A Study of Occupational Differences in Community Perceptions of Rural Infrastructure CSR Initiatives of Public Sector Industries in Southern Rajasthan

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1.1 Abstract:

Rural infrastructure initiatives supported through Corporate Social Responsibility (CSR) can shape how communities assess the availability and usefulness of shared facilities. This study examined whether perceptions of rural infrastructure CSR initiatives associated with selected public sector industries in Southern Rajasthan differed among occupational groups. A cross-sectional survey included 220 respondents selected purposively in Udaipur, Rajsamand and Chittorgarh Districts. Eight statements assessed perceptions on a five-point agreement scale; 'Unable to assess / Don't know' responses were excluded from scale computation. The overall perception mean was 3.10 (SD = 0.58), and eight-item complete-case Cronbach's alpha was 0.668. One-way ANOVA did not identify a statistically significant difference across the six occupational categories, $F(5, 214) = 1.27$, $p = 0.279$. The null hypothesis was not rejected. Road connectivity received the highest item mean, while drinking-water facilities received the lowest. These findings describe community perceptions of different infrastructure activities without establishing an occupation-based difference in the composite score or independently verified infrastructure outcomes.

Keywords: Corporate Social Responsibility; rural infrastructure; occupational groups; public sector industries; Southern Rajasthan

1.2 INTRODUCTION

Rural infrastructure influences the lives of rural people by providing public amenities such as paved roads, toilets, and drinking water. CSR initiatives involving rural infrastructure may complement other rural development initiatives, particularly in rural communities near the company's facilities. The views of rural people on the benefits of CSR initiatives involving rural infrastructure are unclear based on descriptions and expenditures for such initiatives. The views of rural people are another source of information about benefits from CSR initiatives involving rural infrastructure.

In Southern Rajasthan, this study examines projects in Udaipur, Rajsamand, and Chittorgarh Districts implemented by RIICO and other agencies, including RSMML. This study examines survey responses about infrastructure and spending by community members rather than observations and reports of infrastructure and spending by researchers. Reasons for this focus: Community members' surveys about infrastructure and spending may differ from observations and reports of infrastructure and spending.

Occupation is one possible factor influencing community views about infrastructure. Agricultural and day laborers may use transportation and other infrastructure differently from other types of workers and household heads. These differences are not evidence that community members have different views about CSR-funded infrastructure projects depending on occupation. Surveys and other studies could help identify differences in views about CSR-funded infrastructure projects among people with different occupations.

The eight-item scale assesses residents' perceptions of infrastructure and other village needs, such as access to and other concerns about the village, including water and sanitation, street lighting, and public buildings, and participation in rural development planning. The eight items on the scale are related but distinct. Administering the same survey to six occupations lets researchers compare descriptive statistics to the results of a statistical test.

The study aims to identify differences in rural attitudes about CSR-related infrastructure projects by occupation within selected public sector industries in Southern Rajasthan. Benefits of the study include information on rural residents' attitudes toward CSR infrastructure projects by occupation in Southern Rajasthan study sites. Benefits to rural residents of Southern Rajasthan study sites related to improvements in infrastructure services were not considered benefits of the study.

1.3 REVIEW OF LITERATURE

Reji (2024) examined rural development initiatives carried out under CSR by a public-sector company. Findings from this study include institutional commitment and stakeholder engagement in CSR initiatives. The Reji study findings are relevant to community engagement in development-related CSR initiatives but do not offer insights into variations in infrastructure perceptions by occupation.

Mohapatra (2023) studied various aspects of the political economy of rural development in public sector CSR programs, including the relationship between program design and local needs. Information about infrastructure needs and other community issues in this source is useful to this case study because lack of infrastructure service use is not the same as lack of infrastructure service access.

Narula, Magray, and Desore (2017) proposed a sustainable livelihoods framework for CSR initiatives in coal mining communities. Suggestions made in the article include tailoring programs to the specific needs and skills of coal mining communities. The article suggests that occupation could be an important factor in designing community programs but offers no evidence that infrastructure needs are assessed differently based on occupation.

Kumar, Gupta, and Das (2022) studied the relationship between CSR activities and community development and resilience in a coal mining community in India. Findings about community development and resilience in this study complement practical considerations in other studies by Reji (2024) and Mohapatra (2023). This study provides fewer details about community outcomes than other studies, including survey results about community members' perceptions of CSR activities to improve infrastructure.

