

Urban Challenges of the COVID-19 Pandemic

Findings from the Delhi NCR Coronavirus
Telephone Survey, Rounds 1 and 2

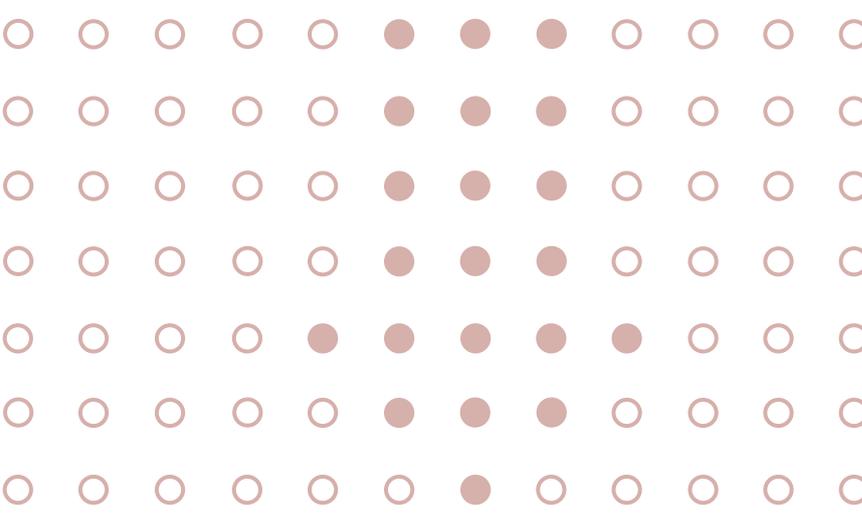
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COVID-19 PANDEMIC



Introduction

The COVID-19 pandemic and the protracted nation-wide lockdown has triggered a severe humanitarian crisis, leading to the widespread loss of livelihoods. While the Coronavirus outbreak has revealed cracks in the health systems and public health infrastructure, the consequent containment measures have also caused a major disruption in the income-earning capacity and supply of goods and services. The lockdown that was implemented from March 25 to rein in a public health crisis brought economic activities to a grinding halt. Although economic activity picked up over the next few months, especially since June, following a graded unlocking of the economy, the effects of the initial shock still linger. Our study is set in the backdrop of this scenario, and we seek to examine which households were affected the most by the one of the most stringent lockdowns across the world, and how these households survived during such an unprecedented crisis.

Key Highlights

- **Our findings suggest that casual wage labourers and businesses suffered across the board, with the effect being more pronounced after late April**, as the extended lockdown took a heavy toll on the sales generated from such businesses. These findings closely match the narrative of a spike in unemployment levels in April 2020 revealed by Centre for Monitoring Indian Economy (CMIE) data, which reported an unemployment rate of 23.5 per cent for the month, with daily wage labourers working in the unorganised sector, and small traders, being amongst the most affected groups.
- **Cultivator households were more insulated** against the economic shock relative to other occupational groups.

- **The inflow of remittances as a usual source of income provided some cushion** against the income shock of the lockdown. However, whether this continued to provide insurance against the income shock as the lockdown got extended beyond April is a question that needs to be explored further, and would largely depend on the source of remittance income, and the extent to which the concerned households were adversely affected.
- **Households having casual wage work as the main source of income were less likely to receive rations or cash transfers if they were residing in urban areas.** The predicted probability of receiving rations dropped by 15 percentage points and that of receiving cash went down by 12 percentage points, pointing to some form of urban exclusion in the crisis.
- **Even for those who received benefits, the transfers were mostly modest**—the median beneficiary household reported receiving a meagre ₹750, translating into a mere ₹15 per day per household, which is well below the official poverty line estimates reported by the Tendulkar Committee, adjusted for 2019 prices. Only 36 per cent of those in the poorest asset tertile received cash transfers, while 56 per cent received rations; and 40 per cent needed but did not receive rations, pointing to a massive targeting error in addressing economic distress and food insecurity triggered by the pandemic and the consequent lockdown.

