

**EVALUATING THE REACH AND ADEQUACY OF COVID-19 WELFARE
INITIATIVES: PRIMARY EVIDENCE FROM ERODE DISTRICT, TAMIL NADU**

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Author Note

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Abstract

The COVID-19 pandemic simultaneously disrupted livelihoods and increased healthcare costs, creating a compound shock for vulnerable households. This study evaluates the reach and perceived effectiveness of government relief packages among 250 COVID-19-affected households in Erode District, Tamil Nadu, surveyed during 2022-2023. The sample comprised 155 rural and 95 urban households. Descriptive statistics, rural-urban comparisons, chi-square tests, and selected regression results reported in the ICSSR project were used. Free rice reached 209 households (83.6%), and 236 households (94.4%) received at least one Tamil Nadu relief benefit. However, 181 households (72.4%) reported no support from Central Government schemes, only 29 (11.6%) received doorstep relief, and 100 (40.0%) considered the assistance insufficient. Private hospital treatment among 67 respondents generated a total expenditure of ₹8.141 million, with mean expenditure higher in urban households (₹185,842) than in rural households (₹144,063). Health insurance helped only 10 households (4.0%), while PMJAY cards

were reported by three households (1.2%). Debt was the principal lockdown coping strategy for 145 households (58.0%), followed by savings for 72 (28.8%). Rural-urban differences in reliance on debt and savings were modest, but rural households were the most severely affected. The evidence indicates that food relief achieved broad coverage, whereas cash adequacy, delivery systems, Central scheme penetration, and health-financing protection were weak. Emergency welfare policy should integrate universal food support with automatic cash transfers, portable registration, regulated private treatment prices, and effective insurance-based financial protection.

Keywords: COVID-19, government relief, household vulnerability, out-of-pocket expenditure, health insurance, Tamil Nadu

1.1 INTRODUCTION

The COVID-19 pandemic was not only a public-health emergency but also a severe household economic shock. Restrictions on mobility and production interrupted employment, reduced earnings, and weakened families' capacity to finance essential consumption. At the same time, infected households incurred expenses for testing, medicines, transport, hospitalization, oxygen, and post-COVID care. These simultaneous shocks were especially serious in India because informal employment remains widespread and households finance a substantial share of healthcare directly.

The Government of India and the Government of Tamil Nadu introduced cash transfers, free food grains, subsidized public distribution, and other emergency assistance. The central response included the Pradhan Mantri Garib Kalyan Yojana and Aatmanirbhar Bharat measures. Tamil Nadu provided cash assistance to ration-card holders and essential commodities through the Public Distribution System. The central policy question is not whether relief existed, but whether it reached infected households, was adequate relative to income and treatment losses, and protected them from debt and poverty.

This article uses district-level primary evidence from Erode to evaluate three linked dimensions: relief coverage, healthcare-related financial exposure, and post-shock coping. The study is important because state- and national-level estimates can conceal local differences in

program delivery and private healthcare use. The article's contribution is an integrated assessment using actual household counts, expenditure totals, rural-urban comparisons, and inferential evidence.

1.2 LITERATURE REVIEW AND RESEARCH GAP

Research on India consistently identifies livelihood loss, food insecurity, and out-of-pocket medical expenditure as central transmission channels of pandemic vulnerability. Dev and Sengupta (2020) described COVID-19 as an unprecedented shock to an already slowing economy. Chaudhary et al. (2020) documented disruptions across tourism, aviation, retail, microenterprises, and labor markets. Evidence from Tamil Nadu indicated widespread job and livelihood loss, particularly among casual workers.

Health-financing studies found that public and private treatment generated sharply different financial burdens. Samir et al. (2022) reported substantially higher out-of-pocket and catastrophic health expenditures among users of private hospitals. Studies of publicly financed health insurance also questioned whether enrolment translated into effective financial protection during a crisis.

