

To Answer or Not to Answer: What Determines Telephone Survey Response Rates in Times of Lockdown?

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Surveys in low- and middle-income countries evoke much higher response than those in richer countries. This has led to a situation wherein there is much less interest by researchers on various factors that might be impacting survey response in the former. However, many factors, including increasing urbanisation and industrialisation and accompanying demographic and socio-economic changes in countries of the global South, may lead to a situation where the survey response is no longer high warranting researchers to pay greater attention to it. In this article, the authors undertake this exercise by drawing on the panel the Delhi Metropolitan Area Telephonic Survey (DMAS-T) that was conducted in the National Capital Region during the pandemic from April 2019 to June 2021 (this includes periods of the COVID-induced lockdown). The results indicate that underneath the initial high response to the survey, there is much heterogeneity by the lockdown phase, survey month, and other individual and socio-economic background characteristics of the respondents. The results reinforce the argument for paying greater attention to survey response as a means of understanding survey data as also of designing better surveys with the intention to reduce non-response and/or bias.

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1. INTRODUCTION

With almost universal response or at least the absence of a general resistance in the population towards participating in household surveys in poor countries,

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there has been relatively little interest and reason on the part of researchers to examine survey response in these settings in greater detail (Stecklov et al., 2017).

Yet it is time that greater attention be paid to understanding it in high survey response context. First, even when the response rate is high, there may be a gap between the respondent's understanding of individual items in the questionnaire and that of the researcher. Watkins (1995), for instance, notes that respondents often interpreted questions on ownership of assets with the possibility of distribution of the (listed) consumer items at the end of the survey. Hence, they would insist that the interviewers record that they do not own certain items even when they actually do. The implication that follows is that in this instance (but it could as well be true for other surveys and variables) the 'reported' ownership of assets does not truly capture 'actual' ownership. More broadly, the participants may attach personal benefits accruing from participation in the survey research. 'Development benefits' to the community at large are often expected from such participation. Both these anticipations are likely to lead to a bias in the survey responses. See also Weinreb (2006) for a critical appraisal of using stranger interviewers over insider interviewers for collecting survey data in developing countries.

Second, increasing urbanisation and industrialisation and accompanying demographic and socio-economic changes such as a decrease in family size, a shift in living arrangements from joint to nuclear families and greater participation of women in the labour force, among others, in the developing world are likely to lead to a scenario where universal survey response is less forthcoming. The existence of large families means that there is someone always likely to be available to participate in surveys (Stoop, 2005); the decline in fertility rate and hence, family size reduces the probability of the latter. Similarly, an increase in the female labour force participation reduces the 'contactability' of women by surveyors and thereby their participation in surveys (Beullens et al., 2018; Tucker & Lepkowski, 2008). Surveyors in Western countries also find it more difficult to establish contact with those who are single, have a paid job, are living in apartments and in large cities and those who belong to a higher socio-economic status. Lower contactability means that this sub-population will eventually have lower participation in surveys (Campanelli et al., 1997; Goyder, 1987). At the other end, easier contactability of families with young children and elderly means that their survey participation is high (Groves & Couper, 1998). Other evidence from the Western world indicates lower participation in surveys by those residing in gated colonies (Tourangeau, 2004), particularly in the larger cities of France and Switzerland (Beullens et al., 2018).

Not much has been documented on how the responses to National Sample Surveys, which are conducted by the Government of India at regular intervals on diverse topics, have changed over time. However, in an opinion piece written for an Indian newspaper,¹ a former acting head of the National Statistical Commission notes that while earlier there was ‘genuine’ interest on the part of the respondents to take part in surveys and villagers would go as far as providing accommodation and other assistance to the interviewers, this interest has dwindled in recent years so much so that now ‘sustained’ efforts are needed to ensure the participation of respondents in surveys.

Moving further, at the peak of the pandemic, telephonic surveys emerged as the mainstay of survey data collection across the world, including in low- and middle-income countries (henceforth LMICs). While they are not likely to replace the traditional face-to-face surveys, the importance of telephonic surveys as a mode of data collection is likely to grow in the coming years. Understanding patterns of response and non-response to telephonic surveys adds another dimension in the study of survey responses in LMICs and is largely unexplored (Etang et al., 2015; Pramanik et al., 2022b). Using data from a short monthly panel telephonic survey called the Delhi Metropolitan Area Telephonic Survey (DMAS-T) conducted in the Delhi metropolitan area (also the National Capital Region or NCR) in India, we focus on the latter in this article.

DMAS-T was originally conceived as a survey involving 12 rounds of monthly calls to capture the employment status of household members from April 2019 to June 2020. It was subsequently extended till September 2021 to capture employment during COVID. This feature of the panel survey that a part of it happened before and another after the pandemic allows for a comparison of response rates ‘before’ the pandemic with those recorded during the lockdown when there were strict restrictions on the movement of people, and post the lockdown when these restrictions were enforced less strictly and gradually lifted. We also compare the variation in response rates across different demographic and socio-economic groups.

The article is structured as follows: Section 2 discusses the response rates in countries of the global North and South respectively, whereas the research questions are outlined in Section 3. The data and methods are detailed in Section 4. Finally, the results and conclusions are presented in Section 5 and Section 6, respectively.

¹ Mohanan, P. (2020, January 4). Bias exists in survey responses, but also in government’s own telling. *The Indian Express*. <https://indianexpress.com/article/opinion/columns/national-sample-surveys-farmer-suicides-data-ncrb-government-development-bias-here-and-there-6198651/>

2. CONTRAST IN SURVEY RESPONSE RATE IN COUNTRIES OF THE GLOBAL NORTH AND SOUTH

2.1 Countries in the Global North

A distinguishing feature of survey research in LMICs as compared to urbanised and industrialised countries is the high response rates in the former (Beullens et al., 2018; Rindfuss et al., 2015; Stecklov et al., 2017).

Further, in many high-income countries, the response rates have suffered a decline over time. For example, the response rate to the Japanese Social Survey dropped from 65 per cent in 2000 to 53 per cent in 2006 (Rindfuss et al., 2015) while the response rate to the US General Social Survey used to be within the range of 75 per cent to 79 per cent from the late 1970s onwards to the late 1990s, but subsequently declined to 70–71 per cent between 2000 and 2012 and further to about 60 per cent in 2018 (Morgan, 2020). In the Health and Retirement Survey, the baseline response rate for the cohort that entered in the year 1992 (the HRS cohort) was 81.3 per cent, while it stood at only 56 per cent for the cohort entering the survey in 2010, also termed as minority oversample or MOS (HRS Staff, 2017). Indeed, in the US between 2004 and 2014, the response rates in face-to-face surveys decreased despite efforts to increase survey participation (Williams & Bricks, 2017). Telephonic surveys in the United States have also experienced a decline in response rates (Curtin et al., 2005). Crossing over the Atlantic, the target response rate of 70 per cent in the European Social Survey, which is a biennial face-to-face survey held across different European countries, was achieved only in 43 of 181 country-round specifications between 2002 and 2014. There is also a declining trend in terms of response rates in this time frame despite an increase in field work efforts (Beullens et al., 2018).

