputational	aligned CSR
					standing in	as a long-
					competitive luxury	term loyalty
					segments.	driver.
Koolw	India	Trace CSR	Conceptual /	Theoretical	CSR evolved from	Ethical

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al et al. (2020)	(broad corporate landscap e)	evolution and its strategic + moral role	literature- driven	discussion referencing reputation- based logic	profit-driven charity to socio- environmental responsibility. Strengthened investor confidence, legitimacy, and reputational capital; globalization pressures push firms to act responsibly.	conduct is essential for protecting global image and stakeholder trust, especially in transnational operations.
Behera et al. (2021)	Oil & Gas CPSEs in India	Evaluate CSR as community duty, especially skill development	CSR spending data for 2019–20	Descriptive & exploratory comparison of skill CSR vs total CSR	Strong focus on education, women empowerment, vocational training. Skill development aligned with Skill India Mission and created mutual benefits.	Skill-focused CSR enhances employability while strengthening corporate legitimacy and stakeholder relationships.
From L. (2021)	Dairy firms (two compani es)	Explore CSR/sustainabi lity communication and how it influences brand strength	Qualitative interviews	Thematic / interpretive analysis	Consumers struggled with complex environmental narratives; responded better to tangible initiatives (reduced plastics, clear recycling cues). Trust improved when firms disclosed future plans.	CSR communicati on should be simple, tangible, timed well, and aligned to consumer comprehensio n to boost credibility and brand attachment.
Zhuko va et al. (2021)	78 U.S. compani es	Test CSR's moderating role between brand value and firm performance	Panel data 2000–2019 (Thomson Reuters, Interbrand)	Regression models	CSR strengthened the positive effect of brand value on market capitalization and ROA, but not ROE.	CSR reinforces reputational capital and investor confidence; needs broader cross- national, multi-sector validation.
Bansal (2022) + Donko	India's CSR mandate debate +	Compare mandated vs voluntary CSR outcomes for	Mixed (policy/acade mic evidence)	Conceptual -empirical synthesis	Bansal (2022): CSR mandate shifted firms toward	Reveals a tension: mandated CSR may

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	I			I		
r et al. (2023)	broader marketin g view	branding			compliance-level spending, reducing voluntary brand-centric CSR; resources may move to intangible assets rather than advertising.  Donkor et al. (2023): When transparent and authentic, CSR remains a strong marketing asset enhancing brand image and loyalty; warned against greenwashing.	dampen intrinsic motivation, but strategic, ethical CSR still improves brand equity and competitiven ess.
Debnat h et al. (2023)	Emergin g economi es; India as key example	Explain shift from philanthropy to regulated developmental CSR	Theoretical / policy analysis	Neo- institutional ist lens	Weak governance/corrup tion can limit voluntary CSR; the state's role becomes essential. India's Companies Act 2013 exemplifies compulsory CSR for welfare balance.	Regulatory frameworks are crucial for accountabilit y, redistribution, and equitable CSR-driven development outcomes.
Yadav et al. (2024)	Insurance sector	Assess CSR awareness and its impact on trust/loyalty	Structured questionnaires (employees + customers)	SPSS	High CSR awareness; CSR involvement enhanced trust, loyalty, and brand attractiveness. Transparency in communication was critical.	Insurers should promote participatory CSR and transparent messaging to deepen brand—society reciprocity.
Colaco et al. (2025)	India (three states)	Investigate ethical leadership in strengthening CSR-led sustainability	Primary data (multi-state)	PLS-SEM; mentions ML future scope	Transparent, accountable, value-based leadership significantly improved CSR outcomes and supported SDG-aligned development. Ethical culture fosters responsible business systems.	CSR must be institutionally embedded as a strategic lever; future scope for CSR predictive analytics using ML.