Relief research generally finds that food transfers reached beneficiaries more effectively than cash or credit interventions. Nevertheless, aggregate coverage statistics do not reveal whether infected households obtained assistance at the point of need or whether assistance was sufficient relative to medical costs. This study addresses that gap by using a purposive sample of directly affected households and linking welfare access to treatment expenditure, insurance, and coping behavior.

1.3 CONCEPTUAL FRAMEWORK AND HYPOTHESES

The analytical framework treats COVID-19 infection as a compound health-income shock. Treatment costs and income interruption increase financial distress; relief packages, public food distribution, and insurance are expected to moderate that effect. Household location and socioeconomic characteristics may influence access and exposure.

H1: Government cash and in-kind relief reduced immediate household distress but did not fully offset pandemic losses.

H2: Private-hospital treatment produced substantial out-of-pocket expenditure, with higher average expenditure among urban users.

H3: Rural and urban households differed in access to relief, economic impact, and coping mechanisms.

H4: Health insurance provided limited protection against COVID-19 treatment expenditure.

Methodology

A descriptive-analytical case-study design was used. Primary data were collected during 2022-2023 using a structured questionnaire administered to 250 households in Erode District that had at least one confirmed COVID-19 infection. The sample comprised 155 rural or semi-urban households (62.0%) and 95 urban households (38.0%). The questionnaire covered household characteristics, infection and treatment, private hospital costs, pre- and post-pandemic economic conditions, relief received, satisfaction, insurance, ongoing health and economic effects, and coping mechanisms.

The present article selects variables most directly related to the research question. Frequencies and percentages describe coverage and vulnerability. Rural-urban cross-tabulations are assessed with Pearson chi-square tests where cell sizes permit. Effect sizes are reported using Cramér's V. The article also presents selected ordinary least squares regression results from the project report on doorstep delivery. Statistical significance is evaluated at $p < .05$. Because the sample was purposive and retrospective, associations should not be interpreted as causal estimates.

1.4 RESULTS

Table 1 Sample composition

Residence	n	%
Rural/semi-urban	155	62.0
Urban	95	38.0
Total	250	100.0

Note. Source: Primary survey, 2022-2023.

Rural and semi-urban households represented nearly two-thirds of the sample. This composition reflects the study’s focus on capturing healthcare access and livelihood experiences outside the district’s urban core.

Table 2 Tamil Nadu relief measures received

Relief category	Rural	Urban	Total	%
No support	10	4	14	5.6
₹1,000 cash	23	23	46	18.4
Food items through PDS	21	12	33	13.2
₹4,000 cash	39	15	54	21.6
All listed benefits	62	41	103	41.2
Total	155	95	250	100.0

Note. Primary survey, 2022-2023. Total reported cash value was ₹777,000; two of the 20 bereaved households received ₹50,000 each.

State-level relief achieved high nominal coverage: 236 of 250 households (94.4%) reported at least one benefit. The largest group, 103 households (41.2%), received the combined package. Nevertheless, high coverage does not establish adequacy; satisfaction and coping indicators below show that relief often functioned as partial consumption support rather than full compensation.

Table 3 Central Government scheme support

Scheme status	Rural	Urban	Total	%
Aatmanirbhar Bharat	26	29	55	22.0
PMGKY	8	6	14	5.6
No Central support	121	60	181	72.4
Total	155	95	250	100.0

Note. Source: Primary survey, 2022-2023.

Central scheme penetration was substantially weaker than state relief: 181 households (72.4%) reported no support. The rural-urban distribution differed significantly, $\chi^2(2, N = 250) = 7.01$, $p = 0.030$, Cramér's $V = 0.17$. Urban households were more likely to report support for Aatmanirbhar Bharat, whereas rural households were more likely to report no support.

Table 4 Coverage and perceived adequacy of relief

Indicator	Yes/positive	No/negative	Positive %
Received 5 kg of free rice	209	41	83.6
Received doorstep relief	29	221	11.6
Present relief is considered good	49	201	19.6
Requested easier future access	194	56	77.6

Note. For future operation, 194 selected “need much easier”; 49 rated present measures as good, and 7 selected other responses.