During the pandemic as well, when face-to-face interviews were suspended, telephonic surveys did not yield high response (Bates & Zamadics, 2021; McIllece, 2020; Sastry et al., 2020). The 2020 British Social Attitudes Survey, which was conducted over the web, too recorded a lower response rate than the previous wave of the survey done through a face-to-face interview (Clery et al., 2021).

The high rate of non-response has given rise to a rich literature examining its various dimensions, such as the nature of non-response, its implications for the biasedness of estimates, differential response rates by mode of data collection, ways and means that can be used to counter low response rate and the extent to which they have been successful. See, among others, Williams and Bricks (2017), Groves (2011), Singer and Presser (2008), Singer (2006),

Rindfuss et al. (2015), Buellens et al. (2018) and the literature cited therein for a preliminary overview of it.

2.2 Countries in the Global South

Countries in the Global South present a context that is truly a polar opposite from the Global North. Table 1 summarises the response rates to the National Family Health Survey (NFHS) in India. It indicates that almost all households and women respond to the NFHS enumerators. Men, on the other hand, exhibit lower response rates. Yet it is well above the target response rate of 70 per cent in the European Social Survey. It is possible that the higher response rates in NFHS are due to differences in the sample replacement strategy. If the replacement of the sample either because of refusal or any other reason is not reported, the response rates would be higher. However, the cultural context is an important mediating mechanism too. In many countries, it is considered impolite or rude to not attend or answer to an outsider or even a stranger. An ancient Indian dictum, for example, is '*atithi dēvō bhava*', meaning that the one who arrives unannounced (commonly translated as guest) is like a God. The response rate of the baseline face-to-face survey that preceded and forms the basis of the telephonic panel survey, whose response rates we analyse here, was 83 per cent.

The pattern of near-universal response repeats across other different demographic and health surveys (DHS) countries, such as Bangladesh, Nepal, Pakistan, Egypt, Ghana and Kenya. Typically, women exhibit a higher response rate than men. The response rate is also higher in rural as compared to urban areas, with the difference being particularly pronounced for men. Another major survey, the Chitwan Valley Family Survey, a panel survey being conducted in Nepal since 1997, too has recorded a high response rate over the years, including during the years of armed internal conflict or disturbances in the country (Axinn et al., 2012).

Table 1 Response Rates to the National Family Health Survey, Various Years

	<i>Households Interviewed</i>			<i>Women Interviewed</i>			<i>Men Interviewed</i>		
	<i>Overall</i>	<i>Rural</i>	<i>Urban</i>	<i>Overall</i>	<i>Rural</i>	<i>Urban</i>	<i>Overall</i>	<i>Rural</i>	<i>Urban</i>
1992–93	95.6	96.1	94.4	96.1	96.0	96.2			
1998–99	97.5			95.5					
2005–06	97.7	98.5	96.9	94.5	95.5	93.3	87.1	89.9	84.6
2015–16	97.6	98.1	96.5	95.8	97.0	96.7	91.9	92.9	89.7
2019–21	97.5	98.1	95.6	96.9	97.2	96.0	91.6	92.4	89.4

Source: National Family Health Surveys, various years. International Institute for Population Sciences (IIPS) & ICF (1995, 2000, 2007, 2017, 2021).

The same pattern also holds true for telephonic surveys despite the challenges and complexities involved in fielding them in the LMICs. Two telephonic surveys conducted in Delhi and its neighbouring areas during COVID times found response rates to be ‘reasonable’, at 77 per cent and 64 per cent, respectively (Pramanik et al., 2022b). The response to telephonic surveys in West African countries during the Ebola crisis was high in Guinea (World Bank, 2016) and Sierra Leone (World Bank, 2015a) but less so in Liberia (World Bank, 2015b). Another survey conducted in Ghana found that a large majority of the eligible respondents completed the interviews (Etang et al., 2015). In contrast, the response to Social Attitudes Research, India was muted, yet it was high as compared to the other phone surveys in high-income countries (Coffey et al., 2018).

Given the comparatively high response rates to surveys, the need for studying response rates and their contours has not been felt by the researchers. However, it is imperative to also examine the response rates in LMICs for the following reasons. First, it is important to identify barriers that may prevent certain groups from participating in surveys. The systematic exclusion of some groups from surveys can significantly impact the validity and generalisability of the survey results. Only through a careful examination of these dimensions can researchers achieve a more accurate representation of the population and draw valid conclusions from their data. Furthermore, beyond the basic characteristics of gender and rural–urban location, little is known about the response to surveys by other demographic and socio-economic variables. Do the response rates vary by the economic status of the households? Are the well-off or rich as likely to respond to surveys as poor households? Is the likelihood of response similar across different ethnic/religious groups and in the Indian case are the response rates similar across caste groups? Is the propensity to respond similar across education levels? Enough is not known to find answers to these questions. But, if we were to look at the response rate to the Indian DHS (also the NFHS), we find that the response rates are not uniformly high across all the States. Urbanised States/Union territories such as Delhi and Chandigarh, which are also metro cities, stand out in terms of a response that is far lower than the national response rate. For instance, in the case of NFHS-5 (2015–16), it was 52.9 per cent in Delhi and 78.4 per cent in Chandigarh, while it was 97.6 per cent at the all-India level.

Second, the presence of household and/or non-household members other than the intended respondent is a routine feature of survey settings in LMICs. In many instances, they participate in the survey procedure too and answer on behalf of the respondents. This has a bearing on data quality. The presence

of members other than the eligible respondent should, therefore, be part of the repertoire of ways in which response rates are reported in these countries.

Third, the issue of proxy response is particularly pertinent for telephonic surveys, given that not all members have equal access to mobiles even when a household owns a mobile phone in LMICs. Women typically have less access to them than men (Barboni et al., 2018). It becomes necessary to make a distinction between instances where the respondent herself answered the phone versus where it was a proxy response. Further, proxy response can have an effect on the quality of data collected. Thus, it becomes important to study the characteristics of individuals who are prone to be replaced by proxy respondents as also of the proxy respondents themselves.