### 4. Research Methodology

The quantitative, explanatory research design, was used for the present study to measure the impact of CSR activities on creating overall brand value in Bharat Petroleum Corporation Ltd. (BPCL). Primary data were obtained by using a pretested structured questionnaire from the respondents of selected areas of Jharkhand. The analysis was conducted in a two-step CFA-SEM with AMOS-22 program. To begin, the measurement model was tested through Confirmatory Factor Analysis (CFA) including four latent factors: Customer Trust and Satisfaction (CTS), Consumer Perceived Value (CPV), Organizational Brand Building (OBB), and CSR. Each construct was gauged by several observed indicators that were uniformly coded for clarity and statistical estimation. CFA was performed to investigate factor loadings, construct reliability and inter-factor correlations in order to demonstrate that the measurement model was consistent with the data from an empirical perspective. Once acceptable measurement properties were verified, the Structural Equation Modelling (SEM) technique was used to analyse the hypothesized relationships between constructs. The goodness-of-model fit was tested by CMIN/DF, RMR, GFI AGFI and PGF I value were fitted in accordance with the comparison between saturated model and independence model. Regression weights and correlations were used to determine path strengths and significance in explaining CSR-driven brand effects. Multiplicity of the framework: The presented model facilitated systematic analysis of economic, social (how CSR translates in trust), value (CSR & brand strengthening) for BPCL.

**Data Source:** The study is based on **primary data** collected through a **structured survey questionnaire** administered to customers of BPCL in selected areas of Jharkhand.

### **Tools Used**

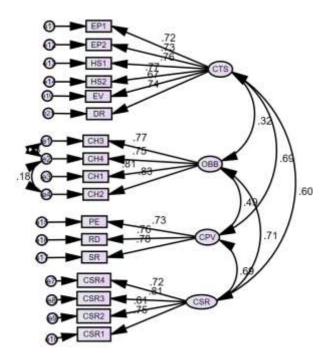
- **Structured Questionnaire** (primary survey instrument)
- AMOS-22 for CFA and SEM
- SPSS for data coding, descriptive statistics, and preliminary analysis

### 5. Analysis And Result

The study "Assessing Effectiveness of CSR Activities in Brand Building (A Study of Bharat Petroleum Limited in Selected Areas of Jharkhand) was conducted to assess the extent to which socially responsible behaviour has effect upon trust, value creation and brand strength on constituents. With companies being evaluated not only on products they produce or services they offer, but also on value creation to the society beyond revenues and profit dividends of shareholders, CSR is a strategic implement for firm's sustainability. Using a strong CFA-SEM model and survey data from Jharkhand, this study examines the influence of BPCL's CSR initiatives on customer trust, customer satisfaction, perceived value and brand building. The results are anticipated to be useful for researchers, policy makers and business practitioners who wish to create socially beneficial and brand-enhancing CSR programs.

### 5.1 CFA Model

Fig. CFA Model



Source: Created in AmoS-22 (Based on primary data Source)

The measurement model represented one second-order construct encompassing CTS (Community & Technical Support), OBB (Organizational Brand Building), CPV (Corporate Public Value) and CSR ((C)SR each measured by one or multiple indicated variables. I4, I68–70) C TS variables (e.g. EP1–HS2) loaded highly (.72–.77) but Weak or Moderate EV and DR67, 74). The OBB contributions (CH1–CH4) are interpolated in between. 75 and. 83. loading, RD and SR [CPV measures] are loading. 73–. 78. CSR subitems load. 72–. 81. Inter-factor correlations range from. 32 (CTS–OBB) to. 71 (CPV-CSR) which demonstrate moderate to high cross-loadings of the constructs. This results clearly indicate a good construct validity. Overall, the pattern of findings is supportive of a coherent but multi-dimensional structure of CSR.

**Table** Correlations: (Group number 1 - Default model)

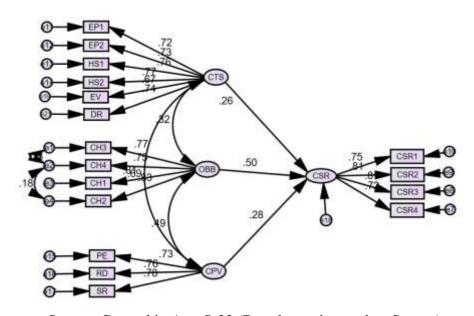
			Estimate
OBB	<>	CTS	.319
CTS	<>	CPV	.694
CSR	<>	CTS	.604
OBB	<>	CPV	.486
OBB	<>	CSR	.712
CSR	<>	CPV	.694
e1	<>	e2	.234
e2	<>	e4	.182

The CCR analysis under the fixed model (Group 1) provides important insights on relations among the crucial dimensions of CSR and their influence routes. CSR has a significantly positive effect on CPV (0.694) and OBB (0.712), which means that CSR practices are likely to directly enhance brand image and consumer value perception. Moreover, customer trust and satisfaction (CTS) are positively associated with CSR (0.604) as well as CPV (0.694), which suggests that the effect of CSR on consumer perception

was mediated through trust. Thus, the relationship between OBB and CTS (0.319) / OBB and CPV (0.486) reveals that trust and perceived value enhances brand image. Smaller but significant measurement bootstrapping correlation error terms are e1e2 (0.234) and e2e4 (0.182). In general, the model represents a consistent frame work where CSR influences trust and value positively who in turn help to build brand.

