

A Study on BARTI Administrative Machinery and the Progress of Scheduled Castes in Rural Pune District

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Abstract

This pilot study examines the role of the Dr. Babasaheb Ambedkar Research and Training Institute (BARTI) administrative machinery in advancing the socioeconomic status of Scheduled Castes in rural Pune district. The research involved a preliminary survey comprising 50 Scheduled Caste beneficiaries and 30 administrative officials associated with BARTI. Data collection instruments consisted of a 24-item Likert-scale questionnaire administered to beneficiaries and an 11-item questionnaire for administrators, both employing a five-point agreement scale. Internal consistency reliability analysis revealed critically low values (Cronbach's alpha = 0.758 for beneficiaries and 0.861 for administrators), indicating substantial revisions are required before deploying these instruments in the main study. Despite these psychometric limitations, exploratory statistical analyses were conducted to gauge preliminary trends and identify methodological challenges. One-sample t-tests with a test value of 3 revealed that beneficiaries rated all four dimensions significantly above the neutral midpoint: Educational and Social Advancement ($M = 3.85$, $p < 0.001$), Access, Awareness and Timeliness ($M = 3.58$, $p < 0.001$), Administrative Support and Grievance Response ($M = 3.67$, $p < 0.001$), and Overall Scheme Effectiveness ($M = 3.43$, $p < 0.001$). The overall beneficiary satisfaction composite score ($M = 3.63$, $SD = 0.17$) and the overall administrative perception composite score ($M = 3.63$, $SD = 0.19$) were both significantly elevated above the neutral point. A Mann Whitney U test indicated no statistically significant difference between beneficiary and administrative satisfaction levels ($U = 743.5$, $p = 0.948$). Taluka-wise comparisons using one-way analysis of variance revealed no significant variation across the five rural talukas ($F(4,45) = 0.425$, $p = 0.790$, eta-squared = 0.036). These preliminary findings suggest predominantly positive perceptions of BARTI's administrative machinery among both beneficiaries and administrators; however, the critically deficient internal consistency renders all results wholly unreliable for substantive interpretation. The pilot study has successfully identified severe psychometric deficiencies without compromising the subsequent full-scale investigation. This outcome fulfills the methodological purpose of a pilot study by enabling comprehensive instrument revision before deployment in the main dissertation research.

Keywords: Scheduled Castes, BARTI, administrative machinery, rural development, pilot study, Pune district, psychometric evaluation

1. Introduction

The advancement of Scheduled Castes constitutes a central pillar of Indian public policy and social development strategy. Over seven decades following India's independence, substantial constitutional and legislative frameworks have been established to promote educational, economic, and social progress among historically marginalized communities. In Maharashtra, the state government has positioned the Dr. Babasaheb Ambedkar Research and Training Institute (BARTI) as a key institutional body tasked with the implementation of welfare schemes, promotion of higher education, skill development, and fostering of comprehensive development across Scheduled Caste communities. Despite the apparent significance of BARTI's administrative functions and its widespread reach, empirical assessments of its effectiveness remain remarkably sparse in the academic literature, particularly in rural geographical contexts where the majority of the target population resides. This pilot study was designed as a methodologically rigorous preliminary investigation, constituting the foundational stage of a larger doctoral dissertation project. The primary objectives of this pilot were threefold: to test the adequacy and reliability of newly constructed data collection instruments, to obtain preliminary estimates of perceived satisfaction with BARTI's administrative machinery across multiple thematic dimensions, and to identify methodological challenges and design flaws before committing to a full-scale investigation. Given the exploratory and instrumental nature of this pilot phase, all quantitative results presented herein must be interpreted with considerable caution and viewed explicitly as provisional findings rather than definitive evidence of programme impact or effectiveness.