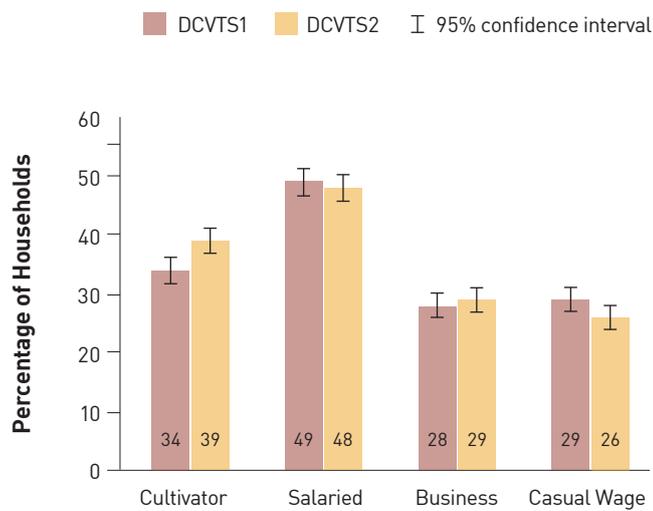
Methods

DATA

For our analysis, we use data from the Delhi National Capital Region Coronavirus Telephone Survey (DCVTS), a rapid telephone survey interviewing 1,756 households during the period April 3-6, 2020 (DCVTS-1), and another survey of 1,885 households conducted during April 23-26, 2020 (DCVTS-2),

the early days of the lockdown. The sample spans the Delhi National Capital Region (NCR), including three districts in Delhi, four in Haryana, two in Rajasthan, and three in Uttar Pradesh, covering both rural and urban areas. Figure 1 depicts the distribution of households by sources of income across the two rounds of the survey, showing a fair mix of cultivators, businesses, and salaried and casual work, as well as the comparability of these groups across both the rounds.

Figure 1: Distribution of households by sources of income



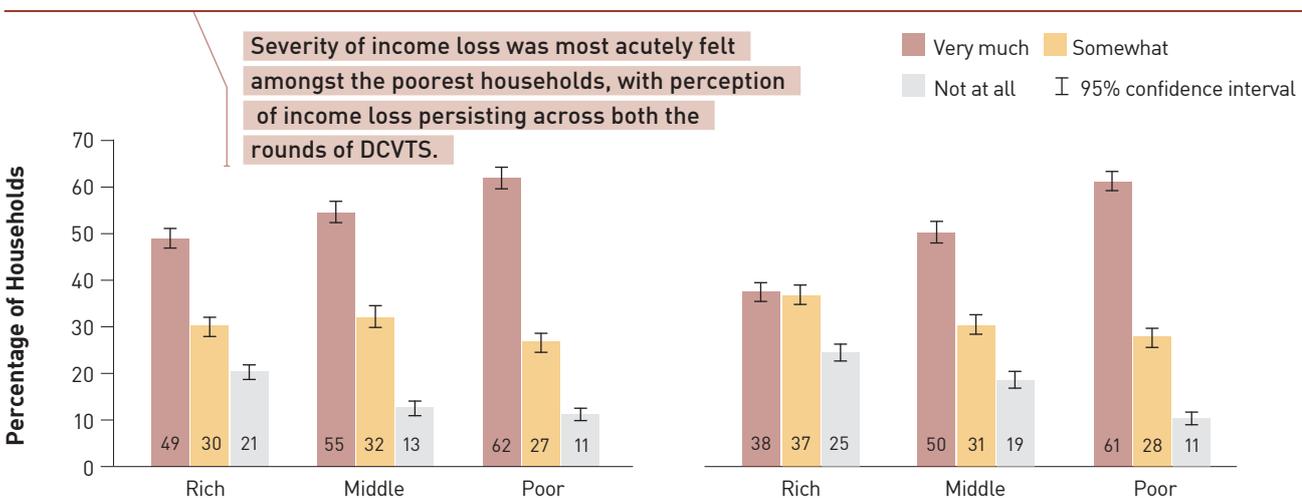
Source: Authors' computation based on DCVTS, Rounds 1 and 2.

