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Original Article

Impact of Scheduled Caste Reservation Policy on Consumption, Education, Health, and Livelihood: An Empirical Study of Bihar

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Abstract

Beyond income, the effectiveness of Scheduled Caste (SC) reservation policy can be judged by whether it improves the everyday material and social conditions of beneficiary households what they consume, how educated and healthy they are, and how they earn their living. This paper uses a primary survey of 417 SC reservation-beneficiary households across four districts of Bihar (Patna, Gaya, Muzaffarpur and Samastipur) to compare consumption expenditure, educational attainment and spending, health awareness and medical expenditure, and livelihood strategy before and after households availed reservation benefits. Paired samples t-tests show statistically significant increases in monthly food expenditure (mean difference ₹4,613.67; $t = -40.849$, $p < .001$), clothing expenditure (mean difference ₹3,553.23; $t = -31.710$, $p < .001$), monthly education expenditure (mean difference ₹4,459.23; $t = -72.820$, $p < .001$), and annual per-capita medical expenditure (mean difference ₹7,966.43; $t = -40.045$, $p < .001$). Educational attainment shifted from 89.4 per cent "literate without formal schooling" to 47.0 per cent completing higher secondary education and 38.4 per cent graduating, regular medical check-ups rose from 0 to 100 per cent of households, and livelihood strategy shifted from 82.0 per cent casual agricultural labour and complete landlessness to 100 per cent regular salaried employment and land ownership among 93.0 per cent of households. All four null hypotheses tested are rejected, confirming that reservation has produced broad based, statistically significant improvements in the consumption, education, health, and livelihood dimensions of SC well-being in Bihar, even as disparities in the pace and depth of these gains persist.

Keywords: *Scheduled Castes, reservation policy, consumption expenditure, educational awareness, health awareness, livelihood, Bihar*

Introduction

Income is only one dimension of well-being. For a household historically excluded from land ownership, formal schooling, and basic healthcare, the more revealing test of a policy impact lies in whether it changes what the household actually eats, how it educates its children, whether it seeks medical care, and how securely it earns its living. This paper examines these four dimensions consumption, education, health, and livelihood among Scheduled Caste households in Bihar who have benefited from the constitutionally mandated reservation policy. Bihar SC population, at roughly one-fifth of the state total, has historically been concentrated in casual agricultural labour, with negligible land ownership, minimal formal schooling, and limited access to preventive healthcare (Government of Bihar, 2023). While Article 341 of the Constitution and the associated reservation framework in education and public employment were designed to break this cycle, the extent to which reservation has actually reshaped household-level consumption, education, health, and livelihood strategy as opposed to formal access alone requires direct empirical testing.

This paper addresses four objectives of the study. First objective is to examine the change in consumption pattern (expenditure on food and clothing) of SC reservation beneficiaries, second to assess health awareness and medical expenditure, third to understand educational awareness and expenditure, and fourth to examine the change in livelihood strategy following reservation benefit.

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The paper tests four corresponding hypotheses using a paired samples t-test design and is organised as follows: Section 2 reviews the literature; Section 3 outlines the methodology; Section 4 presents results and discussion across the four dimensions; and Section 5 concludes with findings and policy suggestions.

Review of Literature

1. Consumption and Living Standards

Sundaram and Tendulkar (2003) found SC and ST households disproportionately represented among India poor in both rural and urban areas through the 1990s, with agricultural and casual-labour households at greatest risk a pattern directly relevant to consumption capacity. Kumar (2002) documented that scheduled caste households in rural Bihar remained dependent on loans from landlords and moneylenders well after formal reservation provisions were in place, constraining discretionary spending on food, clothing, and durable goods even where nominal income existed.

2. Educational Awareness and Attainment

Chitnis (1972) cautioned that reservation in education, though intended to equalise opportunity, could fail to translate into genuine competitive parity without complementary support. Wankhede (2001) traced rising SC literacy in Maharashtra using Census data since 1961 but found continuing backwardness linked to poverty and an unwelcoming school system. Naidu (2004) found illiteracy declining across successive SC generations but noted that immobility still outweighed mobility in educational attainment. Gautam (2014) and Kumari (2021) specifically examined the demographic and educational status of Scheduled Castes in Bihar, finding persistent gaps in enrolment and attainment relative to the general population, while Mahapatro and Choudhary (2022) showed intergenerational occupational mobility in rural Bihar to be closely tied to educational gains among SC households.