3. RESEARCH QUESTIONS

It is with the broad objective of understanding survey response in the context of LMICs and specifically response to telephonic surveys in times of COVID that this article poses the following four questions for a telephonic survey carried out in NCR in India:

1. What were the response rates to the survey before the pandemic, during the COVID-induced lockdowns and as the lockdown was being gradually eased?
2. Did the response rates differ by demographic characteristics and for different socio-economic status (SES) groups?

Household/Non-household members responding on behalf of the intended respondents is a feature of face-to-face surveys in LMICs. It would be of particular concern in telephonic interviews, where the interviewer has even less control over the survey settings and cannot directly intervene to ensure responses from the intended respondent. The above two questions are, therefore, repeated for the proxy response as follows:

3. What were the proxy response rates to the survey before the pandemic, during the COVID-induced lockdowns and when the lockdown was being gradually lifted?
4. Did the proxy response rates differ by demographic characteristics and for different SES groups?

First and foremost, we do a comparative assessment of the (proxy) response to the survey before the pandemic with the response when a lockdown was imposed

as a means to contain the virus and also when the lockdown was (gradually) lifted and peoples' movement resumed. This will allow us to disentangle the extent to which the (high) response observed during the pandemic was a function of the lockdown itself. India had one of the strictest lockdowns with severe mobility restriction that was accompanied by a loss of employment (Desai et al., 2021). We hypothesise that employment loss, along with an increase in free time following the imposition of the lockdown, drove up the response rates to telephonic surveys. However, as the lockdown was relaxed and people went back to their jobs and daily 'usual' routines, the response rates too fell back to their earlier pre-COVID levels.

Second, unequal digital access means that the likelihood of responding to phone surveys is not equally spread across different demographic and socio-economic groups. The response rate is expected to be lower in rural areas. Gender-restrictive norms may particularly mean that women are less likely to answer the phone than men. Those who were in employment that were particularly adversely affected by the lockdown such as daily wage earners and those with small non-farm businesses are also expected to be better respondents than those whose livelihoods were less severely affected, such as farmers and salaried earners, because the former would be available to respond to telephonic surveys due to loss of employment.

4. DATA AND METHODS

The article uses data from the Delhi Metropolitan Area Study-Telephone Survey (DMAS-T) to answer the research questions outlined above. DMAS-T was a monthly telephonic survey designed to track the employment of men and women over the period of a year. It consisted of a short questionnaire, which took about five minutes to administer. DMAS-T was a follow-up survey to the earlier face-to-face Delhi Metropolitan Area Study (DMAS). The baseline DMAS was conducted in 5,255 households between February and May 2019 in NCR, which comprises India's capital city, Delhi, along with some districts in the neighbouring States of Rajasthan, Uttar Pradesh and Haryana. The sample selected was representative of the 31 districts of Delhi NCR. The baseline questionnaire covered a variety of topics, such as the income, consumption, employment, health and education of each member of the household.

Roughly one-fourth of the baseline (DMAS) households was randomly selected for the follow-up telephonic survey on employment (DMAS-T). One male and one female each in the working-age group of 21–59 years were, in

turn, selected from these households for the survey. The analytical sample thus consisted of 1,174 men and 1,209 women from 1,269 randomly selected households. The telephone numbers were obtained during the baseline face-to-face survey. The original survey was planned to cover the employment history of individuals over a year. Each respondent received a phone call 30 days after the baseline survey; subsequent calls were made every 30 days; 12 rounds of monthly calls were accordingly planned from April 2019 to June 2020. With the onset of COVID, the panel was extended until September 2021 to cover the employment status during COVID. This gave us a total sample size of 57,903 telephonic interviews conducted between 1 April 2019 and 30 June 2021.

The outcome variable for the first and second research questions is the completion of interviews. If all questions in an interview are answered, it is coded as '1', else it is coded as '0'. The final sample included 57,903 attempted telephonic interviews conducted between 1 April 2019 and 30 June 2021.

The outcome variable for the third and fourth research questions is proxy response. In this case, proxy response is defined as the completion of the interview by a household member other than the intended respondent. If the completed interview was answered by the intended person whose employment information was sought, the variable is coded as '0'. If it is a proxy respondent who provided the information, it is coded as '1'. The interviewers were instructed to allow for proxy responses only if the intended respondent could not be reached. The proxy respondent had to be an adult member belonging to the same household as the intended respondent. The final sample of all interviews that were completed was 39,976.

The key variable of interest for the first and third research questions is the status of lockdown at the time of the interview. The lockdown status is measured in terms of four categories. All interviews conducted before the lockdown, that is, before 31 March 2020, are coded as '0'. On 22 March 2020, the Government of India imposed a 21-day national lockdown across the country, which extended till 31 May 2020. It was one of the most strictly implemented lockdowns to contain the spread of COVID. Interviews conducted during this period are coded as '1'. There was a phased easing of the lockdown starting 1 June 2020 till 30 April 2021. When the second wave of COVID hit the country in the summer of 2021, the respective states imposed their own lockdowns. Interviews conducted between 1 June 2020 and 30 April 2021 are coded as '2', and those after 1 May 2021 are coded as '3'. While some forms of restrictions lasted throughout the survey, the strictest lockdown was the national lockdown from 24 March to 31 May 2020 (Pramanik et al., 2022a). Our hypothesis is that the national lockdown drove up the response rate of DMAS-T. Response rates

are expected to drop to pre-COVID times as the lockdown was gradually eased and are expected to rise again during the second lockdown and drop thereafter as restrictions were removed.

The key variables of interest for the second and fourth research questions are gender, type of employment and location. All these variables are measured at the time of the baseline household DMAS survey. The gender of the respondent is binary-coded. Women are hypothesised as less likely to be respondents of telephonic surveys than men. The employment status of an individual at the baseline was recorded into one of the four categories: working in a household-run enterprise including a farm, working for wage or salary, a combination of the two and out of the workforce. We rely on the baseline for employment statistics because we do not have complete information on individuals throughout the survey period. Sample respondents are classified to be residing either in the capital city of Delhi or the urban or rural areas in the States of Haryana, Rajasthan or Uttar Pradesh that are part of the National Capital Territory. The response is hypothesised to be lower in urban areas while it is expected to be higher for those who were engaged in wage employment and non-farm business employment. The loss of employment that accompanied the lockdown adversely affected the latter two groups (NCAER, 2020–21) and it is expected that they were more likely to be available to respond to the survey during this period.

