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Short Communication

Community based household data collection in a post pandemic world-challenges and way forward

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ABSTRACT

The COVID pandemic has instilled fear in the community creating challenges for household data collection. A community-based household survey was planned to assess knowledge and perception about air pollution caused by vehicular traffic and related ailments among residents of Delhi along with willingness to accept (WTA)/willingness to pay (WTP) discount/premium to discontinue/continue the use of private vehicles for their daily office commute. Access into households was difficult due to heightened sensitivity in post COVID situation. Respondents were not available during working hours. Researchers reached out to participants at workplaces, community events, during weekends or after office hours. Safety of researchers due to odd working hours was a concern. Researchers in post-pandemic world need to plan for multiple modes to access participants. Timelines of the data collection phase need to be sensitive for higher proportion of refusals and necessary permissions. Higher investments in effective communication skills are necessary.

Keywords: Electronic based data collection, Computer assisted personal interview, Implementation research, Health survey

INTRODUCTION

Community surveys are a valuable source of information for research. Face to face interview is an important part of the research design used to collect data where participants answer the questions in the presence of an enumerator.[1]

Self-reported data is used in many fields of behavioural and health research. Research participation can be influenced by a variety of complex factors, which might cause individuals to respond differently in various interview settings. Respondents sometimes open up to interviewers and help them to express their true problems and gather viable data.[2] For instance, response bias may arise from respondents' desire to show oneself favourably in an interview scenario. Method of data collection plays a very crucial role in primary research and face to face interviews help in increasing the reliability and accuracy of the data.[1] Chances of discrepancy and information loss are less with the face to face interviews, however, just responding must not be considered an appropriate way but handling sensitive situations and questions is an activity which requires complex training and behavioural skills.[3] Moreover, face to face interviews offer more participation from different social demographic groups and hence increase the heterogeneity of the data.[4]

Face to face interviews provide credible data but come with a lot of challenges too as finding and recruiting a participant is not always easy. Most of the respondents are reluctant to talk to a stranger and the rate of refusal is comparatively higher. In most of the cases of community based household surveys, respondents hesitate to allow enumerators to enter their house for taking interviews.[5]

This case study attempts to document our insights and offers a comprehensive summary of our key learnings on community based data collection through face to face

interviews in post COVID-19 scenarios. Following the COVID-19 pandemic, collecting data through face to face interviews has become difficult. People are more conscious about the risk and modes of transmission and do not want to come in close proximity to strangers. Given that the epidemic had placed several further challenges in the midst of widespread suffering, researchers have to find a way to conduct interviews for data collection keeping all the safety measures in mind. This case study addresses the challenges faced in the process of data collection during the community and workplace interviews.

Lung cancer, asthma, chronic obstructive pulmonary disease, and cardiovascular disorders have all been attributed to increased risk factors of air pollution. Long-term exposure to air pollution through traffic is additionally associated with an increased risk of lymphocytic leukaemia and mental health disorders. Reduced cognitive performance in elderly men has been correlated to air pollution from ambient traffic. Increased automotive traffic in metro cities is a key driver to road accidents, noise and air pollution, and reduced productivity from longer commutes imposed on by traffic congestion.[6-9]

METHODS

This study captures the perception, attitude and knowledge of the Delhi citizens about the air pollution and knowledge related to the health ailments caused by it. The study also estimates the willingness to accept (WTA) and willingness to pay (WTP) to discontinue/continue to use private transport for the daily office commute of respondents using a contingent valuation method (CVM).

Contingent valuation is a survey-based economic tool which is widely used for assessing non-market resources like preservation of the environment or effect of pollution. This method is used mostly in conditions where no real market exists for the product under study and helping in decision making related to resource allocation. This approach is the best way to describe the preferences of the society and individuals in various domains especially public goods.[10]

The study begins with assessing the knowledge and perception of respondents on the current situation of air pollution in Delhi and related ailments caused by pollution. The study uses an audio-visual tool to present the current scenario related to road traffic and air pollution followed by the current facilities and proposed initiatives in improvement in public transport in the city. This is followed by assessment of WTA/WTP for discount/ premium for discontinuing/continuing to use private transport for their daily office commute. CVM is a fairly new technique, and the challenge lies in the correct presentation of the contingent scenario and elicitation of responses. Hence, the personal face to face interview becomes very important for accurate data.