3. Health Awareness and Medical Expenditure

Raghavendra (2020) linked literacy directly to health status among Scheduled Castes in India, finding that lower educational attainment corresponded with poorer health-seeking behaviour and outcomes. Acharya and Sahoo (2019) similarly documented continuing gaps in health awareness among the SC population despite decades of welfare intervention, and Bhagavatheeswaran et al. (2016), studying adolescent SC/ST girls in Karnataka, identified persistent barriers financial, social, and infrastructural to accessing both education and healthcare among caste-marginalised groups.

4. Livelihood Strategy

The Sustainable Livelihoods Framework developed by Chambers and Conway (1991) and adopted by DFID (2000) provides the analytical basis for examining how households convert human, physical, financial, social, and natural capital into livelihood outcomes. Applying this lens, Gang, Sen, and Yun (2017) found limited occupational diversification among Dalits in rural India despite policy support, while Apparaya (2015) documented similarly constrained livelihood transitions among Scheduled Castes in Karnataka. Deshpande and Palshikar (2008) and Munshi (2017) both note that caste continues to shape occupational mobility in the Indian economy even where formal barriers to entry have been removed, underscoring the importance of testing livelihood change empirically rather than assuming it follows automatically from access to reservation.

5. Research Gap and Theoretical Framework

Existing literature rarely follows the same beneficiary households across a defined before–after benefit period to jointly assess consumption, education, health, and livelihood change; most studies instead compare SC and non-SC populations cross-sectionally, or focus on a single dimension in isolation. This paper addresses that gap using a matched, paired-samples design applied uniformly across all four dimensions. The analysis is grounded in Sen (1999) Capability Approach which treats health, education, and material consumption as constitutive of well-being rather than mere means to income combined with the Sustainable Livelihoods Framework (Chambers & Conway, 1991; DFID, 2000) for interpreting livelihood-strategy change, and Policy Feedback Theory (Jensenius, 2015; Fazal, 2017) for understanding how sustained access to reservation benefits reshapes beneficiaries' own health- and education-seeking behaviour over time.

Methodology

The study adopts a mixed method research design combining descriptive and analytical components. The descriptive component documents the prevailing socio-economic patterns among SC reservation beneficiaries in Bihar, while the analytical component uses statistical testing to establish whether observed before–after differences in income are significant rather than incidental. A purposively selected sample of 417 SC reservation-beneficiary households drawn from two blocks each in Patna, Gaya, Muzaffarpur, and Samastipur districts of Bihar, with sample size determined via Cochran's (1963) formula at 95 per cent confidence and 5 per cent precision (See Appendix). Primary data were collected through a structured household schedule covering consumption expenditure (food, clothing), ownership of consumer durables, educational qualification and expenditure, health-seeking behaviour and medical expenditure, and livelihood source and land ownership, each recorded separately for the periods before and after the household benefited from reservation.

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Descriptive statistics (frequency and percentage distributions) were used to characterise each dimension before and after benefit, and paired-samples t-tests were used to test whether the before-after differences in expenditure (food, clothing, education, and medical) are statistically significant. The following null hypotheses were tested:

- **H_{01}:** There is no significant difference in the consumption expenditure of SC households after benefiting from reservation.
- **H_{02}:** There is no significant difference in the medical/health expenditure of SC households after benefiting from reservation.
- **H_{03}:** There is no significant difference in the education expenditure of SC households after benefiting from reservation.
- **H_{04}:** Reservation policy does not affect the livelihood strategy of SC households.

Results and Discussion

1. Consumption Expenditure

Before benefiting from reservation, food and clothing expenditure among surveyed households was low and largely uniform, reflecting tight budget constraints; the great majority of households reported spending around ₹500 per month on education-linked essentials and comparably modest amounts on food and clothing (Primary Survey). After benefiting, spending on both food and clothing rose sharply and households also reported acquiring consumer durables refrigerators (all resurveyed households), washing machines (29.3%), water pumps (100%), and pucca housing (100%) that were largely absent before benefit.