Other control variables in the model include age, marital status and level of education, along with household characteristics such as religion, caste, wealth quintile² and the number of household members. We hypothesise that younger respondents are more likely to respond to telephonic surveys. *A priori*, we do not hypothesise any difference in response rates by marital status or caste groups but it is possible that the protests by Muslim communities against the Citizenship Amendment Act that preceded COVID in India increased their levels of suspicion of public surveys and reduced their participation in the same.³ Respondents belonging to households in the lower strata of the asset quintile are more likely to participate in surveys than their richer peers. If a single telephone is accessed by a large number of household members, it is likely to reduce the likelihood of response. Thus, we expect the number of household members to be inversely associated with the probability of responding to telephonic surveys. Education is also expected to be inversely associated with response rates.

² Quintiles are based on the number of assets that the household owns. Information on 30 household assets was collected in the baseline survey.

³ See, for example, the following news item, https://www.business-standard.com/article/economy-policy/caa-protest-fallout-govt-likely-to-defer-key-socio-economic-survey-120022100041_1.html

We run mixed-effects logistic regression models to answer each of the above four questions. The logistic regression analysis is motivated by the fact that the outcome variables are binary. We treat the data as a panel set, with each individual having repeated monthly observations. The mixed-effects models allow us to account for the fact that the demographic and socio-economic characteristics of the individuals do not vary over time while the status of the lockdown changes over time. We use the 'xtlogit' command in the statistical software Stata.

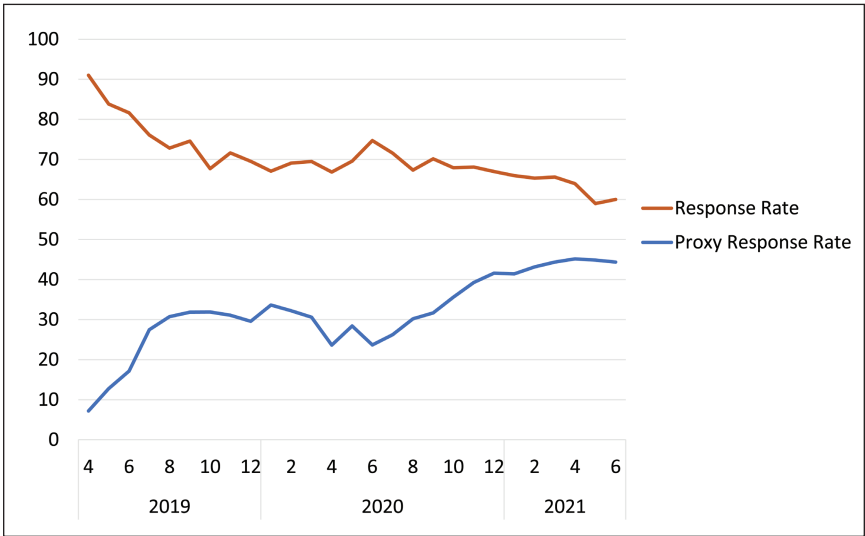
We run two sets of step-wise regression models for each of the two outcome variables—completion (or not) of all the attempted interviews and proxy response (or not) of the completed interviews. In the first model, the only explanatory variable is the status of the lockdown. The base category for the variable includes all the interviews carried out before the first lockdown went into effect. The survey round is added in the second model to account for survey fatigue. Attrition due to survey fatigue is common across longitudinal studies (Axinn et al., 2012). It is accounted in the regression models by a continuous variable taking values 1 to 27, depending on the round of the panel. The higher the recorded survey round, the greater is the survey fatigue and the lower is the response rate. The third and full model includes, along with the status of the lockdown and the survey round, variables controlling for gender, type of employment, location of the household and other demographic and household controls.

To understand how the response and proxy response rates differ across demographic and socio-economic characteristics once the status of the lockdown is taken into consideration, we estimate the predicted probabilities of response of different groups using the 'margins' command in Stata. This allows us to compare the predicted probability of completing an interview and the predicted probability of an interview answered by a proxy respondent by the status of the lockdown.

5. RESULTS

Figure 1 shows the response and proxy response rates throughout the survey. In the first month of the survey, that is, April 2019, the response rate was 91 per cent. Between April and September 2019, the rate fell by roughly 16 percentage points, from 91 per cent to 75 per cent. The response rate fell further, reaching 69 per cent in February 2020, a month before the onset of the COVID pandemic in the research area. However, once the national lockdown

Figure 1 Response and Proxy Response Rate by Survey Month



Source: Delhi Metropolitan Area Study-Telephone Survey (DMAS-T).

was imposed by the end of March 2020, the response rate picked up again—it was the highest in June 2020, at about 75 per cent. It subsequently tapered off though it increased in some months. The proxy response rate, on the other hand, went up from 7 per cent in April 2019 to 32 per cent in September 2019. It was 32 per cent in February 2020. It dropped off as the lockdown was imposed and the intended respondent was available to answer the telephonic survey. It was the lowest in June 2020, mirroring the highest response rate in this month since the survey was launched in April 2019.

The declining response rate does not imply that respondents dropped off from the survey completely, rather the frequency of answering the interviews reduced. About 6 per cent of the respondents did not answer a single round, about 3 per cent answered only a single round while about 18 per cent answered all the rounds.

The result from the logistic regression with the outcome variable as the completion status of the interview is presented in Table 2. The results are displayed in the odds ratio; values between 0 and 1 indicate a negative association between the independent and the dependent variable, and values above 1 indicate a positive association. In the first model where the only variable is the

Table 2 Outline of Regression Models with (Proxy) Response Rates as Outcome Variables

<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<i>Lockdown Period</i>	<i>Lockdown Period</i>	<i>Lockdown Period</i>
	<i>Survey Round</i>	<i>Survey Round</i>
		Gender
		Male (Ref)/Female
		Location
		Delhi (Ref)/Other urban areas/Rural
		Type of work
		No work (Ref)/Wage only/Household enterprise only/Multiple activities
		Age category
		20–30 years (Ref)/31–40 years/41–50 years/51–60 years
		Marital status
		Unmarried (Ref)/Married/Divorced or separated or widowed
		Level of education
		No formal education (Ref)/Grades 1–5/Grades 6–10/Grades 11–12/Above grade 12
		Wealth quintile
		Poorest (Ref)
		Religion/Caste group
		Number of household members

status of the lockdown, the results indicate that the probability of interview completion was lower in the first lockdown as compared to the pre-lockdown period, with an odds ratio of 0.66 significant at $p < .001$. The probability of interview completion further decreased during the post-lockdown period, with an odds ratio of 0.52, and in the second lockdown period, with an odds ratio of 0.26, both values being significant at $p < .001$.