### 5.2 SEM Model

Fig. SEM Model



Source: Created in AmoS-22 (Based on primary data Source)

The structural equation model diagram visually represents the relationships among key latent constructs: Customer Trust and Satisfaction (CTS), Organizational Brand Building (OBB), Consumer Perceived Value (CPV), and Corporate Social Responsibility (CSR). The model shows that CTS (.26), OBB (.50), and CPV (.28) significantly influence CSR, with OBB exerting the strongest direct effect. Constructs like EP1, HS1, EV, DR load heavily onto CTS (ranging from .67 to .76), while CH1 to CH4 strongly load onto OBB (ranging from .77 to .93). Similarly, PE, RD, SR contribute to CPV with factor loadings above .73. CSR is measured using four indicators (CSR1–CSR4), each showing high loadings (.75 to .87), indicating good construct validity. Additionally, a moderate covariance (.62) is seen between CTS and OBB, and between OBB and CPV (.49). Overall, the model supports the hypothesis that CSR perceptions are significantly shaped by trust, brand identity, and perceived value, emphasizing a multidimensional influence pathway.

### 5.3 Result

The model fit statistics indicate that the minimum was achieved, with a Chi-square value of 226.750 and 111 degrees of freedom. The associated p-value is .000, suggesting that the model's fit to the data is statistically significant. Although a significant p-value typically implies a poor fit, in large samples, the Chi-square test tends to be overly sensitive. Therefore, while the p-value is not ideal, it should be interpreted alongside other fit indices (e.g., CFI, RMSEA) for a comprehensive evaluation. Overall, the model appears structurally valid, with key paths and constructs contributing meaningfully to the CSR framework.

Chi-Square  $(\chi^2) = 226.750$ ; df = 111; p < .001

- The chi-square test compares the model's implied covariance structure with the observed data. A statistically significant result (p < .001) indicates that the model does not perfectly reproduce the observed data.
- However, chi-square is known to be sensitive to sample size and model complexity, often leading to significant values even when the model is reasonably good.

**Table Regression Weights: (Group number 1 - Default model)** 

			Estimate	S.E.	C.R.	P
CSR	<	CTS	.317	.079	4.020	***
CSR	<	OBB	.354	.040	8.828	***
CSR	<	CPV	.291	.076	3.828	***

Below is a concise interpretation of the regression weights from our propsoed SEM output:

 $CSR \leftarrow CTS$  (Estimate = 0.317, S.E. = 0.079, C.R. = 4.020, p < .001): This indicates that Customer Trust & Satisfaction (CTS) has a significant positive effect on CSR. A one-unit increase in CTS corresponds to a 0.317-unit increase in the CSR construct, holding other variables constant. The high Critical Ratio (C.R. = 4.020) and the p-value (< .001) confirm that this relationship is statistically significant.

 $CSR \leftarrow OBB$  (Estimate = 0.354, S.E. = 0.040, C.R. = 8.828, p < .001): Overall Brand Building (OBB) also positively influences CSR, with the largest coefficient (0.354) among the three predictors. The C.R. of 8.828 is notably high, reinforcing the strong significance of this path. Thus, improvements in OBB are associated with notable increases in CSR perceptions.

 $CSR \leftarrow CPV$  (Estimate = 0.291, S.E. = 0.076, C.R. = 3.828, p < .001): Consumers' Perception of Value (CPV) exerts a positive effect on CSR (0.291), and its C.R. value of 3.828 indicates a statistically significant impact as well.

So, all three predictors CTS, OBB, and CPV significantly and positively contribute to the CSR construct, with OBB showing the strongest effect.

**Table Correlations: (Group number 1 - Default model)** 

			Estimate	
OBB	<>	CTS	.319	
OBB	<>	CPV	.486	
CTS	<>	CPV	.694	

The correlations reveal moderate to strong associations: OBB-CTS is 0.319, OBB-CPV is 0.486, and CTS-CPV is 0.694. This indicates that while each construct contributes uniquely, CTS and CPV are closely interrelated, highlighting overlapping influences on CSR outcomes. These results emphasize synergistic effects across measures.