Table 1: Paired-Samples Test Food and Clothing Expenditure Before vs. After Benefit

Paired Variables	Mean Diff. (₹)	Std. Dev.	95% CI	t	df	Sig.
Food expenditure (before − after)	−4,613.67	2,306.41	(−4,835.68, −4,391.65)	−40.849	416	.000
Clothing expenditure (before − after)	−3,553.23	2,288.18	(−3,773.50, −3,332.97)	−31.710	416	.000

Source: *Primary Survey.*

Both differences are highly significant ($p < .001$), confirming that reservation-linked income gains have translated into substantially higher household spending on essential consumption. The size of the mean differences over ₹4,600 monthly on food and over ₹3,500 on clothing indicates a shift from bare subsistence toward more adequate nutrition and clothing, consistent with Sundaram and Tendulkar's (2003) finding that income gains among historically poor groups translate first into essential-goods consumption.

2. Educational Awareness and Expenditure

Table 2: Educational Qualification of Head of Household, Before and After Benefit

Qualification	Before Benefit (%)	After Benefit (%)
Illiterate	0.0	1.9
Literate without formal schooling	89.4	0.5
Literate: below primary	10.6	
Higher secondary		47.0
Graduate		38.4
Post-graduate and above		12.2
Total	100.0	100.0

Source: *Primary Survey. " " indicates the category was not applicable/not observed in that period.*

Before benefit, 89.4 per cent of households reported being literate without formal schooling and 10.6 per cent had education below primary level; no household had attained higher secondary education or above. After benefit, 47.0 per cent had completed higher secondary education, 38.4 per cent had graduated, and 12.2 per cent had pursued postgraduate study a fundamental transformation in educational attainment directly attributable to reservation in educational institutions, of which 100 per cent of households reported awareness both before and after benefit.

Table 3: Paired-Samples Test Monthly Education Expenditure Before vs. After Benefit

Paired Variable	Mean Diff. (₹)	Std. Dev.	95% CI	t	df	Sig.
Education expenditure (before − after)	−4,459.23	1,250.49	(−4,579.60, −4,338.86)	−72.820	416	.000

Source: *Primary Survey.*

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Monthly household education expenditure rose from a near-uniform ₹500 before benefit (94.0% of households) to ₹5,000 for the great majority (90.6%) after benefit a mean increase of ₹4,459.23 that is highly significant ($t = -72.820$, $p < .001$). This confirms that reservation-enabled income gains are being channelled substantially into the human-capital investment of the next generation, consistent with the Capability Approach's emphasis on education as constitutive of well-being (Sen, 1999).

3. Health Awareness and Medical Expenditure

Table 4: Health-Seeking Behaviour Before and After Benefit

Indicator	Before Benefit	After Benefit
Households with regular medical check-ups	0.0%	100.0%
Most common annual doctor visits	4 times (58.3%)	4 times (43.6%) / 6 times (33.1%)
Modal per-capita annual medical expenditure	₹500 (41.7%)	₹6,000 (53.5%)

Source: *Primary Survey.*

Table 5: Paired-Samples Test Per-Capita Annual Medical Expenditure Before vs. After Benefit

Paired Variable	Mean Diff. (₹)	Std. Dev.	95% CI	t	df	Sig.
Medical expenditure (before − after)	−7,966.43	4,062.37	(−8,357.47, −7,575.38)	−40.045	416	.000

Source: *Primary Survey.*

Before benefit, none of the surveyed households reported regular medical check-ups, and per-capita annual medical expenditure was concentrated at ₹500 (41.7%) or ₹1,000 (35.0%). After benefit, all households (100%) reported regular check-ups, and per-capita medical expenditure rose to a mean difference of ₹7,966.43, a highly significant increase ($t = -40.045$, $p < .001$). This shift indicates not merely greater ability to pay for healthcare but a behavioural change toward preventive care, consistent with Raghavendra's (2020) finding that literacy and health-seeking behaviour among SCs move together.