The second model in Table 2 includes a control for survey fatigue through a variable that indicates the survey round. Once this variable is included, the earlier result presented in Model 1 of a lower odds of response for each of the successive phases of lockdown no longer holds. Instead, we find that the probability of completing a survey during the lockdown period was higher as compared to the pre-lockdown period, with an odds ratio of 1.23 being statistically significant at $p < .001$. The probability of completing the interview

continues to be higher in the post-(national) lockdown phase and during the second lockdown phase as compared to the pre-lockdown period, with odds ratios of 1.68 and 1.48, respectively, both significant at $p < .001$. As anticipated, each round of data collection reduced the odds of response. The variable measuring survey wave was negatively correlated with the odds of completing an interview (the odds ratio was 0.91; significant at $p < .001$).

To answer the second research question, ‘Did the response rates differ by demographic characteristics and for different SES groups?’, we added the demographic and socio-economic characteristics of the surveyed individuals to the existing variables of the lockdown phase and survey fatigue in Table 3.

Table 3 Odds Ratio from Regression Model with Response Rate as the Outcome Variable

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Lockdown phase (Ref: Pre-lockdown phase)	0.664*** (7.69)	1.234*** (3.39)	1.237*** (3.44)
National lockdown			
Post-national lockdown	0.523*** (21.71)	1.684*** (7.82)	1.710*** (8.04)
Second state level lockdowns	0.265*** (27.55)	1.476*** (3.91)	1.509*** (4.13)
Survey wave		0.907*** (19.49)	0.906*** (19.71)
Gender (Ref: Male)			1.149
Female			(0.86)
Age group (Ref: 20–30 years)			1.245
31–40 years			(1.29)
41–50 years			1.046
			(0.25)
51–60 years			1.286
			(1.17)
Marital status (Ref: Married)			0.66
Unmarried			(1.32)
Separated/Widowed			1.238
			(0.68)
Level of education (Ref: No formal education)			1.389
Class 1–5			(1.53)
Class 6–10			1.564*
			(2.49)
Class 11–12			1.381
			(1.34)

(Table 3 continued)

(Table 3 continued)

	Model 1	Model 2	Model 3
Class 12 and above			1.021 (0.09)
Type of employment (Ref: No employment)			0.919 (0.45)
Only wage employment			
Employed only in household enterprise			1.242 (1.15)
Employed in multiple job activities			1.278 (0.93)
Asset quintile (Ref: Poorest)			1.18 (0.81)
Second quintile			
Middle quintile			1.750** (2.62)
Fourth quintile			1.4 (1.51)
Richest			0.479** (2.96)
Religion (Ref: Hindu)			1.159 (0.68)
Muslim			
Other religion			0.163*** (3.81)
Caste (Ref: Forward caste)			1.366* (2.04)
OBC			
SC/ST			1.446* (2.14)
Location (Ref: Metro)			2.458*** (5.21)
Urban			
Rural			2.248*** (4.71)
Number of household members			1.05 (1.74)

Source: Author's calculation based on Delhi Metropolitan Area Study-Telephone Survey (DMAS-T).

Notes: Observations: 57,903. Exponentiated coefficients; *t* statistics in parentheses. **p* < .05; ***p* < .01; ****p* < .001.

The results are presented in the third model of Table 2. Confirming the results of Table 3, we find that the probability of completing a survey during the lockdown period was higher as compared to the pre-lockdown period, with a statistically significant odds ratio ($p < .001$). There is survey fatigue too; the odds of completing a survey reduced with each survey round.

Contrary to our hypothesis, we do not find any association between gender and the likelihood of completion of a telephonic interview. There are also no

differences by an individual's work status. The probability of completing the interview by respondents living in the urban areas of the States of Haryana, Rajasthan or Uttar Pradesh that are part of the National Capital Territory was higher than those in the capital city of Delhi, with an odds ratio of 2.46, significant at $p < .001$. This is also true for rural respondents living in the NCR (an odds ratio of 2.45, significant at $p < .001$). These findings imply that as regards participation in a telephone survey, the respondents' behaviour in urban areas outside of Delhi was more similar to that of rural respondents than those residing in Delhi.

As compared to the respondents from the lowest quintile, the respondents in the highest wealth quintile were less likely to complete the survey, with an odds ratio of 0.48, significant at $p < .01$. On the other hand, respondents from the middle quintile were significantly more likely to complete the interview than their counterparts in the lowest quintile (odds ratio of 1.75, significant at $p < .01$). While there was no difference between Hindus and Muslims in their likelihood of response, contrary to what we had expected, those belonging to religions other than these two major religions were less likely to respond to surveys. Respondents belonging to the Scheduled Castes/Scheduled Tribes (odds ratio of 1.37, significant at $p < .05$) and Other Backward Classes (OBCs) (odds ratio of 1.45, significant at $p < .05$) were more likely to answer telephonic surveys than the forward castes. There was no difference in telephonic response rates by levels of education except for those with upper primary/secondary level of education, who were more likely to respond than their counterparts without any formal education. Other characteristics of individuals, including age, marital status and the number of household members at the baseline, were not found to be significantly correlated with the probability of completing the interview.

Next, we look at the predicted probabilities of individuals completing the survey by the status of lockdown for three variables of interest—gender, location and type of employment (Table 4). The predicted probability of men completing the survey before the imposition of the first lockdown was 0.65 (95% confidence interval: 0.63 and 0.68) while for women, it was 0.67 (95% confidence interval: 0.64 and 0.69). During the first lockdown, the predicted probability increased to 0.67 (95% confidence interval: 0.65 and 0.70) and 0.69 (95% confidence interval: 0.67 and 0.71), respectively, for men and women. During the post-lockdown period, it stood at 0.71 (95% confidence interval: 0.69 and 0.73) and 0.72 (95% confidence interval: 0.70 and 0.74) for men and women, respectively. The corresponding probabilities during the second lockdown period for men and women, were 0.70 (95% confidence interval: 0.67 and 0.72) and 0.71 (95% confidence interval: 0.69 and 0.74), respectively.