Sample size and sampling

700 participants were recruited for the data collection process. Office commuters who used their own car for their daily office commute and have access to public transport, like a metro station in 3 km of the residential area were included in the survey.

Delhi NCR was divided into zones and Metro stations were randomly sampled within the zones to ensure adequate representation. Households were to be approached for potential respondents. A pretested questionnaire was administered using computer assisted personal interviews (CAPI). Data was collected on android devices.

RESULTS

Challenges

The contingent valuation technique requires a very careful administration of the research tools. The research team was extensively trained in the technique and the tools. However, specific challenges were faced in conducting physical interviews. While most of these challenges would be faced in any primary research, the level of difficulty was accentuated which could be attributed to the post pandemic environment of enhanced risk perception and measures of personal protection adopted routinely by the general population.

A list of challenges faced by the researchers and the measures employed to overcome them is listed in Table 1.

Conducting household interviews proved to be the first challenge. Most of the societies and apartments denied entry to researchers. Sometimes, the security personnel not only denied access to the society, but also refused to share contacts of senior office bearers of the Resident Welfare Association (RWA) of the society. Contacting and building rapport with the RWA members took time and hence delayed the time set for data collection.

In a post-pandemic world, work from home and car pooling arrangements are made by many offices to accelerate the quality of work and save time of travelling to achieve maximum productivity, which also made it more difficult to find eligible participants in the community.

Since the respondents were working professionals, they were not available at their residents during the working hours during which the researchers visited They were mostly available in the early morning or late evenings. Accordingly, the community was approached after office hours and on weekends. Workplaces and places of business were also included in the methodology to reach out to the target population.

Since the research team comprised of only women, specific attention had to be paid to ensure their safety and security

during field work. Conducting interviews after office hours in the evenings posed specific security challenges. Standard operating protocols were developed and strictly followed for such situations. Transport arrangements were made to ensure safe movement of research staff. This led to increased research costs. Visiting urban areas in Delhi NCR after office hours was an onerous task for all female team which in turn utilised more resources. Work places, commercial and business centres surrounding the randomly sampled metro stations were identified using google earth pro and were approached to reach out to respondents.

Formal permissions were necessary to enter the office premises as most of the workplace do not allow survey inside the premises due to data confidentiality issues. Researchers reached out and engaged with key informants within the workplaces to convince them and gain necessary knowledge for the further proceedings. The challenge in offices lies in recruiting a participant and then sustaining him/her till the end for completion of the interview, as sometimes participants loose motivation to complete a long questionnaire. While most of the respondents initially refused to participate, explaining the significance and importance of the study helped a lot in moving forward with the interview.

To maintain heterogeneity and include respondents from all socio-demographic profiles, government offices and institutions were also visited and. However senior officials are provided government vehicles for transportation, sometimes these vehicles are used as personal vehicles and hence the respondents were sometimes hesitant about their willingness to be recorded as such. In the private sector, vehicles were not directly provided to senior staff. Such employees were provided benefits to facilitate private ownership of vehicles. This disturbed the homogeneity of participants in the study. Being an all-female team, issues of gender bias and patriarchy from respondents were also frequently faced, Standard operating procedures helped in such situations.

While conducting the interview, researchers often discover themselves in situations where participants encounter an obligation to conclude the interview rapidly or may require additional explanations. Patience and consistently sticking to the protocol helps in dealing with these situations. At times, due to constraints on space, two enumerators have to carry out interviews relatively close to one another, which leads to responders interacting and influencing their fellow respondents. Taking one interview at a time then seems a great option. This might increase the time taken to complete interviews but help in avoiding biases.

The researchers visited community events where large number of people would normally participate. The research team set up data collection booths during regional festivals like Durga Puja and new year. Participating in such events needed active engagement to secure permission. Stalls and booths at such events are normally heavily priced. The researchers had to engage effectively to gain access to these events without having to pay.

Table 1: Challenges in data collection and strategies employed.