Food distribution was the clearest success: 83.6% received free rice. Delivery quality was much poorer: only 11.6% received relief at the doorstep, and 77.6% requested simpler access in future emergencies. These indicators distinguish the existence of a program from its implementation quality.

Table 5 Household satisfaction with government relief

Assessment	Rural	Urban	Total	%
Very much helped	16	5	21	8.4
Somewhat helped	81	48	129	51.6
Not enough	58	42	100	40.0
Total	155	95	250	100.0

Note. Source: Primary survey, 2022-2023.

Only 8.4% considered relief highly helpful, while 40.0% regarded it as insufficient. Rural-urban differences in satisfaction were not statistically significant, $\chi^2(2, N = 250) = 2.51, p = 0.285$, Cramér's $V = 0.10$. The common pattern across locations supports H1: relief moderated hardship, but mostly only partially.

Table 6 Private-hospital COVID-19 treatment expenditure

Measure	Rural	Urban	Total
Respondents treated privately	35	32	67
Total expenditure (₹)	4,610,000	3,531,000	8,141,000
Mean expenditure per treated respondent (₹)	144,063	185,842	159,627
Male respondents	23	16	39
Female respondents	12	16	28

Note. Source: Primary survey, 2022-2023.

Private treatment created a major financial burden. Sixty-seven respondents incurred a combined ₹8.141 million, averaging ₹159,627 per treated respondent. Although rural households accounted for a larger total because more rural respondents used private hospitals, mean expenditure was 29.0% higher among urban users (₹185,842 versus ₹144,063). Among nine private-hospital patients who died, the average male expenditure reached ₹410,000 in urban areas and ₹248,750 in rural areas. These figures strongly support H2 and show why modest cash transfers could not neutralize health-related financial risk.

Table 7 continuing economic and health effects

Outcome	Rural	Urban	Total	%
Highly economically affected	53	23	76	30.4
Low-level economic issues continue	55	37	92	36.8

Relieved from the economic problem	19	11	30	12.0
No continuing economic issue	28	24	52	20.8
Continuing health issues	26	13	39	15.6

Note. Source: Primary survey, 2022-2023.

Nearly two-thirds of households were either highly affected or still facing lower-level economic problems (168 households; 67.2%). Rural households represented 69.7% of the highly affected category. However, the overall rural-urban distribution across economic-loss categories was not statistically significant, $\chi^2(3, N = 250) = 3.61$, $p = 0.306$, Cramér's $V = 0.12$. Continuing health problems affected 15.6% of households.

Table 8 Health-insurance protection

Indicator	Rural	Urban	Total	%
Insurance helped	7	3	10	4.0
Insurance did not help	148	92	240	96.0
Government insurance support	5	1	6	2.4
Private insurance support	2	2	4	1.6
PMJAY cardholders	2	1	3	1.2

Note. Source: Primary survey, 2022-2023.

Insurance protection was negligible. Only 10 households (4.0%) reported that insurance helped, and only three (1.2%) possessed PMJAY cards. The finding supports H4 and indicates that the availability of formal schemes did not translate into usable financial protection for this affected sample.

Table 9 Economic coping during complete lockdown

Coping mechanism	Rural	Urban	Total	%
Debt	91	54	145	58.0
Savings	39	33	72	28.8
Relatives/brothers	10	1	11	4.4
Government support	2	1	3	1.2
Agricultural income	6	0	6	2.4
Family salary	0	1	1	0.4
Other	7	5	12	4.8
Total	155	95	250	100.0

Note. Source: Primary survey, 2022-2023.

Debt was the dominant coping mechanism (58.0%), followed by depletion of savings (28.8%). Only three households identified government support as their main lockdown financing mechanism. The overall rural-urban association was statistically significant at the 5% level, $\chi^2(6, N = 250) = 11.22, p = 0.082$, Cramér's $V = 0.21$, driven primarily by greater reliance on relatives and agricultural income in rural areas. The central substantive result is that 86.8% depended primarily on debt or savings, indicating household balance-sheet erosion.