4. Livelihood Strategy

Table 6: Major Source of Household Income, Before and After Benefit

Source of Income	Before Benefit (%)	After Benefit (%)
Self-employed in agriculture	0.5	
Self-employed in non-agriculture	0.2	
Casual labour in agriculture	82.0	
Casual labour in non-agriculture	17.3	
Regular wage/salary earning		100.0
Total	100.0	100.0

Source: *Primary Survey.*

Table 7: Household Land Ownership (Acres), Before and After Benefit

Land Owned (acres)	Before Benefit (%)	After Benefit (%)
0 (landless)	100.0	7.0
0.10 – 0.30		40.3
0.40 – 0.60		41.7
0.80 – 1.00		10.8
Total	100.0	100.0

Source: *Primary Survey.*

Before benefit, livelihood was overwhelmingly precarious: 82.0 per cent of households depended on casual agricultural labour and 17.3 per cent on casual non-agricultural labour, with self-employment at just 0.7 per cent combined, and 100 per cent of households owned no land at all. After benefit, 100 per cent of households reported regular wage or salaried employment, predominantly in the public sector, and 93.0 per cent had acquired some land, most commonly between 0.2 and 0.6 acres. This transition from casual, insecure labour and complete landlessness to salaried employment and land ownership represents the clearest evidence of a structural change in livelihood strategy attributable to reservation, consistent with the Sustainable Livelihoods Framework's expectation that secure employment (human and financial capital) enables subsequent accumulation of physical and natural capital such as land (Chambers & Conway, 1991).

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5. Summary of Hypothesis Testing

Table 8: Summary of Paired-Samples t-Test Results

Hypothesis	Dimension	t	Sig. (2-tailed)	Decision
H_{01}	Food expenditure	−40.849	.000	Rejected
H_{01}	Clothing expenditure	−31.710	.000	Rejected
H_{02}	Education expenditure	−72.820	.000	Rejected
H_{03}	Medical expenditure	−40.045	.000	Rejected
H_{04}	Livelihood strategy (descriptive)			Rejected

Source: *Primary Survey. H_{05} was assessed descriptively via the complete shift in employment type and land ownership shown in Tables 6–7, rather than a paired t-test on a continuous variable.*

Conclusion

This paper examined whether Scheduled Caste reservation policy has produced significant, measurable change in the consumption, education, health, and livelihood status of beneficiary households in Bihar. Across all four dimensions, the evidence supports rejecting the null hypotheses of no change: food and clothing expenditure, education expenditure, and medical expenditure all rose significantly ($p < .001$), and livelihood strategy shifted decisively from casual, landless labour to salaried, land-owning status.

1. **Major Findings**

- Monthly food and clothing expenditure rose by ₹4,613.67 and ₹3,553.23 respectively, both statistically significant ($p < .001$).
- Educational attainment shifted from near-universal (89.4%) "literate without formal schooling" to 47.0% higher-secondary, 38.4% graduate, and 12.2% postgraduate qualification; monthly education spending rose by ₹4,459.23 ($p < .001$).
- Regular medical check-ups rose from 0% to 100% of households, with per-capita annual medical expenditure rising by ₹7,966.43 ($p < .001$).
- Livelihood strategy shifted from 82.0% casual agricultural labour and 100% landlessness to 100% regular salaried employment and land ownership among 93.0% of households.

2. **Policy Suggestions**

- Expand scholarship and financial-aid coverage to sustain the observed gains in higher and postgraduate education among SC beneficiaries.
- Strengthen rural healthcare infrastructure and outreach so that increased medical expenditure translates into improved health outcomes, not merely higher spending.
- Support land-titling and agricultural extension services for the 93% of beneficiary households that have newly acquired small landholdings, to convert land ownership into productive asset use.
- Launch targeted awareness and anti-discrimination campaigns to address residual social barriers that persist even where economic and educational indicators have improved.

3. **Limitations and Future Scope**

As with the companion income study, these findings are based on recall-based, self-reported data from 417 households in four districts of Bihar, and cannot be generalised beyond SC households that have already secured reservation benefits, predominantly in public employment. The livelihood-strategy hypothesis (H_{05}) was tested descriptively rather than through a continuous paired-samples statistic, and future work could construct a livelihood-security index amenable to formal hypothesis testing. Further research should also examine whether the observed gains in consumption, education, and health persist across succeeding generations of SC households, and whether similar patterns hold in the private and informal sectors, where this study's beneficiaries are only marginally represented.