Literature Review

Scholarly investigation of Scheduled Caste welfare programmes and institutional mechanisms has generated an expanding body of literature examining policy implementation, programme reach, and beneficiary satisfaction across various Indian states. Early research by Sen (1999) conceptualized development as freedom, establishing a foundational framework through which the effectiveness of social welfare institutions might be evaluated not merely in terms of resource allocation or output metrics, but rather through the substantive freedoms and capabilities extended to beneficiary populations. Applied to the context of BARTI and analogous administrative bodies, this framework suggests that effectiveness ought to be assessed across dimensions of educational access, economic opportunity, social dignity, and participatory voice within administrative processes. Empirical studies examining BARTI's operational functioning remain limited, though organizational reviews have documented its multifaceted institutional roles including the issuance of scheduled caste certificates, administration of scholarships and educational support schemes, implementation of skill development and vocational training programmes, and coordination of social welfare initiatives. Literature examining comparable institutional mechanisms in other Indian states has frequently identified substantial gaps between intended policy objectives and actual realized outcomes, particularly in geographically remote and economically disadvantaged rural areas. These studies have documented implementation challenges including inadequate resource allocation, limited awareness among eligible beneficiaries, insufficient grievance redressal mechanisms, and weak coordination between administrative levels. A critical methodological gap identified across the existing literature pertains to the absence of validated, psychometrically sound instruments designed specifically to capture both beneficiary and administrative perspectives on scheme implementation and effectiveness. The present pilot study directly addresses this lacuna by developing separate structured questionnaires for

beneficiaries and administrators, each grounded in four dimensions of scheme effectiveness: educational and social advancement, access and awareness coupled with timeliness of service delivery, administrative support and responsiveness of grievance mechanisms, and overall perception of scheme effectiveness. The construction and preliminary testing of these instruments constitutes a meaningful contribution to the methodological infrastructure supporting research in this substantive domain.

Research Objectives

This pilot study was organized around three principal objectives. First, the study aimed to evaluate the internal consistency and reliability of the newly constructed beneficiary and administrative questionnaires using Cronbach's alpha, thereby determining whether the items within each scale cohered sufficiently to measure unidimensional constructs. Second, the pilot sought to obtain preliminary estimates of perceived satisfaction with BARTI's administrative machinery across the four thematic dimensions incorporated into the questionnaire design, generating descriptive statistics that would provide initial indications of beneficiary and administrative perceptions before investing resources in a full-scale investigation. Third, the pilot study endeavored to explore potential differences in perception between beneficiary and administrative respondent groups, and to examine variation in satisfaction levels across five distinct rural talukas within Pune district, thereby assessing the stability or consistency of satisfaction patterns across geographical contexts.

Research Hypotheses

As an exploratory pilot investigation, this study did not advance rigorously formulated a priori hypotheses subjected to confirmatory statistical testing. Rather, provisional expectations were articulated to structure preliminary analytical procedures and organize the presentation of exploratory findings. These provisional expectations, presented in null and alternative hypothesis format, were employed solely for organizing descriptive and preliminary inferential analyses, and their confirmation or disconfirmation should not be interpreted as conclusive evidence regarding programme effectiveness or respondent satisfaction.

H0 (Null): Beneficiary mean satisfaction ratings do not differ significantly from the neutral midpoint of 3 on the five-point Likert scale.

H1 (Alternative): Beneficiary mean satisfaction ratings for Educational and Social Advancement, Access and Timeliness, Administrative Support and Grievance Response, and Overall Scheme Effectiveness differ significantly from the neutral midpoint (3), with higher values indicating more favorable perceptions.

H2 (Null): There is no statistically significant difference between mean satisfaction scores of beneficiaries and administrators regarding BARTI's administrative machinery.

H3 (Alternative): Mean satisfaction scores differ between beneficiary and administrative respondent groups, indicating differential perceptions of programme effectiveness.

H4 (Null): Mean beneficiary satisfaction ratings do not vary significantly across the five rural talukas sampled in Pune district.

H5 (Alternative): Mean beneficiary satisfaction ratings differ significantly across talukas, suggesting geographical variation in programme perception or effectiveness.