Kulkarni and Aggarwal (2024) examine the subjects and locations of mandatory corporate social responsibility programs in India. Data on these subjects and locations offer some general information about corporate giving in India. More data on geographic distribution of corporate giving would not be enough to understand worker perceptions of infrastructure projects in their communities.

Pachauri and Singh (2013) studied CSR from stakeholder and other demographic viewpoints. In combination with research on local development, these studies suggest potential value of demographic research. These studies do not indicate that occupational differences are likely to arise in the present infrastructure project.

1.3.1 Research Gap

Previous research highlights the importance of public-sector CSR implementation, community needs, livelihoods, stakeholder perceptions and geographical allocation. These strands provide a basis for examining

rural infrastructure initiatives, but do not directly establish whether residents in different occupations in Southern Rajasthan evaluate such initiatives differently. The present study addresses this gap through a common eight-item perception measure and an overall comparison across six occupational categories associated with RIICO and RSMML.

1.4 RESEARCH METHODOLOGY

1.4.1 Research Objective

To compare community perceptions of rural infrastructure development initiatives undertaken through CSR by selected public sector industries in Southern Rajasthan across different occupational groups.

1.4.2 Research Design and Approach

The study adopted a quantitative, cross-sectional, descriptive and comparative survey design. Descriptive statistics summarised the ratings given to the questionnaire statements, while the comparative component tested whether mean overall perception scores differed between the predefined respondent groups. As the observations were cross-sectional, the analysis measured group differences rather than the causal effect of demographic characteristics.

1.4.3 Population and Sample

The target population comprised community respondents, including beneficiaries and non-beneficiaries of CSR initiatives associated with RIICO and RSMML in Udaipur, Rajsamand and Chittorgarh Districts of Southern Rajasthan. The respondent was the unit of analysis. A final sample of 220 respondents was obtained using purposive sampling. As purposive sampling was employed without a probability sampling frame, the findings are not considered statistically representative of the target population.

1.4.4 Sources of Data and Measurement

Primary data obtained through the structured questionnaire provided the empirical evidence. The instrument contained respondent-profile and CSR-benefit questions and eight statements measuring rural infrastructure CSR perceptions. Responses were coded 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. “Unable to assess / Don’t know” was a non-scale response and was treated as missing. The composite score was calculated as the arithmetic mean of valid item responses, subject to a minimum requirement of six valid statements. No reverse scoring was required because all items were positively worded.

1.4.5 Variables and Analytical Groups

The grouping variable was occupation, comprising Agriculture, Salaried employment, Business/self-employment, Daily-wage labour, Homemaker, and Other. The dependent measure was the composite mean of RIP1–RIP8.

1.4.6 Reliability Testing

Table 1.1: Reliability Testing

Construct	Items	Complete-case N	Cronbach’s alpha
Rural Infrastructure CSR Perceptions	8	179	0.668

The eight-item perception measure produced Cronbach’s alpha = 0.668, calculated among 179 respondents with complete item responses. This estimate indicates modest internal consistency and is interpreted cautiously rather than taken as evidence of perfect measurement. No statement was deleted or recoded merely to increase the coefficient.

1.4.7 Statistical Tools and Techniques

Item frequencies, valid response percentages, means and standard deviations were computed for the eight statements. Overall perception scores were compared using one-way ANOVA at $\alpha = .05$. A median-centred Levene test examined equality of variances. Residual normality was also assessed. No post-hoc pairwise comparisons were conducted following the non-significant overall ANOVA result.

1.5 RESPONDENT PROFILE AND PERCEPTION ANALYSIS

Table 1.2: Respondents by Occupation

The distribution of respondents across occupation categories is shown above. The occupational groups consisted of unequal numbers of respondents, reflecting the observed sample distribution. The use of purposive sampling limits population-level inferences from these distributions.

Occupation	Frequency	Percentage (%)
Agriculture	51	23.18
Salaried employment	38	17.27
Business/self-employment	35	15.91
Daily-wage labour	43	19.55
Homemaker	32	14.55
Other	21	9.55

Table 1.3: Likert-Scale Statement Analysis of Rural Infrastructure CSR Perceptions (SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree)