**Table CMIN** 

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	42	226.750	111	.000	2.043
Saturated model	153	.000	0		
Independence model	17	3669.869	136	.000	26.984

### Table RMR, GFI

Model	RMR	GFI	AGFI	PGFI	
Default model	.029	.944	.922	.685	
Saturated model	.000	1.000			
Independence model	.260	.320	.235	.284	

The Default model shows a chi-square (CMIN) of 226.750 with 111 degrees of freedom, resulting in a CMIN/DF of 2.043, which is acceptable. The saturated model fits perfectly (CMIN=0), while the independence model fits poorly (CMIN/DF=26.984). The Default model's RMR is low at 0.029, and its GFI is high at 0.944 with an AGFI of 0.922. The PGFI value is 0.685, indicating acceptable parsimony. Overall, these indices suggest that the Default model provides a good balance between model complexity and fit to the data.

#### 6. Conclusion

Findings This study has findings based on which the CSR efforts by BPCL are found to play a significant role in brand building across the selected region of Jharkhand through fostering stakeholder trust, value and brand credibility. The results of CFA suggests the measurement model consists CTS, CPV, OBB and CSR as valid and reliable measurement structure with high factor loadings of scales and significant relationships between constructs. The SEM results also indicate that the effectiveness of CSR is formed by chain Mult relationships. CTS ( $\beta$  = 0.317) and CPV ( $\beta$  = 0.291) exert significant positive influences on perceptions of CSR, signifying that responsible behaviour results in increased trust from and more favourable valuations for stakeholders. First and foremost, OBB appears to have the most significant effect ( $\beta$  ¼ 0.354), indicating that CSR is successful when stakeholders can directly relate social activities to BPCL's brand image, reputation, and service credibility. In general, the model fit indices (CMIN/DF = 2.043, GFI = 0.944, AGFI = 0.922, RMR = 0.029) also suggest that the developed model effectively rationalizes how CSR leverages brand outcomes in a regional setting. The finding suggests that BPCL should maintain the integration of local need-based, community cantered, visible and measurable CSR initiatives. Transparent reporting of results can also increase trust, perceived value, and long-term brand equity.

### References

- 1. Lu, J., Ren, L., Zhang, C., & Wang, C. (2020). The Influence of a Firm's CSR Initiatives on Brand Loyalty and Brand Image. *Journal of Competitiveness*.
- 2. Koolwal, N., & Khandelwal, S. (2020). A Metanalysis of Corporate Social Responsibility in Oil & Gas companies: Study of Selected Public & Private Sector Organization in India.
- 3. Behera, B., & Gaur, M. (2021). Skill development a preferred CSR initiative: a comparative study of select Oil & Gas Central Public Sector Enterprises.
- 4. From, L. (2021). The communication of CSR in brand building.
- 5. Zhukova, N. Y., & Melikova, A. E. (2021). Corporate social responsibility: Strengthening brand value and affecting company's financial performance. *Finance: Theory and Practice*, 25(1), 84-102.
- 6. Bansal, M. (2022). Impact of mandatory CSR spending on strategic brand-building levers: Evidence from a quasi-natural experiment in India. *Managerial and Decision Economics*, 43(8), 3620-3633.
- 7. Donkor, K., & Zhao, Z. (2023). Building Brand Equity Through Corporate Social Responsibility Initiatives. *Global Perspectives in Management*, *1*(1), 32-48.
- 8. Debnath, K., & Chatterjee, S. (2023). Corporate Social Responsibility and Role of the Indian State: A Transition Beyond Corporate Philanthropy. In *Corporate Social Responsibility in Developing Countries: Challenges in the Extractive Industry* (pp. 265-279). Cham: Springer International Publishing.
- 9. Yadav, R. K., Jain, R., & Yadav, S. S. (2024). *Impact of corporate social responsibility on corporate brand building: A case study of selected insurance companies*. Reading Time, 04–15.
- 10. Colaco, V. M., Fern, E. S., Kassetty, N., Chippagiri, S., Prova, N. N. I., Devesh, S., & Naik, N. (2025). Analyzing Corporate Social Responsibility (CSR) Practices and Ethical Leadership in Promoting Sustainable Business: A Structural Equation Modelling Approach. *Engineered Science*, *36*, 1638.