Analysis and Results

The lockdown, which has also been the dominant policy response across countries to the COVID-19 pandemic (Ray & Subramanian, 2020), triggered widespread livelihood distress and food insecurity. Forecasts suggest that the economic contraction across the world could potentially lead to close to 340 million people losing their full-time jobs in the second quarter of 2020 (ILO, 2020), while 71 million to 100 million may fall into extreme poverty (World Bank, 2020). In India, workers engaged in the informal sector, typically without any access to social security benefits or unemployment insurance and limited healthcare access, have been the most vulnerable to the economic shock perpetuated by the lockdown (Sen, 2020).

Results from DCVTS show that more than 80 per cent of the respondents across both the Rounds reported having suffered some form of income loss, with around 50 per cent or more suffering a severe loss, as the lockdown and the looming threat of the virus stopped nearly all economic activities. Figure 2 shows the severity of income loss felt across households in different asset tertiles¹, indicating the broad-based nature of the economic distress across both rounds of the survey. The immediate impact of choking of transportation arteries led to supply shortages, though this was less widespread, with 29 per cent of the households in DCVTS-1 experiencing difficulties in obtaining essential supplies. This figure declined further to 9 per cent during DCVTS-2. The more insidious impact of the lockdown was felt on the prices of essential items.

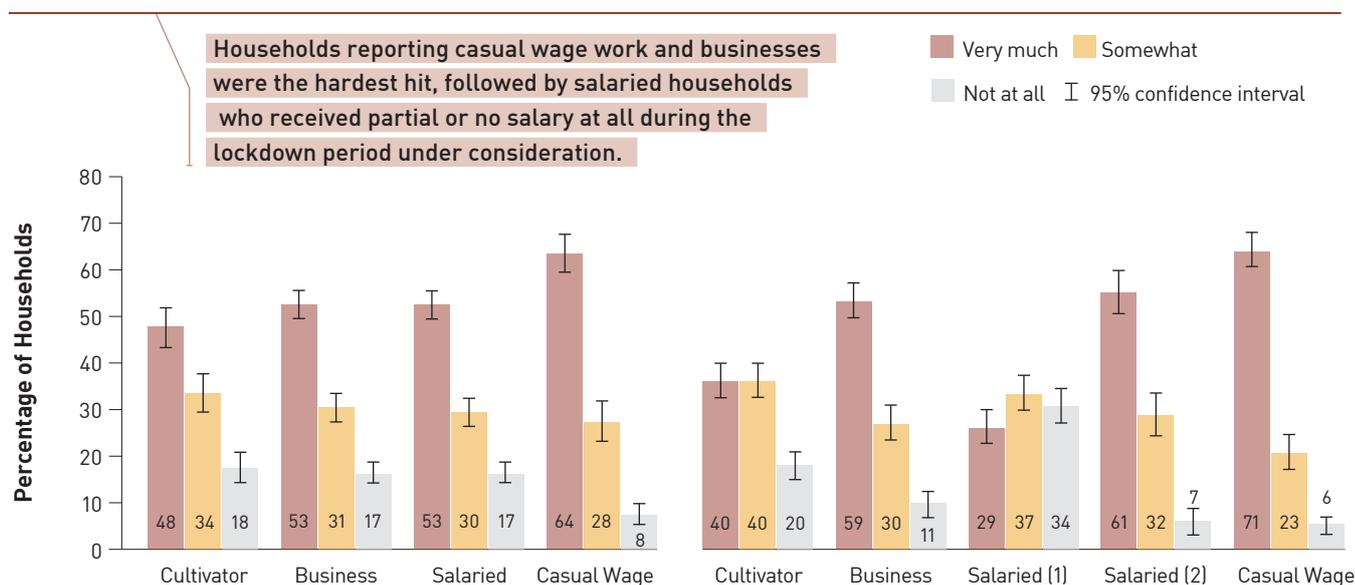
Figure 2: Income loss across asset tertile categories: DCVTS-1, April 3-6 (left panel) and DCVTS-2, April 23-26 (right panel)



Source: Authors' computation based on DCVTS, Rounds 1 and 2.