**Table 4 Predicted Probabilities with Response Rate as the Outcome
Variable by Selected Characteristics**

	<i>Predicted Probability</i>	<i>Standard Error</i>	<i>z</i>	<i>P > z </i>	<i>95% Confidence Interval</i>	
<i>Lockdown Status # Gender</i>						
Pre-lockdown # Male	0.65	0.01	53.08	0.00	0.63	0.68
Pre-lockdown # Female	0.67	0.01	55.95	0.00	0.64	0.69
Lockdown # Male	0.67	0.01	54.24	0.00	0.65	0.70
Lockdown # Female	0.69	0.01	57.33	0.00	0.67	0.71
Post-lockdown # Male	0.71	0.01	63.12	0.00	0.69	0.73
Post-lockdown # Female	0.72	0.01	67.13	0.00	0.70	0.74
Second lockdown # Male	0.70	0.01	52.89	0.00	0.67	0.72
Second lockdown # Female	0.71	0.01	56.02	0.00	0.69	0.74
<i>Lockdown status # Location</i>						
Pre-lockdown # Metro	0.59	0.02	37.06	0.00	0.55	0.62
Pre-lockdown # Urban	0.69	0.01	48.08	0.00	0.66	0.72
Pre-lockdown # Rural	0.68	0.01	60.54	0.00	0.66	0.70
Lockdown # Metro	0.61	0.02	37.94	0.00	0.58	0.64
Lockdown # Urban	0.71	0.01	50.50	0.00	0.68	0.74
Lockdown # Rural	0.70	0.01	61.61	0.00	0.68	0.72
Post-lockdown # Metro	0.65	0.02	42.75	0.00	0.62	0.68
Post-lockdown # Urban	0.74	0.01	58.85	0.00	0.72	0.77
Post-lockdown # Rural	0.73	0.01	71.81	0.00	0.71	0.75
Second lockdown # Metro	0.63	0.02	37.88	0.00	0.60	0.67
Second lockdown # Urban	0.73	0.01	51.31	0.00	0.70	0.76
Second lockdown # Rural	0.72	0.01	59.10	0.00	0.70	0.75
<i>Lockdown status # Type of employment</i>						
Pre-lockdown # No work	0.65	0.02	42.43	0.00	0.62	0.68
Pre-lockdown # Only wage	0.64	0.01	45.92	0.00	0.62	0.67
Pre-lockdown # Household enterprise	0.68	0.01	47.49	0.00	0.65	0.70
Pre-lockdown # Multiple activities	0.68	0.02	29.90	0.00	0.64	0.72
Lockdown # No work	0.68	0.02	44.00	0.00	0.65	0.71
Lockdown # Only wage	0.67	0.01	47.22	0.00	0.64	0.69
Lockdown # Household enterprise	0.70	0.01	49.46	0.00	0.67	0.73
Lockdown # Multiple activities	0.70	0.02	31.70	0.00	0.66	0.75
Post-lockdown # No work	0.71	0.01	50.40	0.00	0.68	0.74
Post-lockdown # Only wage	0.70	0.01	54.30	0.00	0.68	0.73
Post-lockdown # Household enterprise	0.73	0.01	57.23	0.00	0.71	0.76

(Table 4 continued)

(Table 4 continued)

	<i>Predicted Probability</i>	<i>Standard Error</i>	<i>z</i>	<i>P > z </i>	<i>95% Confidence Interval</i>	
Post-lockdown # Multiple activities	0.74	0.02	36.03	0.00	0.70	0.78
Second lockdown # No work	0.70	0.02	44.17	0.00	0.67	0.73
Second lockdown # Only wage	0.69	0.01	46.80	0.00	0.66	0.72
Second lockdown # Household enterprise	0.72	0.01	49.65	0.00	0.69	0.75
Second lockdown # Multiple activities	0.72	0.02	33.08	0.00	0.68	0.77

Source: Author’s calculation based on Delhi Metropolitan Area Study-Telephone Survey (DMAS-T).

Thus, the results do not indicate significantly different predicted probabilities for men and women as regards completion of the survey interviews during any of the lockdown phases. Moreover, the difference in change in the predicted probability of completing the interview was similar for both men and women with a change in the lockdown status.

The predicted probability of completing the interview pre-lockdown in the capital city of Delhi was 0.59 (95% confidence interval: 0.55 and 0.62), the probability for urban areas outside of the city of Delhi was 0.69 (95% confidence interval: 0.66 and 0.72) and in rural areas it was 0.68 (95% confidence interval: 0.66 and 0.70). The predicted probabilities increased by 0.02 for the capital city during the first lockdown and further by 0.04 for all locations during the post-lockdown period before falling during the second lockdown, though not at the levels of the pre-lockdown phase. The predicted probability of completing the interview remained low for respondents in Delhi during all phases of the lockdown as compared to the urban areas outside Delhi and rural areas. On the other hand, we do not find any significant difference in the predicted probability of completing the interview based on the work status of the individuals.

Table 5 displays the results of logistic regression where the outcome variable is the proxy response to the interview. The results indicate the probability of a proxy response, with the latter defined as a response to the survey from a household member other than the intended individual. We use step-wise regression, as outlined previously. The first model indicates that the probability of a proxy respondent completing the interview decreased during the first lockdown as compared to the pre-lockdown phase, with an odds ratio of 0.88 ($p < .05$). The probability increased during the post-lockdown period, with an

Table 5 Odds Ratio from Regression Model with Proxy Response Rate as the Outcome Variable

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Lockdown phase (Ref: Pre-lockdown phase)	0.877* (2.26)	0.314*** (16.71)	0.313*** (16.76)
National lockdown			
Post-national lockdown	2.637*** (28.51)	0.408*** (12.00)	0.403*** (12.19)
Second state level lockdowns	4.370*** (24.55)	0.280*** (11.06)	0.276*** (11.20)
Survey wave		1.168*** (27.61)	1.168*** (27.74)
Gender (Ref: Male)			12.24*** (18.61)
Female			0.767 (1.88)
Age group (Ref: 20–30 years)			0.919 (0.56)
31–40 years			0.877 (0.74)
41–50 years			1.847* (2.22)
51–60 years			0.420** (3.28)
Marital status (Ref: Married)			0.583** (3.11)
Unmarried			0.574*** (3.78)
Separated/Widowed			0.601* (2.56)
Level of education (Ref: No formal education)			0.465*** (3.78)
Class 1–5			0.653** (2.79)
Class 6–10			0.563*** (3.79)
Class 11–12			0.342*** (4.87)
Class 12 and above			0.867 (0.85)
Type of employment (Ref: No employment)			1.152 (0.81)
Only wage employment			
Employed only in household enterprise			
Employed in multiple job activities			
Asset quintile (Ref: Poorest)			
Second quintile			
Middle quintile			

(Table 5 continued)

(Table 5 continued)

	Model 1	Model 2	Model 3
Fourth quintile			1.182 (0.91)
Richest			1.571* (2.16)
Religion (Ref: Hindu)			0.857 (0.88)
Muslim			1.648 (1.12)
Other religion			0.919 (0.67)
Caste (Ref: Forward caste)			0.913 (0.64)
OBC			0.755 (1.95)
SC/ST			0.445*** (5.66)
Location (Ref: Metro)			1.072** (3.06)
Urban			
Rural			
Number of household members			

Source: Author’s calculation based on Delhi Metropolitan Area Study-Telephone Survey (DMAS-T).