Statement	SD	D	N	A	SA	Valid N	Mean	Std. dev.
RIP1 Rural infrastructure CSR initiatives address important infrastructure needs of local communities.	12	49	81	61	13	216	3.06	0.99
RIP2 CSR-supported road development activities contribute to improved village connectivity.	6	53	71	53	27	210	3.20	1.05
RIP3 Drinking-water facilities developed through CSR are useful to local residents.	22	49	77	51	18	217	2.97	1.10
RIP4 CSR-supported sanitation facilities contribute to improved community living conditions.	16	44	67	64	22	213	3.15	1.10
RIP5 Street lighting and other basic infrastructure initiatives supported through CSR benefit local communities.	20	46	75	52	22	215	3.05	1.11
RIP6 Community buildings and shared public facilities developed through CSR meet local needs.	11	57	69	53	26	216	3.12	1.09

Statement	SD	D	N	A	SA	Valid N	Mean	Std. dev.
RIP7 Rural infrastructure CSR initiatives are planned with appropriate consideration of community requirements.	9	46	78	65	16	214	3.15	0.98
RIP8 Overall, rural infrastructure CSR initiatives contribute positively to rural development in the selected areas.	16	42	86	56	16	216	3.06	1.02

Across the eight statements, mean ratings ranged from 2.97 (RIP3) to 3.20 (RIP2), and the overall perception score averaged 3.10. The strongest item assessment concerned CSR-supported road development and village connectivity, whereas the lowest concerned the usefulness of drinking-water facilities developed through CSR. The variation describes item-level perceptions, not separate significance tests or independently observed differences in infrastructure delivery.

1.5.1 Findings from Likert-Scale Analysis

The comparatively favourable rating of village connectivity suggests that respondents viewed road-related CSR more positively than drinking-water facilities within the particular measures surveyed. Ratings for sanitation, lighting and shared facilities fell between these values. These differences provide a substantive picture of the activities included in the overall scale, while the occupational comparison must be interpreted using the separate ANOVA result.

1.6 GROUP-WISE DESCRIPTIVE COMPARISON

Table 1.4: Rural Infrastructure CSR Perceptions by Occupation

Occupation	Valid N	Mean	Standard deviation
Agriculture	51	3.018	0.658
Salaried employment	38	3.160	0.564
Business/self-employment	35	3.055	0.624
Daily-wage labour	43	3.252	0.551
Homemaker	32	2.974	0.479
Other	21	3.167	0.552

The highest observed mean was 3.252 for respondents engaged in daily-wage labour, compared with 2.974 for homemakers. These are descriptive group averages and do not, on their own, demonstrate a statistically significant occupational difference.

1.7 HYPOTHESIS TESTING

1.7.1 Null Hypothesis

H_{01}: There is no significant difference in perceptions of rural infrastructure CSR initiatives across occupational groups.

1.7.2 Variables Used

The comparison used occupation as the grouping variable and the eight-item rural infrastructure CSR perceptions composite score as the outcome. Cases without a valid composite score were omitted from the inferential test.

1.7.3 Statistical Test Applied

A one-way between-groups analysis of variance compared the predefined demographic categories. Levene's test assessed variance homogeneity and a residual check was used to examine the normality assumption.

Table 1.5: Levene's Test and Residual Normality Check

Diagnostic	Statistic	df	p-value
Levene (median-centred)	1.084	5, 214	0.370
Shapiro–Wilk (pooled residuals)	0.993	220	0.351

Levene's test was not statistically significant, $F(5, 214) = 1.084$, $p = 0.370$, which provided no evidence of unequal group variances. The pooled residual Shapiro–Wilk test yielded $p = 0.351$. These diagnostics support the specified parametric analysis, while respondent independence remains a study-design consideration.

Table 1.6: One-Way ANOVA of Rural Infrastructure CSR Perceptions

Source	Sum of squares	df	Mean square	F	p-value
Between groups	2.150	5	0.430	1.267	0.279
Within groups	72.635	214	0.339	—	—
Total	74.784	219	—	—	—

1.7.4 Results and Interpretation

One-way ANOVA did not identify a statistically significant difference across the occupation categories, $F(5, 214) = 1.267$, $p = 0.279$. The group means ranged from 2.974 to 3.252.

1.7.5 Decision

Since $p = 0.279$ exceeds $\alpha = .05$, the null hypothesis is not rejected.

1.7.6 Finding

The observed differences in rural infrastructure CSR perceptions across the specified occupation groups did not reach statistical significance. The result does not demonstrate equality between groups or rule out more specific differences in individual activities.

1.7.7 Hypothesis Conclusion

The study did not establish a statistically significant difference in rural infrastructure CSR perceptions across occupation groups in the sampled context of Udaipur, Rajsamand and Chittorgarh Districts of Southern Rajasthan.