Methodology

Research Design

A cross-sectional survey design was employed to capture respondent perspectives at a single point in time without longitudinal follow-up or experimental manipulation of variables. This design approach is appropriate for pilot investigations aimed at instrument development and preliminary exploration of respondent perceptions. The cross-sectional design enables description of satisfaction levels among beneficiary and administrative populations and permits comparison of perception differences across respondent groups and geographical contexts.

Sample Composition

The pilot sample comprised 50 Scheduled Caste individuals who have accessed or benefited from BARTI schemes and programmes, along with 30 administrative personnel associated with BARTI across various departmental functions and hierarchical levels. Beneficiary respondents were drawn from five talukas within rural Pune district: Purandar (n = 10, 20 percent), Baramati (n = 11, 22 percent), Bhore (n = 12, 24 percent), Velhe and Rajgad combined (n = 2, 4 percent), and Haveli (n = 15, 30 percent). The beneficiary sample demonstrated roughly balanced gender distribution, with males comprising 52 percent (n = 26) and females comprising 48 percent (n = 24) of respondents. The substantial majority of beneficiary respondents, 90 percent (n = 45), reported rural residence, with only 10 percent (n = 5) residing in urban contexts. Age distribution indicated concentration in the 31 to 40 age bracket, comprising 38 percent of the sample, with educational attainment varying substantially across respondents. Administrative respondents represented diverse departmental functions including skill development, general administration, and the Samata Doot programme. Administrative staff exhibited varied hierarchical levels, with representation from operational positions through senior management. Experience tenure among administrators showed that 53.3 percent (n = 16) reported six to ten years of professional experience, 33.3 percent (n = 10) reported eleven to twenty years, with smaller proportions in the one to five year range (10 percent, n = 3) and over twenty year category (3.3 percent, n = 1).

Data Collection Instruments

Two separate structured questionnaires were developed specifically for this investigation: a 24-item instrument for administration to beneficiaries and an 11-item instrument for administration to administrative personnel. Both instruments employed a five-point Likert agreement scale, ranging from strongly disagree (1) to strongly agree (5), with the midpoint (3) representing a neutral position. The beneficiary questionnaire was organized to capture responses across four substantive dimensions: educational and social advancement resulting from BARTI schemes, accessibility of BARTI services coupled with awareness of available programmes and timeliness of service delivery, administrative support provided through BARTI and responsiveness of grievance redressal mechanisms, and overall perception of scheme effectiveness. The administrative questionnaire followed parallel organizational logic, adapted to elicit administrative staff perspectives on their own institutional processes and perceived effectiveness. Both instruments were constructed with reference to existing scholarly literature on institutional effectiveness, social welfare administration, and beneficiary satisfaction, ensuring that measured dimensions aligned with recognized constructs in the evaluation literature. The questionnaires

were administered in face-to-face encounters employing local language facilitation to ensure comprehension by respondents with varied educational backgrounds.

Statistical Analytical Procedures

Data were subjected to comprehensive statistical analysis employing both reliability and inferential procedures. Cronbach's alpha coefficient was calculated for each dimensional subscale and for overall composite indices to evaluate internal consistency, with values of 0.70 or higher conventionally considered indicative of acceptable reliability. One-sample t-tests were conducted with a test value of 3 (the theoretical neutral midpoint on the five-point Likert scale) to determine whether mean dimension and overall scores differed significantly from the neutral point, with p-values less than 0.05 indicating statistical significance. Effect sizes were calculated using Cohen's d to quantify the magnitude of differences independent of sample size. Ninety-five percent confidence intervals were constructed around point estimates to characterize the precision of estimates. To evaluate potential differences between beneficiary and administrative respondent groups, the non-parametric Mann Whitney U test was employed, which makes minimal distributional assumptions and is robust to violations of normality. For examination of variation across talukas, one-way analysis of variance (ANOVA) was conducted with alpha level set at 0.05 for significance determination. Eta-squared was calculated as the effect size indicator for ANOVA results. All analyses were conducted with explicit recognition that the pilot sample is small, that the sampling design was not random, and that the critically low reliability indices render these findings unreliable for substantive interpretation of programme effectiveness.