Notes: Observations: 39,976. Exponentiated coefficients; t statistics in parentheses. * $p < .05$; ** $p < .01$; *** $p < .001$.

odds ratio of 2.64, and during the second lockdown period, with an odds ratio of 4.37, both significant at $p < .001$.

The second model in Table 5 incorporates a measure of survey fatigue along with a measure of the lockdown phase. The results indicate that the probability of proxy response during the lockdown period was lower as compared to the pre-lockdown period, with an odds ratio of 0.31, statistically significant at $p < .001$. The probability of a proxy response was also lower during the post-(national) lockdown and during the second lockdown as compared to the pre-lockdown period, with statistically significant odds ratios of 0.41 and 0.28, respectively ($p < .001$). In contrast to the results pertaining to the response rate given in Table 2, each successive survey wave increased the odds of a proxy response (odds ratio of 1.17, $p < .001$).

We add the background characteristics of the individuals surveyed in the third model to answer the fourth research question on the likelihood of proxy response by different demographic and socio-economic groups. When the intended respondent was a woman, the odds of a proxy response were 12.24 times greater throughout the survey period as compared to when the respondent

was a man ($p < .001$). Interviews in rural locations in NCR were less likely to be completed by proxy respondents as compared to interviews in Delhi (odds ratio of 0.45, $p < 0.001$). On the other hand, there was no significant difference with respect to proxy response between Delhi and other urban areas in NCR. The proxy response was also lower in all employment groups other than those that were not employed at the time of the baseline survey. One explanation for this counter-intuitive result is probably a change in employment status since the employment status was first measured at the baseline.

As regards the other demographic and socio-economic characteristics, when compared to the (intended) married respondents, the probability of a proxy respondent completing the interview was higher when the intended respondent was never married (odds ratio of 1.85, significant at $p < .05$) and the likelihood of a proxy respondent completing the interview was lower when the intended respondent was widowed or separated (odds ratio of 0.42, significant at $p < .01$). Higher education was correlated with a lower proxy response. As compared to individuals with no formal education, when the intended respondent had primary years of schooling, the odds of a proxy response were 0.58 times lower ($p < .01$). Similarly, the odds ratio of a proxy response was less than 1 when the intended respondent had between 6–10 and 11–12 years of schooling. Individuals who had completed at least high school education were also less likely to have a proxy respondent, with an odds ratio of 0.47, significant at $p < .001$. The odds of a proxy response increased with the number of members in the household. There were no differences in the probability of proxy response by religion or caste, but the proxy response was likely to be greater in the case of respondents belonging to households in the richest quintile.

The predicted probabilities of completing the interview by a proxy are reported in Table 6 for three key variables – gender, location and employment status. The predicted probability of a proxy response was high for female respondents as compared to male respondents throughout the survey period. For men, the predicted probability of a proxy response was 0.21 (95% confidence interval: 0.19 and 0.23) while for women it was 0.54 (95% confidence interval: 0.52 and 0.57), respectively, during the pre-lockdown period. It decreased for both men and women during the lockdown period. The predicted probability of a proxy response when the intended respondent was a man was 0.11 (95% confidence interval: 0.09 and 0.12), while for women it was 0.37 (95% confidence interval: 0.35 and 0.40). Thus, while the predicted probability for a proxy response reduced by half for men, it reduced by only about a third for women. The predicted probabilities of a proxy response remained about the same for men during the post-(national) lockdown and second lockdown periods, at 0.13 (95% confidence interval: 0.11 and 0.14) and 0.10 (95% confidence

Table 6 Predicted Probabilities with Proxy Response Rate as the Outcome Variable by Selected Characteristics

	<i>Predicted Probability</i>	<i>Standard Error</i>	<i>z</i>	<i>P > z </i>	<i>95% Confidence Interval</i>	
<i>Lockdown Status # Gender</i>						
Pre-lockdown # Male	0.21	0.01	20.85	0.00	0.19	0.23
Pre-lockdown # Female	0.54	0.01	41.83	0.00	0.52	0.57
Lockdown # Male	0.11	0.01	15.39	0.00	0.09	0.12
Lockdown # Female	0.37	0.01	27.88	0.00	0.35	0.40
Post-lockdown # Male	0.13	0.01	17.32	0.00	0.11	0.14
Post-lockdown # Female	0.41	0.01	32.46	0.00	0.39	0.44
Second lockdown # Male	0.10	0.01	12.97	0.00	0.09	0.12
Second lockdown # Female	0.36	0.02	22.56	0.00	0.33	0.39
<i>Lockdown status # Location</i>						
Pre-lockdown # Metro	0.44	0.02	25.55	0.00	0.40	0.47
Pre-lockdown # Urban	0.40	0.02	24.88	0.00	0.37	0.43
Pre-lockdown # Rural	0.32	0.01	28.57	0.00	0.30	0.35
Lockdown # Metro	0.28	0.02	18.26	0.00	0.25	0.31
Lockdown # Urban	0.24	0.01	18.11	0.00	0.22	0.27
Lockdown # Rural	0.19	0.01	20.05	0.00	0.17	0.21
Post-lockdown # Metro	0.31	0.02	20.54	0.00	0.28	0.34
Post-lockdown # Urban	0.27	0.01	20.40	0.00	0.25	0.30
Post-lockdown # Rural	0.21	0.01	22.74	0.00	0.20	0.23
Second lockdown # Metro	0.26	0.02	16.04	0.00	0.23	0.30
Second lockdown # Urban	0.23	0.01	15.77	0.00	0.20	0.26
Second lockdown # Rural	0.18	0.01	16.11	0.00	0.15	0.20

(Table 6 continued)

(Table 6 continued)