1.8 FINDINGS OF THE STUDY

The sample comprised 220 respondents, all of whom had valid composite scores for the inferential comparison. The overall perception score averaged 3.102 (SD = 0.584). Respondents gave the highest item

mean to road development and village connectivity (RIP2, 3.200), and the lowest to drinking-water facilities (RIP3, 2.972). Descriptive occupational means ranged from 2.974 among homemakers to 3.252 among daily-wage labour respondents. The one-way ANOVA did not establish a statistically significant overall occupational difference, notwithstanding this observed variation in group averages.

1.9 DISCUSSION

The primary finding is that rural infrastructure CSR perceptions did not differ significantly across the six occupational groups in the approved ANOVA. The spread in group averages was not sufficient relative to within-group variation to reject the null hypothesis. This should not be interpreted as proof that occupational groups experience identical infrastructure access or evaluate every individual initiative in the same way.

The item-level results invite closer attention to differences among forms of infrastructure provision. Perceptions of road development and village connectivity were relatively more favourable than those of drinking-water facilities. This is a contrast between descriptive ratings, not a tested difference in actual service quality. Mohapatra (2023) draws attention to responsiveness to locally identified needs, while Reji (2024) emphasises public-sector implementation and stakeholder engagement. Both perspectives support studying how residents judge particular facilities rather than relying only on aggregate programme descriptions.

The occupational comparison addresses a different question from the relative ranking of individual initiatives. Roads, sanitation, lighting and shared facilities may be used across occupational groups, and any apparent similarity or difference in evaluations remains specific to the survey measure. Narula, Magray and Desore (2017) highlight livelihood context, while Pachar and Singh (2013) support consideration of stakeholder attributes. Together, these strands justify examining occupational variation without presuming that a difference must occur.

Kumar, Gupta and Das (2022) discuss CSR in relation to community development outcomes, whereas the evidence in this paper concerns self-reported evaluations of infrastructure-oriented initiatives. The present study contributes a regionally focused occupational comparison but cannot establish improvements in physical infrastructure, the reasons behind individual ratings or the effect of CSR on livelihoods. Those questions require additional programme-level and outcome evidence.

1.10 OVERALL CONCLUSION

This study assessed public perceptions of corporate social responsibility activities by RIICO and RSMML in rural areas of the Udaipur, Rajsamand, and Chittorgarh Districts. Based on an eight-item survey of 220 respondents, the average public attitude score for the two organizations was 3.102. A one-way ANOVA of six occupational groups did not reveal significant differences in attitudes. The null hypothesis was not rejected.

The survey responses to questions about road and water access are more meaningful beyond comparisons between occupations. Survey data on access to facilities may help evaluate access to these and other facilities in greater depth. Survey data do not demonstrate similar access to facilities among people in different occupations or proven benefits of initiatives to improve access to facilities. Limitations of this study include its focus on survey respondents' evaluations of access to facilities.

1.11 RECOMMENDATIONS

1. CSR infrastructure planning may use occupation-inclusive community consultations to evaluate roads, drinking-water provision, sanitation, lighting and shared facilities without inferring an occupational priority hierarchy from small sample differences.
2. Programme managers may examine maintenance, accessibility and location-specific use of individual facilities alongside overall perception ratings.

3. RIICO and RSMML-related CSR reporting may distinguish residents' views from independently verified information on the facilities delivered and their current condition.
4. Future survey designs may combine occupational grouping with village-level service access, allowing more detailed investigation of where infrastructure needs remain.

1.12 LIMITATIONS OF THE STUDY

The study used purposive sampling in Udaipur, Rajsamand and Chittorgarh Districts of Southern Rajasthan, so its estimates should not be regarded as statistically representative of all community residents or industries. The data are cross-sectional, self-reported perceptions rather than independent verification of CSR expenditure, programme delivery or realised development outcomes. The eight-item scale showed modest internal consistency (Cronbach's alpha = 0.668); the composite result is consequently interpreted with appropriate caution.

1.13 SCOPE FOR FUTURE RESEARCH

Future work could expand the geographical and respondent coverage using a specified sampling frame, where feasible. Analyses of particular rural infrastructure CSR activities alongside objective programme-delivery indicators may clarify whether aggregate perceptions correspond to lived access or independently verified outcomes. A longitudinal design could track changes in attitudes, while focused qualitative interviews could explore why participants in different occupation categories evaluate CSR activities as they do.

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