S. no.	Challenges faced	Strategies to overcome	Impact on the research methods
1	The majority of the apartments and societies refused to let enumerators conduct surveys	Tried to take formal permissions from Resident Welfare Associations (RWAs) approached societies through contacts	Caused delays in data collection
2	Target population is not available at home during the weekdays	Tried visiting the community after office hours and weekends to reach the target population. Approached workplaces and place of business	Caused delays in data collection. Methodology has to be updated according to the changing scenario
3	Security concerns for female team visiting communities after office hours	Data collection team travels together. Adequate transport arrangements	Caused delays in data collection. Caused additional expenses for data collection
4	Locating a workplace around sampled metro stations	Used google maps and google earth pro application for locating the workplace. Tried contacting the offices through email and phone calls	Timeline decided for data collection was pushed further and more resources were utilised
5	Mostly got negative responses on the email and phone calls to offices	Tried to directly visit the office and talk to the concerned person, who can facilitate the data collection process. Approached offices through contacts	Violation of pre-decided sampling methods. The office located near the sample metro station, may have participants who come from different locations and does not always fit in inclusion criteria. Screening of the participants took even more time

Continued.

S. no.	Challenges faced	Strategies to overcome	Impact on the research methods
6	Not every workplace and office allowed us to take interviews due to confidentiality and information privacy	Tried explaining the importance and significance of the study and connected a senior person at the organisation who can comprehend the situation and importance of the research	The elite population was almost out of reach and it was important to interview them to maintain heterogeneity
7	Approaching the government offices to maintain the heterogeneity amongst the participants and taking permissions to enter the office premises	Met with the concerned authority and delivered an informative conversation with the contact person which convinced the person to allow the team into the office premises	Highly qualified officials have government vehicles for transportation purpose which acted as a bias for the contingent valuation scenario, i.e. shifting towards public transport
8	All female research team faces issues of gender bias, patriarchy from respondents	Researchers always travelled in a group. Standard operating procedures were followed to ensure safety and minimise untoward situations	Extended timeline for data collection and hence affects the project financially

DISCUSSION

Conducting face to face interviews after COVID-19 that too in community is a demanding task. As mentioned before, many of the challenges mentioned above may not be directly related to COVID-19. Community based and household interviews were challenging. Supplementing this with workplace based interviews is definitely useful. Factoring adequate time for securing relevant permissions is necessary. However, maintaining heterogeneity of respondents in workplaces is difficult as senior officials are often reluctant to participate.

However, following the right protocols and safety measures can help in increasing the chances of recruiting an eligible participant. Also, explaining the significance of the study is important to enable the participants to appreciate the importance of the study.[12]

Researchers in a post pandemic world will have to factor in higher amounts of time for engagement with key stakeholders to obtain necessary permissions for data collection. Building lasting relations within communities and institutions would be critical in building a conducive research environment.[11] Interview times will also have to factor in time for confidence building among the respondents. Adequate personal protection devices for researchers/enumerators are imperative for primary data collection. As household data collection becomes difficult researchers need to be on the look pout for alternative routes for access to the community. Community events provide a good opportunity but may be associated with higher costs.[13] Use of electronic data capture (EDC) has assisted the researchers and equipped them with electronic devices for data collection that inspire confidence among stakeholders and respondents.[1]

CONCLUSION

Researchers need to be mindful during finalisation of protocols that multiple strategies to reach out to respondents would be necessary and hence higher time and cost need to be budgeted for primary research. Rapport building in the community increases the chances of higher rates of participation. In case of workplaces, snowballing and reaching out to contacts might increase the chances to reach the targeted population. Hence, communication emerges as an important skill in a researcher. Adequate attention needs to be paid to integrate communication skills while planning training of researchers/enumerators. Specific skills to reach out to different stakeholders need to be planned and executed. In this study, the public health research workforce has a large number of women participants. The numbers are likely to grow in the future with more women joining the workforce in general. While this change is welcome, it does pose additional challenges in ensuring safety and security in the workplace which extends to data collection settings in the community. Standard protocols are necessary to be created and strictly enforced. A big role is played by the organisations and syndicates who are leading the research domain. Institutions can cultivate a conducive environment that will help in promoting and integrating the implementation of the standardized data collection processes and tools in everyday workflows. This would further promote the education of the patients, families and staff while also reinstate the training and knowledge already given to them. Questionnaire and protocols must be designed to reduce inequalities and enhance the quality of data collection as the population become more diverse.

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