	<i>Predicted Probability</i>	<i>Standard Error</i>	<i>z</i>	<i>P > z </i>	<i>95% Confidence Interval</i>	
<i>Lockdown status # Type of employment</i>						
Pre-lockdown # No work	0.43	0.02	25.94	0.00	0.39	0.46
Pre-lockdown # Only wage	0.37	0.01	24.91	0.00	0.34	0.39
Pre-lockdown # Household enterprise	0.34	0.01	23.23	0.00	0.32	0.37
Pre-lockdown # Multiple activities	0.28	0.02	12.70	0.00	0.24	0.32
Lockdown # No work	0.27	0.01	18.47	0.00	0.24	0.30
Lockdown # Only wage	0.22	0.01	18.05	0.00	0.20	0.24
Lockdown # Household enterprise	0.20	0.01	17.02	0.00	0.18	0.23
Lockdown # Multiple activities	0.16	0.02	9.84	0.00	0.13	0.19
Post-lockdown # No work	0.30	0.01	20.62	0.00	0.27	0.33
Post-lockdown # Only wage	0.25	0.01	20.26	0.00	0.22	0.27
Post-lockdown # Household enterprise	0.23	0.01	18.97	0.00	0.21	0.25
Post-lockdown # Multiple activities	0.18	0.02	10.56	0.00	0.15	0.21
Second lockdown # No work	0.25	0.02	15.95	0.00	0.22	0.28
Second lockdown # Only wage	0.21	0.01	15.40	0.00	0.18	0.23
Second lockdown # Household enterprise	0.19	0.01	14.60	0.00	0.17	0.22
Second lockdown # Multiple activities	0.15	0.02	9.09	0.00	0.11	0.18

Source: Author's calculation based on Delhi Metropolitan Area Study-Telephone Survey (DMAS-T).

interval: 0.09 and 0.12), respectively. The corresponding probabilities for women were higher at 0.41 (95% confidence interval: 0.39 and 0.44) and 0.36 (95% confidence interval: 0.33 and 0.39), respectively, but not as high as during the pre-lockdown phase.

The predicted probability for a proxy response when the intended respondent was from Delhi was high as compared to that for respondents from other areas. The probability of completing an interview by a proxy for Delhi was 0.44 (95% confidence interval: 0.40 and 0.47) during the pre-lockdown period. It fell to 0.28 (95% confidence interval: 0.25 and 0.31) during the national lockdown but increased marginally during the post-(national) lockdown phase to 0.31 (95% confidence interval: 0.28 and 0.34), and during the second lockdown period the predicted probability was 0.26 (95% confidence interval: 0.23 and 0.29). The predicted probability of a proxy response in other urban areas during the pre-lockdown period was 0.40 (95% confidence interval: 0.36 and 0.43). It reduced to 0.24 (95% confidence interval: between 0.22 and 0.27) during the national lockdown, increased marginally to 0.27 post the national lockdown and dropped again to 0.23 during the second lockdown. The probabilities of proxy response in rural areas were the lowest.

Finally, in terms of the predicted probabilities of proxy response by the type of employment, across all employment types, the probabilities were higher for the pre-lockdown period as compared to any other period. The predicted probability reduced by half, that is, from 0.28 to 0.15, for those engaged in multiple job activities as reported at the time of the DMAS household survey from the pre-lockdown period to the second lockdown phase, perhaps reflecting the loss in economic activities because of the imposition of the lockdown.

To summarise then, the results confirm that after controlling for survey fatigue, the response rates increased during the COVID-induced lockdown while the probability of proxy response (i.e., the response from someone other than the intended respondent) decreased. There are differences in the likelihood of response by socio-economic background characteristics too with differences and parallels emerging between the overall response and proxy response rates. For example, lower access to phones along with patriarchal norms led to a situation where women were more likely to have proxy respondents than men though there was no difference in the response rates of men and women *per se*. The response rates were higher in urban and rural areas outside the capital city of Delhi. However, the proxy response was likely to be the lowest in rural areas with no reported difference between Delhi and urban areas outside of it within NCR. Employment loss due to the lockdown was expected to lead to an increase in the response among the group hardest hit by it, viz., those engaged

in wage employment. The results for the overall response rate do not support this hypothesis, while rather counter-intuitively the proxy response was also lower among all employment groups other than those who were not employed at the time of the baseline survey. Individuals in the richest quintile were least likely to answer the telephonic survey, instead providing a proxy response as compared to those in the poorest quintile. Scheduled Caste/Scheduled Tribe and OBC respondents were more likely to answer telephonic surveys than the forward castes, but there were no differences between the two categories with respect to the proxy response. The level of education does not necessarily reduce the overall response but those without formal education were most likely to have had a proxy response.

6. CONCLUSION

In conclusion, since surveys in LMICs evoke a much higher response than those in the developed countries, it should not be assumed that researchers in the developing world do not have to pay attention to understanding the various nuances of survey response. In this article, we show that underneath the near-universal response to the telephonic survey conducted in NCR between April 2019 and June 2021, there is much heterogeneity in response/non-response as also proxy response by phase of the lockdown, duration of the survey and other key socio-economic characteristics.

We hypothesised that the lockdown with the accompanying restrictions on mobility increased availability of time to answer to DMAS-T. However, the larger context of the pandemic was of uncertainty, anxiety and stress. Under these extenuating circumstances, greater availability of time may not be the only reason driving up the response rate. Other plausible reasons include isolation and the need to talk to others, including strangers. People may also be responding to the survey as a means with which to connect and/or communicate with the authorities about their difficult situations. The latter may be one of the reasons as to why we do not find the expected relationship between employment status and the likelihood of responding to the telephonic survey. In this backdrop, the factors driving up the response to DMAS-T may not have been fully articulated.

There are other limitations in the study, which ought to be plugged in future research. We noted that 18 per cent of the respondents participated in all the panels of DMAS-T. Separate analysis is needed to understand this group of respondents. We have also not delved much into non-response in the analysis

presented here. Briefly, non-response to telephonic interviews can be either due to the refusal to respond to the survey or other technical reasons. Overall about 31 per cent of the non-response is because of the respondents' refusal to participate in the survey. It ranges from 28.3 per cent to 33.6 per cent from prior to the lockdown to 34 per cent during the second lockdown phase. Further analysis is necessary to understand the characteristics of non-response, that is, whether it is random or systematic.

Inability to establish contact with the respondent because of technical reasons as an incorrect phone number is another reason for non-response. However, in this study the phone numbers of the participants were obtained and confirmed during the prior (baseline DMAS) face-to-face survey. Consequently, a vast majority of the phone numbers used in the study had been verified before the start of the telephonic survey as valid. Nevertheless, non-response because of reasons broadly classified as 'other than refusal' accounts for an overwhelming 69 per cent of non-response. A better accounting of reasons other than refusal, including technical ones such as lack of signal, call drops, call not being picked up or call being disconnected, is needed in future surveys to better understand the nature of exclusion in these surveys.

Yet another limitation relates to lack of information on the characteristics of the proxy respondents, including their gender and age. Future studies can address this gap by collecting the relevant details.

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