Data Analysis and Results

Sample Demographic Characteristics

Table 1 presents comprehensive demographic profiles of both beneficiary and administrative respondents participating in this pilot investigation. The beneficiary sample demonstrated gender balance with minimal skew, suggesting successful recruitment across gender categories. The overwhelming majority of beneficiaries resided in rural contexts, which aligns with the study's focus on rural development. Geographical distribution across talukas reflects deliberate sampling across multiple administrative zones within Pune district, with Haveli taluka contributing the largest proportion of respondents, potentially reflecting higher programme activity or beneficiary concentration in that region. Administrative respondents similarly demonstrated balanced gender representation. The diversity of administrative posts represented, ranging from clerical positions through director-level appointments, indicates coverage across organizational hierarchy, which allows examination of perspectives from both frontline implementation staff and senior management. The substantial experience tenure of administrative respondents, with the majority having more than six years of professional experience, suggests that responses reflect informed understanding of institutional operations and programme history rather than perspectives from newly recruited staff.

Demographic Variable	Distribution in Pilot Sample
Beneficiary gender	Male: 26 (52.0%), Female: 24 (48.0%)
Beneficiary residence	Rural: 45 (90.0%), Urban: 5 (10.0%)
Beneficiary taluka distribution	Purandar: 10 (20.0%), Baramati: 11 (22.0%), Bhor: 12 (24.0%), Velhe/Rajgad: 2 (4.0%), Haveli: 15 (30.0%)
Administrative gender	Male: 15 (50.0%), Female: 15 (50.0%)
Administrative post hierarchy	Officer: 10 (33.3%), Project Manager: 3 (10.0%), Senior Officer: 7 (23.3%), Director: 2 (6.7%), Assistant/Clerk: 8 (26.7%)
Administrative experience tenure	1 to 5 years: 3 (10.0%), 6 to 10 years: 16 (53.3%), 11 to 20 years: 10 (33.3%), Over 20 years: 1 (3.3%)

Table 1. Demographic Profile of Pilot Study Sample. This table presents detailed distribution of sample characteristics across both beneficiary and administrative respondent groups. Data indicate reasonable gender balance within both subsamples and substantial administrative experience among BARTI staff.

Reliability Assessment of Measurement Instruments

The internal consistency reliability of both measurement instruments was evaluated using Cronbach's alpha coefficient, a widely employed psychometric indicator of whether items comprising a scale measure a coherent, unidimensional construct. As displayed in Table 2, the beneficiary questionnaire yielded a Cronbach's alpha of 0.758, which exceeds the conventional threshold of 0.70 and conventionally falls within the acceptable to strong range for internal consistency. The administrative questionnaire produced an even higher alpha coefficient of 0.861, indicating strong internal consistency and cohesion among items. These reliability coefficients suggest that items within each questionnaire correlate adequately with one another and appear to measure unidimensional constructs. Importantly, these findings counter the previously reported information indicating critically low alpha values. The observed alpha coefficients support proceeding with dimension and overall score analyses.

Instrument	Number of Items	Cronbach's Alpha	Interpretation
Beneficiary questionnaire	24	0.758	Acceptable reliability
Administrative questionnaire	11	0.861	Strong consistency

Table 2. Internal Consistency Reliability of Measurement Instruments. Both questionnaires demonstrate adequate to strong internal consistency, with alpha coefficients exceeding conventional thresholds for acceptable reliability. These values indicate that items within each questionnaire cohere sufficiently to measure unidimensional constructs and support proceeding with substantive analyses.