References

1. Acharya, S., & Sahoo, H. (2019). Education among scheduled caste population in India. The Indonesian Journal of Geography, 51(3), 393–405.
2. Apparaya, S. (2015). Socio-economic conditions of Scheduled Castes: A study in Kalaburagi District. Paripex-Indian Journal of Research, 397–399.
3. Bhagavatheeswaran, L., Nair, S., Stone, H., Isac, S., Hiremath, T., Vadde, K., et al. (2016). The barriers and enablers to education among scheduled caste and scheduled tribe adolescent girls in northern Karnataka, South India: A qualitative study. International Journal of Educational Development, 49, 262–270.
4. Chambers, R., & Conway, G. (1991). Sustainable rural livelihoods: Practical concepts for the 21st century. IDS Discussion Paper 296. Institute of Development Studies.
5. Chitnis, S. (1972). Education for equality: Case of Scheduled Castes in higher education. Economic and Political Weekly, 1675–1681.
6. Cochran, W. G. (1963). Sampling techniques (2nd ed.). John Wiley and Sons.

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A Multidisciplinary International Level Referred and Double Blind Peer Reviewed, Open Access
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7. Deshpande, R., & Palshikar, S. (2008). Occupational mobility: How much does caste matter? Economic and Political Weekly, 61–70.
8. DFID. (2000). Sustainable livelihoods guidance sheets. Department for International Development.
9. Fazal, T. (2017). Scheduled Castes, reservations and religion: Revisiting a juridical debate. Contributions to Indian Sociology, 51(1), 1–24.
10. Gang, I. N., Sen, K., & Yun, M. S. (2017). Is caste destiny? Occupational diversification among Dalits in rural India. European Journal of Development Research, 29, 476–492.
11. Gautam, N. (2014). An overview of demography and education of Scheduled Castes in Bihar. People's Dialogue on Education, 6(1).
12. Government of Bihar. (2023). Bihar caste census report 2023. Government of Bihar.
13. Jensenius, F. R. (2015). Development from representation? A study of quotas for the scheduled castes in India. American Economic Journal: Applied Economics, 7(3), 196–220.
14. Kumar, R. (2002). Impact of rural development on Scheduled Castes. Anmol Publications.
15. Kumari, M. (2021). Educational status of Schedule Caste in Bihar. [Institutional repository publication].
16. Mahapatro, S. R., & Choudhary, R. (2022). Intergenerational educational and occupational mobility among scheduled castes in rural Bihar. Journal of Social and Economic Development, 24(1), 65–84.
17. Munshi, K. (2017). Caste and the Indian economy. Journal of Economic Literature, 57(4), 781–834.
18. Raghavendra, R. H. (2020). Literacy and health status of scheduled castes in India. Contemporary Voice of Dalit, 12(1), 97–110.
19. Ross, A., & Willson, V. L. (2017). Paired samples t-test. In Basic and advanced statistical tests. SensePublishers.
20. Sen, A. (1999). Development as freedom. Oxford University Press.
21. Sundaram, K., & Tendulkar, S. D. (2003). Poverty among social and economic groups in India in 1990s. Economic and Political Weekly, 5263–5276.
22. Wankhede, G. G. (2001). Educational inequalities among Scheduled Castes in Maharashtra. Economic and Political Weekly, 36, 1553–1558.

Appendix

❖ Cochran formula for calculating Sample Size for Infinite Population:

$$S = \frac{Z^2 pq}{e^2} \quad \text{.....1}$$

$$S = \frac{(1.96)^2(.5*.5)}{(0.05)^2} = 385$$

Here,

1. Z implies the abscissa of the normal curve that cuts off an area α at the tails (1 - α equals the desired confidence level, e.g., 95%, Z = 1.96).
2. e is the desired level of precision (e.g. 5%, 0.05).
3. p is the estimated proportion of an attribute that is present in the population, and q is 1-p (p = .5, q = 1-p = .5).
4. Sample size for unknown population is S.

Finite Population sample size (n) for Bihar state, which population (N) is 103804637 (census, 2011).

$$n = \frac{S}{1 + \frac{S-1)}{N}} \quad \text{.....2}$$

$$n = \frac{385}{1 + \frac{(385-1)}{103804637}} = 384.9985 = 385 \text{ in round figure.}$$

Where, n is the sample size and N is the population size. To ensure the reliability of the results we have collected overall 417 samples from the selected districts of the Bihar state.