¹ The Assets Index was created based on ownership of nine items using Principle Components Analysis (PCA). The asset tertile groups were subsequently created based on the index.

Figure 3: Loss of income by income source: DCVTS-1, April 3-6 (left panel) and DCVTS-2, April 23-26 (right panel)



Source: Authors' computation based on DCVTS, rounds 1 and 2.

Note: For DCVTS-2, salaried (1) refers to households reporting salaried work where the worker received full salary during the lockdown period under consideration; salaried (2) refers to the case where the worker received partial salary or none at all.

The effect of the stringent lockdown was not uniformly felt across households, with the data revealing a great deal of variation. Which households were the most affected? And which sources of livelihood aided households in tiding over the uncertain ride? We explore these questions further in this research brief, delving into the characteristics and occupational profiles of the sampled households².

In response to the economic distress posed by the collapse of economic activities during the lockdown phase, the Central Government rolled out the safety nets programme, the Pradhan Mantri Garib Kalyan Yojana (PMGKY), targeted to provide immediate relief. For our analysis, we focus on two key programmes: (a) provision of additional rations in the form of grains and pulses and (b) transfer of additional cash into the bank accounts of the targeted groups.

Overall, poorer households having irregular sources of income, especially those with casual wage earners, who mostly earn on a day-to-day basis, faced the brunt (Figure 3). While the welfare measures provided some relief, we also found households in distress with unmet needs, indicating a mismatch between the beneficiaries of the welfare and those most affected by the pandemic. Such mismatches were more pervasive in urban areas, pointing towards an urban exclusion of these welfare measures.

Livelihood Distress—Who Were the Ones Most Affected?

To further analyse the characteristics of households that have suffered income loss, we carry out an ordinal logit regression predicting income loss, with 'no income loss' considered as the base outcome. All standard errors are clustered at the PSU level. The primary sampling unit comprises villages in rural areas and urban blocks in urban areas. Our primary variables of interest are different occupational categories, defined by household sources of income, with asset tertiles, and household size serving as control variables. We also control for rural-urban differences, and state dummies to capture the unobserved heterogeneity across States. Additionally, we control for the gender of the respondent to test for any gender-based differences in responses. We run separate regressions for each round of the survey, with DCVTS-1 linked to baseline data from the Delhi Metropolitan Area Study (DMAS), as the sample drawn for DCVTS-1 was based on the larger DMAS sample. The linked data allows us to use additional controls, such as annual remittance income.

²Occupational profiles are defined by household sources of income as captured in DCVTS.

The results presented in Table 1 show that as compared to the rich, both the poorest households and those in the middle asset quintile were adversely affected by the lockdown, though the severity was higher amongst the lower asset quintile for both the rounds. Households reporting casual wage work faced a higher severity of the shock in Round 2, as indicated by the log-odds ratio. Typically, casual wage work is concentrated in low-paying informal jobs that are sporadic in nature and do not provide any job security or social security, thus leaving this group vulnerable to all kinds of income shocks.

Mapping DCVTS-1 observations into DMAS baseline data for within-household highest level of education, we observe that such households are characterised by limited education, with members in only 13 per cent of the households having some college degree, while those in 61 per cent of the households have education only up to the secondary level, indicating that these households most likely engaged in jobs at the lower end of the employment ladder.

Estimates from DCVTS-2 suggest that households that reported non-receipt or partial receipt of salaries suffered from a higher income loss—it is likely that this stemmed from employment based on either short-term contracts or work in the informal sector, segments which were more adversely affected and experienced lay-offs.

Our findings also suggest that businesses suffered, with the effect being more pronounced in Round 2, as the extended lockdown took a toll on the sales achieved by such businesses. These findings closely match the narrative of a spike in unemployment levels in April 2020 shown by CMIE data, which reported an unemployment rate of 23.5 per cent for the month, with daily wage labourers working in the unorganised sector and small traders, being amongst the most affected groups.