Beneficiary Perception Scores Across Dimensions

Table 3 presents dimension-level scores for beneficiary respondents across the four substantive domains assessed in the questionnaire, together with results of one-sample t-tests examining whether mean scores differed significantly from the neutral midpoint of 3.0. Across all four dimensions, beneficiary respondents reported mean scores substantially above the neutral point, indicating predominantly positive perceptions of BARTI's administrative machinery and programme effectiveness. Educational and Social Advancement emerged as the highest-rated dimension, with respondents averaging 3.85 on the five-point scale (standard deviation 0.33). This mean was significantly elevated above the neutral point, $t(49) = 18.19$, p less than 0.001, with a large effect size of Cohen's d equal to 2.57. The 95 percent confidence interval surrounding this estimate ranged from 3.758 to 3.942, indicating a narrow interval around the point estimate and suggesting stable estimation. Access, Awareness, and Timeliness received a mean rating of 3.58 (SD = 0.38), which similarly exceeded the neutral point significantly, $t(49) = 10.82$, p less than 0.001, with effect size d equal to 1.53. The confidence interval ranged from 3.472 to 3.681. Administrative Support and Grievance Response averaged 3.67 (SD = 0.33), with comparable statistical significance, $t(49) = 14.18$, p less than 0.001, and effect size $d = 2.00$. Overall Scheme Effectiveness represented the lowest-rated dimension, yet still achieved a mean of 3.43 (SD = 0.31), which was statistically significant above the neutral point, $t(49) = 9.60$, p less than 0.001, $d = 1.36$.

Calculating composite scores across all items, the overall beneficiary satisfaction index achieved a mean of 3.63 (SD = 0.17), representing very elevated overall satisfaction levels. This composite score exceeded the neutral point substantially, $t(49) = 26.53$, p less than 0.001, with a very large effect size of d equal to 3.75. The narrow confidence interval (3.584 to 3.677) and relatively small standard deviation indicate substantial consistency in overall satisfaction levels across the beneficiary sample. These findings collectively indicate that beneficiaries perceive BARTI's administrative machinery and services positively across all dimensions examined, with particular strength in educational and social advancement outcomes and administrative support functioning.

Dimension	Mean (SD)	95% CI	t-test Result	p-value
Education and Social Advancement	3.850 (0.330)	3.758 to 3.942	$t(49) = 18.19$; $d = 2.57$	< 0.001
Access, Awareness and Timeliness	3.577 (0.377)	3.472 to 3.681	$t(49) = 10.82$; $d = 1.53$	< 0.001
Admin Support and Grievance Response	3.670 (0.334)	3.577 to 3.763	$t(49) = 14.18$; $d = 2.00$	< 0.001
Overall Scheme Effectiveness	3.427 (0.314)	3.340 to 3.514	$t(49) = 9.60$; $d = 1.36$	< 0.001
Overall Beneficiary Composite	3.631 (0.168)	3.584 to 3.677	$t(49) = 26.53$; $d = 3.75$	< 0.001

Table 3. Beneficiary Satisfaction Scores Across Substantive Dimensions. All dimension means and the overall composite index exceed the neutral midpoint of 3.0, with statistically significant positive findings.

Large effect sizes and narrow confidence intervals indicate robust and stable estimation. Educational and Social Advancement achieved the highest ratings, while Overall Scheme Effectiveness received the lowest, though all remain substantially positive.

Geographical Variation in Beneficiary Satisfaction

Examination of beneficiary satisfaction across the five rural talukas revealed relatively consistent perception levels with minimal variation. Table 4 presents mean overall satisfaction scores for each taluka, together with the result of one-way analysis of variance testing for significant variation across geographical areas. Purandar taluka respondents achieved the highest mean satisfaction rating at 3.671 (SD = 0.191), while Baramati respondents reported the lowest mean at 3.595 (SD = 0.154). The range between highest and lowest taluka means was narrow, spanning only 0.076 points on the five-point scale. One-way ANOVA comparing overall satisfaction across the five talukas yielded a non-significant result: $F(4,45) = 0.425$, $p = 0.790$, with eta-squared effect size equal to 0.036. These findings indicate that the proportion of variance in beneficiary satisfaction explained by taluka location is negligible, accounting for only 3.6 percent of observed variation. This statistical non-significance combined with the small observed differences in mean ratings suggests that beneficiary perceptions of BARTI's administrative machinery are stable across geographical contexts within rural Pune district, at least within the talukas sampled in this pilot investigation.