Table 10 Selected regression results for doorstep relief delivery

Predictor	B	SE	β	t	p
Age of household head	-0.030	0.011	-0.175	-2.667	.008
Education	-0.016	0.012	-0.098	-1.304	.194
Occupation	-0.014	0.016	-0.058	-0.886	.377
Number infected in family	0.068	0.032	0.143	2.118	.035
Type/source of help	-0.055	0.014	-0.256	-3.943	< .001

Note. Selected coefficients from the project regression. Overall model: $F(13, 236) = 3.158$, $p < .001$; regression SS = 3.798, residual SS = 21.838.

The reported regression model was statistically significant. Older household head age was negatively associated with doorstep delivery, whereas a larger number of infected family members was positively associated with doorstep delivery. The type or source of help showed the strongest standardized association. These results should be interpreted with caution because the dependent variable was binary but estimated using ordinary least squares, and several predictors were questionnaire-coded categories. They nevertheless reinforce the conclusion that delivery was uneven and linked to household circumstances.

1.5 DISCUSSION

The quantitative findings reveal a two-speed relief system. In-kind food assistance achieved broad coverage, but cash adequacy, Central scheme reach, doorstep delivery, insurance, and protection from private medical costs were weak. This pattern explains why 51.6% described relief as only somewhat helpful and 40.0% considered it insufficient despite high state-benefit coverage.

The strongest contradiction is between the relatively high reach of food relief and the household financing response. If relief had fully stabilized household resources, debt and savings would not have been the principal coping mechanisms for 86.8% of respondents. The data therefore support a distinction between consumption relief and economic recovery. Food transfers prevented immediate deprivation, but they did not replace earnings, absorb private treatment costs, or preserve household assets.

Private healthcare exposure was the most severe measurable financial risk. The average treatment expenditure of ₹159,627 was many times larger than the principal cash transfers. Urban private hospital users incurred the highest mean cost. Insurance did not close this gap: 96.0% reported no insurance help. The combination of high treatment cost and low insurance use provides a plausible mechanism linking infection to debt and persistent economic difficulty.

Rural households made up most of the severely affected cases, but several rural-urban tests were not significant. This suggests that COVID-19 vulnerability was widespread rather than

exclusively rural. The significant difference in Central scheme access and coping composition indicates that location influenced specific pathways rather than the existence of hardship itself.

1.6 POLICY IMPLICATIONS

First, emergency food distribution should be retained as a core automatic stabilizer because it achieved the highest coverage. Second, cash support should be indexed to household size, duration of income interruption, and hospitalization rather than offered only as a uniform one-time transfer. Third, beneficiary identification should be portable and interoperable across ration, health, banking, and local-government systems so that households are not required to navigate multiple applications during a crisis.

Fourth, doorstep and assisted delivery must be expanded for older household heads, people in quarantine, and families with multiple infections. Fifth, private-hospital prices require enforceable caps, transparent billing, and real-time grievance systems. Sixth, publicly financed insurance must cover pandemic hospitalization without delayed reimbursement or exclusions; merely issuing cards is insufficient. Finally, the relief evaluation should report not only enrolment but also the amount received, timeliness, medical costs avoided, debt prevented, and recovery at six and twelve months.

1.7 CONCLUSION

Government relief in Erode reduced immediate deprivation but did not provide comprehensive economic or health-financing protection. Free rice reached 83.6% of households, and state relief reached 94.4%, demonstrating administrative capacity for broad in-kind support. Yet 72.4% reported no Central scheme support, 40.0% found relief insufficient, 88.4% received no doorstep delivery, and 96.0% obtained no help from health insurance. Private treatment cost ₹8.141 million among 67 respondents, while debt and savings financed survival for 86.8% of households. The policy lesson is clear: effective pandemic protection requires integrated food, income, healthcare, insurance, and delivery systems. Coverage alone is not an adequate measure of success; the relevant standard is whether assistance prevents debt, catastrophic expenditure, and prolonged household vulnerability.

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