The results from Table 1 also suggest that cultivator households were relatively more insulated relative to other occupational groups, with the effect being statistically significant at the 5 per cent level in Round 2. For households surveyed in Round 1, mapped into the DMAS baseline data, we also observe that the presence of remittances as a usual source of income provided some cushion against the income shock of the lockdown. However, whether this continued to provide insurance against the income shock as the lockdown got extended beyond April is a question that needs to be explored further, and would largely depend on the source of remittance income, and the extent to which the concerned households were adversely affected.

Table 1: Severity of income loss more acutely felt in DCVTS-2

INCOME LOSS	DCVTS-1	DCVTS-2
Respondent (Female 1)	1.216	0.977
Ref: Male 0	(0.149)	(0.147)
Assets: Middle 2	1.278**	1.417***
	(0.145)	(0.155)
Assets: Poor 3	1.653***	1.874***
(Ref.) Assets: Rich 1	(0.215)	(0.243)
Cultivator (1/0)	0.776*	0.710**
	(0.103)	(0.101)
Business (1/0)	1.391***	2.084***
	(0.167)	(0.265)
Salaried: partial/none 1		1.714***
		(0.234)
Salaried: full 2	0.827*	0.439***
(Ref.) Not salaried 0	(0.0921)	(0.0545)
Casual Wage Work (1/0)	1.605***	2.908***
	(0.183)	(0.408)
Remittance (1/0)	0.711**	
	(0.0963)	
Hotspot (1/0)		1.127
		(0.117)
N	1,753	1,843

Source: Authors' computation based on DCVTS, Rounds 1 and 2.

Note: Results from ordinal logit regression, with co-efficient signifying odds-ratio. Base outcome corresponds to 'no income loss'. Other controls used: household size (log), rural/urban, state dummies. Standard errors, reported in parentheses, are clustered at the PSU level, with ***p < 0.01, **p < 0.05, *p < 0.1.

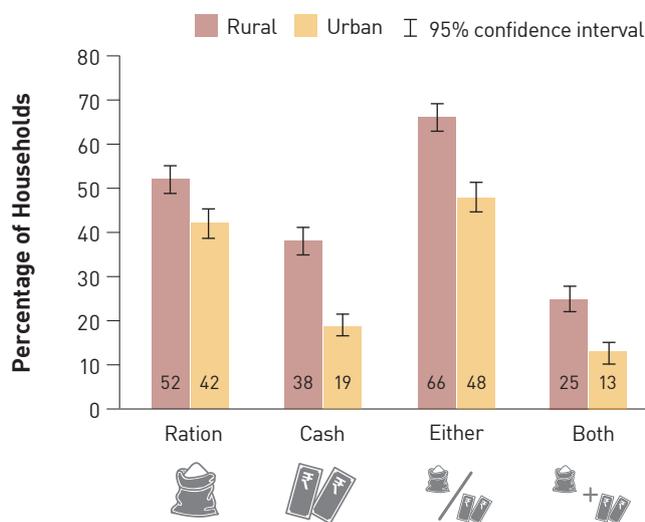
Social Safety Nets

In order to provide relief to the poor, the Central Government, on March 26, announced a ₹1.70 trillion welfare package under PMGKY. Some of its key elements in terms of cash and in-kind benefits include: (a) the provision of an additional 5 kg of foodgrains and 1 kg of pulses for free to all beneficiaries under the National Food Security Act (NFSA) for three months beginning April 2020, (b) free of cost refills for the Pradhan Mantri Ujjwala Yojana (PMUY) beneficiaries for a period of three months starting from April 2020, with the cash to be transferred to the bank account, (c) cash transfer of ₹500 for the period April-June 2020, in the accounts of women Jan Dhan Yojana account-holders,

(d) front-loading of the first instalment of ₹2000 budgeted under PM-Kisan, and (e) cash transfers to registered workers in the construction sector. For our study, we explore who received these benefits and who were left out, in terms of additional rations (foodgrains) received and additional cash transfers into their bank accounts.