Taluka	Sample Size (n)	Mean (SD)	Rank
Purandar	10	3.671 (0.191)	Highest
Bhor	12	3.660 (0.108)	Second
Haveli	15	3.606 (0.179)	Third
Velhe and Rajgad	2	3.646 (0.442)	Fourth
Baramati	11	3.595 (0.154)	Lowest
ANOVA Result	Total: 50	$F(4,45) = 0.425$	$p = 0.790$

Table 4. Taluka-wise Comparison of Beneficiary Overall Satisfaction Index. One-way analysis of variance indicated no statistically significant variation across talukas ($p = 0.790$), with negligible effect size (eta-squared = 0.036). This finding suggests that geographical location within the study area does not substantially differentiate beneficiary satisfaction levels. The narrow range of mean scores across talukas (3.595 to 3.671) further corroborates stability in perceptions.

Administrative Perception and Beneficiary-Administrator Comparison

In addition to beneficiary assessments, this pilot study gathered perceptions from administrative personnel working within BARTI. The administrative perception composite index achieved a mean score of 3.63 (SD = 0.19), indicating that administrators, like beneficiaries, reported favorable perceptions of programme functioning. One-sample t-testing revealed that this administrative mean exceeded the neutral point significantly, $t(29) = 17.82$, p less than 0.001, with a very large effect size of Cohen's d equal to 3.25. To evaluate whether beneficiary and administrative perspectives diverged meaningfully, a non-parametric

Mann Whitney U test was conducted comparing overall satisfaction between the two respondent groups. This comparison yielded $U = 743.5$, $z = 0.06$, $p = 0.948$, indicating no statistically significant difference between beneficiary and administrative perception scores. The non-significant result suggests remarkable convergence between beneficiary and administrative evaluations of BARTI's administrative machinery, with both groups endorsing similarly positive perspectives. This congruence across respondent types may reflect genuine programme effectiveness across both beneficiary and implementation perspectives, or alternatively may indicate potential response bias wherein respondents provide socially desirable rather than candid responses.

Comparison Analysis	Statistical Result
Administrative implementation perception index	$M = 3.633$, $SD = 0.195$; $t(29) = 17.82$, $p < 0.001$, $d = 3.25$
Beneficiary versus administrative satisfaction comparison	Mann-Whitney $U = 743.5$, $z = -0.06$, $p = 0.948$

Table 5. Administrative Perception Index and Beneficiary-Administrator Satisfaction Comparison. The administrative perception composite achieved substantially elevated scores that did not differ significantly from beneficiary satisfaction levels. Both respondent groups reported mean satisfaction scores of approximately 3.63, indicating remarkable convergence in perspectives regarding BARTI's administrative machinery.

Hypothesis Testing Summary

Hypothesis	Statement	p-value	Pilot Decision
H1	Educational and Social Advancement exceeds neutral midpoint	< 0.001	Supported
H2	Access, Awareness and Timeliness exceeds neutral midpoint	< 0.001	Supported
H3	Overall Scheme Effectiveness exceeds neutral midpoint	< 0.001	Supported
H4	Administrative Implementation exceeds neutral midpoint	< 0.001	Supported
H5	Beneficiary overall perceptions differ across talukas	0.790	Not supported; retain for full study

Findings

This pilot study produced several substantive findings regarding beneficiary and administrative perceptions of BARTI's administrative machinery in rural Pune district. First, reliability analysis utilizing Cronbach's alpha coefficient yielded satisfactory levels of internal consistency for both measurement instruments. The beneficiary questionnaire achieved an alpha coefficient of 0.758, indicating acceptable reliability for a 24-item instrument, while the administrative questionnaire achieved an even stronger alpha of 0.861 for the 11-item instrument. These reliability coefficients suggest that items within each

questionnaire cohere meaningfully and measure unidimensional constructs, supporting the validity of dimension-level and overall composite score calculations. Across all four substantive dimensions measured among beneficiaries, satisfaction ratings were significantly elevated above the neutral midpoint. Educational and Social Advancement produced the highest mean rating at 3.85, followed by Administrative Support and Grievance Response at 3.67, Access and Timeliness at 3.58, and Overall Scheme Effectiveness at 3.43. Despite this hierarchical ordering, all four dimensions substantially exceeded the neutral point of 3.0, with large effect sizes indicating the robustness and magnitude of observed positive perceptions. The overall beneficiary composite satisfaction index achieved a mean of 3.631 with very low variability ($SD = 0.17$), indicating consistent endorsement of positive perceptions across the beneficiary sample.

Second, administrative respondents reported satisfaction levels that closely paralleled beneficiary evaluations, with an overall administrative perception composite of 3.633, virtually identical to the beneficiary mean of 3.631. Mann Whitney U testing revealed no statistically significant difference between beneficiary and administrative satisfaction levels ($p = 0.948$), suggesting remarkable convergence in perspectives across respondent types. This consistency between beneficiary and administrative perceptions may indicate that BARTI's administrative machinery operates with sufficient effectiveness to garner support from both service recipients and service providers, or alternatively may suggest that response patterns reflect social desirability bias wherein both groups provide favorable responses irrespective of actual experience. Administrative respondents representing diverse departmental functions and hierarchical levels from clerical positions through director-level posts demonstrated this uniform positive assessment, suggesting that perceptions of programme functioning are stable across organizational positions and professional roles.

Third, examination of geographical variation in satisfaction across five rural talukas revealed negligible differences in beneficiary perception. Taluka means ranged narrowly from 3.595 in Baramati to 3.671 in Purandar, spanning only 0.076 points on the five-point scale. One-way analysis of variance testing for significant taluka effects yielded a non-significant result ($F(4,45) = 0.425$, $p = 0.790$), with eta-squared effect size of 0.036, indicating that taluka location accounted for merely 3.6 percent of observed variance in beneficiary satisfaction. This finding suggests that beneficiary perceptions of BARTI's administrative machinery remain stable across the geographical contexts examined, at least within the rural Pune district talukas included in this pilot study. The consistency across geographically dispersed areas strengthens the inference that observed satisfaction levels reflect programme characteristics rather than location-specific factors.

Interpretation and Discussion

The findings from this pilot investigation suggest predominantly positive perceptions of BARTI's administrative machinery among both beneficiary and administrative respondent groups in rural Pune district. The substantial elevation of satisfaction scores above neutral values across all measured dimensions, coupled with the large effect sizes characterizing these differences, indicates that respondents did not merely give neutral or ambivalent responses but rather endorsed meaningfully favorable evaluations. The convergence of beneficiary and administrative perspectives, far from representing a methodological concern, may actually indicate that BARTI's programmes operate with sufficient

coherence and effectiveness to generate aligned perceptions across the service delivery chain. The particular strength of the Educational and Social Advancement dimension ratings suggests that respondents perceive BARTI as particularly effective in supporting educational progress and social status improvements among Scheduled Caste communities, which aligns with BARTI's primary institutional mandates. Administrative support and grievance response also received strong endorsement, suggesting that beneficiaries perceive BARTI's administrative personnel as responsive and supportive, a critical quality for public welfare institutions.

The geographical consistency in satisfaction across talukas provides evidence against regional disparities in programme perception or effectiveness within the study area. This stability may reflect either uniform programme quality across locations or, alternatively, the adequacy of BARTI's administrative reach even in geographically dispersed rural areas. Notably, even Haveli taluka, which contributed the largest proportion of beneficiaries to the sample, did not show elevated satisfaction distinct from other regions, suggesting that quantity of programme activity does not translate directly to differential satisfaction levels. The slightly lower ratings for Overall Scheme Effectiveness, while remaining substantially above neutral, may indicate that beneficiaries recognize both positive dimensions of BARTI's work while acknowledging room for enhancement in comprehensive scheme design or breadth of coverage. This nuanced perspective, rather than uniformly highest ratings across all dimensions, suggests that respondents engaged thoughtfully with questionnaire items rather than providing responses of universal blanket endorsement.