Figure 4a suggests a rural–urban divide, with a higher proportion of respondents in rural areas reporting the receipt

Figure 4a: Stark rural-urban difference pointing towards urban exclusion



Source: Authors’ computation based on DCVTS-2.
 Note: The figure shows receipt of additional foodgrain rations and additional cash offered as part of the COVID-19 relief package.

of welfare benefits. We also observe that very few households had received both rations and cash, with even fewer in urban areas. Figure 4b shows the distribution of welfare receipts for households across different asset tertile groups. In order to examine which households benefited and which ones were excluded, we ran two separate regressions: (a) multinomial logit regression predicting who received welfare (Category 3) and who could not get welfare (Category 2), with households having no need (Category 1) treated as the base outcome and (b) logit regression predicting cash receipts. The standard errors for both the regressions were clustered at the PSU level.

The results from our multinomial regression suggest that casual wage workers and those who lost their salaried jobs were more likely to have received rations (Table 2, Column I, on Page 7). However, we also observe that the relative risk ratio for those who did not get rations but needed them is also higher for casual wage workers and those who received partial salaries or had lost their jobs, pointing to the fact that not all those who needed them received the additional foodgrains that were being given through the Fair Price Shops (Table 2, Column II). Further, households in urban areas are also less likely to report that they had received the in-kind benefits. We observe similar results from our regression results from cash transfers (Table 2, Column III), with urban households less likely to report that they had received cash transfers into their bank accounts.

Policy Lessons

The poor outreach of the welfare programme, especially in the midst of reports that many poor households that are vul-

Figure 4b: Receipt of Welfare Benefits—DCVTS-2 (April 23-26)

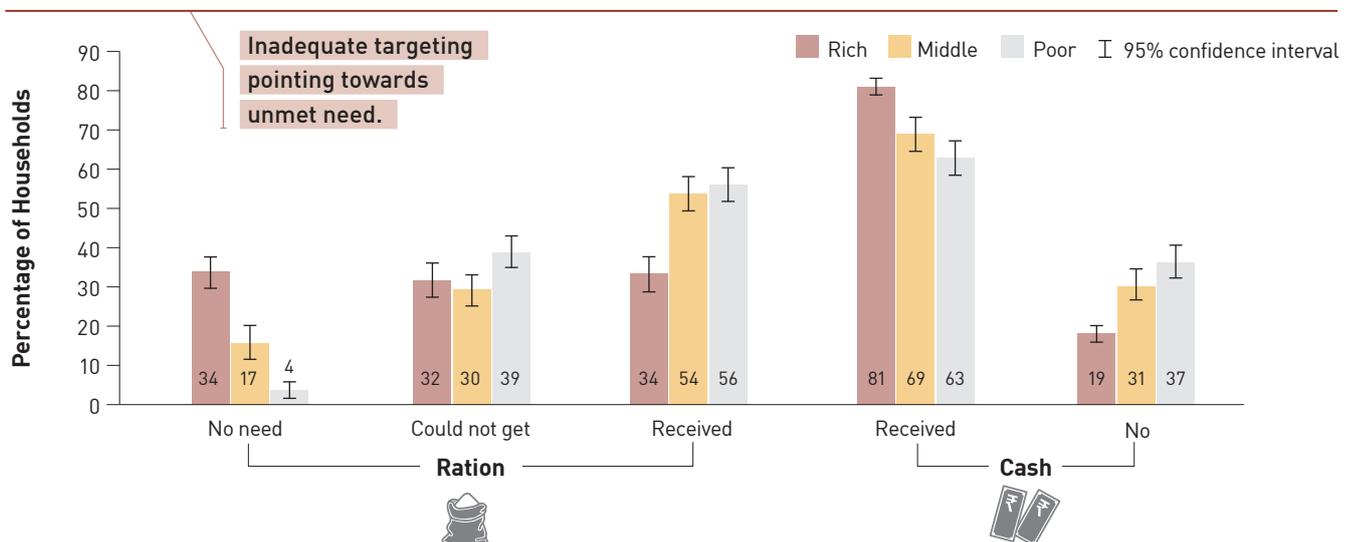


Table 2: Urban exclusion: households in urban areas were less likely to receive both food and cash support