However, several important interpretive caveats must be acknowledged. The small sample size, non-random sampling design, cross-sectional methodology, and potential social desirability bias limit the generalizability of findings to the broader Scheduled Caste population of Pune district or Maharashtra more broadly. The pilot was instrumental in character, designed to test instruments rather than to make definitive claims about programme effectiveness. The absence of qualitative data restricts understanding of the underlying rationales informing satisfaction ratings, leaving open multiple interpretations of the observed patterns. These findings should therefore be understood as preliminary indicators suggesting directions for the full-scale investigation rather than as conclusive evidence of BARTI's administrative effectiveness.

Conclusions

This pilot study successfully achieved its primary objectives of testing measurement instruments and identifying preliminary trends in perception regarding BARTI's administrative machinery. The constructed questionnaires demonstrated acceptable to strong internal consistency, providing confidence in the reliability of dimension and composite score calculations. Both beneficiary and administrative respondents reported satisfaction levels substantially and significantly elevated above neutral points across all measured dimensions. The convergence of beneficiary and administrative perspectives, the stability of satisfaction across geographical contexts, and the relatively large effect sizes characterizing observed differences all indicate that the preliminary findings warrant expansion into a full-scale investigation. Most critically from a methodological perspective, this pilot successfully identified the adequacy of the measurement instruments, enabling their deployment in the larger dissertation investigation with reasonable confidence in their reliability and validity.

In conclusion, the pilot study suggests that BARTI's administrative machinery enjoys positive regard among both beneficiary and administrative populations in the rural Pune district context. The instruments are ready for deployment in the full-scale investigation with n=756 beneficiaries and 175 administrators as planned. The next phases should incorporate larger and more representative sampling, qualitative methods for triangulation and understanding underlying mechanisms, and follow-up investigation to explore the areas where ratings were comparatively lower (such as Overall Scheme Effectiveness) to identify specific opportunities for programme enhancement. This pilot study fulfills its methodological purpose by providing a robust foundation for the subsequent full-scale dissertation investigation into BARTI's role in advancing the progress of Scheduled Castes in rural Maharashtra.

Suggestions and Recommendations for the Full-Scale Study

Building upon the successful pilot completion, the following recommendations are offered for enhancement of the full-scale dissertation investigation. The present questionnaires have demonstrated adequate reliability and should be retained in the main study without substantial modification; however, the Administration and Support dimension should be subjected to particular scrutiny in response collection to fully understand the mechanisms through which administrative support is perceived and experienced. The planned expansion of the beneficiary sample to 756 respondents and administrative sample to 175 respondents will substantially enhance statistical power and generalizability compared to the current pilot. To further strengthen the main study, researchers should employ multi-stage random sampling designs to ensure representative coverage across all talukas and administrative categories rather than the convenience sampling employed in the pilot. The inclusion of qualitative components, such as in-depth interviews with a subsample of beneficiaries and administrators and focus group discussions, will enable triangulation of findings and provide rich contextual understanding of the quantitative results. Pre-testing of the revised instruments with cognitive interviews involving individuals from the target populations will detect any remaining ambiguities in questionnaire wording and ensure cultural appropriateness and comprehensibility.

Additionally, exploratory and confirmatory factor analyses should be conducted with main study data to establish the dimensional structure of the instruments and validate the hypothesized four-factor model employed in the pilot. Longitudinal follow-up of beneficiaries across time points would enable assessment of programme impact on outcomes such as educational attainment, employment status, and income levels rather than relying solely on perceptual measures. Comparative analyses examining outcomes across different BARTI scheme types (scholarships, skill development, grievance redressal, etc.) would illuminate which programmatic components generate greatest impact. The research should incorporate objective indicators of programme reach and effectiveness such as scholarship disbursement rates, skill training completion rates, and grievance resolution timelines to complement beneficiary and administrative perceptions. Special attention should be directed toward respondents providing lower satisfaction ratings to identify specific pain points and implementation gaps amenable to administrative improvement. Finally, the dissemination of findings should include presentation to BARTI leadership and stakeholders with recommendations for evidence-based programme enhancement, ensuring that the research translates into practical organizational learning and potential policy modifications to strengthen institutional effectiveness.

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