	RATION		CASH
	Needed but Could Not Get	Received	Received
	Ref: No Need	Ref: No Need	Ref: Did Not Receive
	I	II	III
Respondent: Female 1	1.637**	1.902***	1.252
Ref: Male 0	(0.375)	(0.411)	(0.211)
Asset Tertile: Middle 2	1.612***	2.434***	1.648***
	(0.258)	(0.39)	(0.223)
Asset Tertile: Poor 3	6.321***	6.590***	1.582***
Ref: Rich 1	(1.496)	(1.636)	(0.232)
Cultivator	1.373	0.911	1.071
	(0.275)	(0.191)	(0.172)
Business	1.422*	1.529**	1.272*
	(0.267)	(0.288)	(0.167)
Salaried (Partial/None) 3	2.184***	2.422***	1.186
	(0.518)	(0.602)	(0.189)
Salaried 2	0.663**	0.722*	0.891
Ref: Not Salaried 1	(0.125)	(0.133)	(0.139)
Casual Wage Work	7.752***	12.71***	1.752***
	(2.817)	(4.49)	(0.268)
Urban	0.735	0.389***	0.471***
	(0.163)	(0.0965)	(0.0886)
N	1,885	1,885	1,885

Source: Authors' computation based on DCVTS-2.

Notes: Coefficients for Columns I and II reflect relative risk ratios for multinomial logit predicting receipt of additional ration (foodgrains). The base outcome for the multinomial logit is 'no need'. Coefficients for Column III reflect odds-ratios predicting receipt of additional cash. Standard errors are reported in parentheses. Other controls: hotspot, state dummies. Standard errors are clustered at the PSU level, with ***p < 0.01, **p < 0.05, *p < 0.1.

nerable to income shocks do not have ration cards, or that the current system excludes migrants, warrants universalisation of the Public Distribution System. Additionally, while the Government has provided extra allocation for the Mahatma Gandhi National Rural Employment Guarantee Act to support employment and income generation in rural areas as part of the Atmanirbhar Abhiyan, it is imperative to also announce a COVID-19 relief package, an employment guarantee programme designed for urban areas, given that the in-

come shock was more deeply felt by the urban poor, who were excluded from the cash transfers. The targeting error is quite apparent from the results of the first two rounds of DCVTS, which were conducted during the initial phase of the lockdown. However, whether such exclusion persisted, or whether the outreach of the welfare programme improved subsequently, and how households continued to cope even after months into the lockdown and unlocking phases, are issues that require further exploration.

FURTHER READING:

ILO. (2020). "COVID-19 and the World of Work", ILO Monitor, 5th edition., Briefing Note, 30 June.

Ray, D., and S. Subramanian., S. (2020). "India's Lockdown: An Interim Report". NBER, Working Paper WP No. w27282, Cambridge, MA: National Bureau of Economic Research.

Sen, K. (2020). "COVID-19 and Socioeconomic Impact in Asia: the Case of India". UNU WIDER Background Note 2020/0, | 1/2020. Helsinki: UNU-WIDER.

World Bank. (2020). "Pandemic, Recession: The Global Economy in Crisis", June 2020 Global Economic Prospects, June.

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- (1)** To pilot innovative data collection methods and mainstream successful pilots into larger data collection efforts;
- (2)** To impart formal and informal training to a new generation of data scientists; and
- (3)** To serve as a resource for data stakeholders, including Government data agencies and ministries.

NDIC is experimenting with survey instruments and modes of data collection to address shortcomings in existing approaches. Other capacity building activities that enable NDIC to serve as a key partner in India's evolving data infrastructure include regular workshops and lectures addressing critical issues related to statistical data collection, and an annual data collectors' conference.

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