

Forecasts: Consumption, Production, and Behavioral Responses*

Husnain F. Ahmad[†] Matthew Gibson[‡] Fatiq Nadeem[§] Sanval Nasim[¶]
Arman Rezaee^{||}

*Pre-Analysis Plan (PAP)***
Revised PAP (Version 2) Last Updated: January 29, 2020^{††}

Abstract

Economic theory predicts that forecasts are an important determinant of welfare. In developing countries, however, agents may have difficulty forming accurate, precise forecasts because of limited information and human capital. This plausibly limits the scope for optimal responses to uncertain future events. We study the effect of two randomized interventions on forecast formation and behavioral responses. The first is the provision of day-ahead air pollution forecasts. The second is training in forecasting techniques aimed at reducing behavioral biases. We estimate impacts on forecast error in air pollution and travel times. Measured responses include willingness to pay for protective face masks and changes in time use. We examine effects on proxies for the variance of utility, which broadly reflects forecasting and responses to uncertainty. Finally we elicit willingness to pay for our forecasts, an important input to cost-benefit analysis of air pollution monitoring.

*This study is funded by grants from the International Growth Center (IGC), UK; Lahore University of Management Sciences (LUMS); Abdul Latif Jameel Poverty Action Lab (JPAL) Governance Initiative; Williams College and the University of the South. It is conducted in collaboration with the Lahore University of Management Sciences & the Institute for Development and Economic Alternatives (IDEAS), Pakistan. We are grateful to Chris Blattman, Asim Khwaja, Asad Liaqat, Craig McIntosh, Rohini Pande, Chris Udry, and Catherine Wolfram for their helpful comments. This study is approved by the University of California, Davis' IRB under protocol number IRB-1336133-1 and LUMS IRB under protocol number IRB-20180214. We thank Yasir Iqbal, Mahnoor Kashif and Shotaro Nakamura for outstanding research assistance; Mohammad Malick and Ahsan Tariq for excellent management of field work and data collection; the enumerator team at the IDEAS' Survey Wing for conducting the household surveys and the intervention team at LUMS for implementing the forecast training.

[†]Department of Economics, Sewanee: The University of the South, TN.

[‡]Department of Economics, Williams College, MA.

[§]Evidence in governance and politics, University of California, Los Angeles, CA.

[¶]Department of Economics, Lahore University of Management Sciences, Lahore, Pakistan.

^{||}Department of Economics, University of California, Davis, CA; email: abrezaee@ucdavis.edu

**Please do not cite or circulate without the authors' permission.

^{††}This pre-analysis plan was registered on the AEA RCT Registry on June 23, 2019 (AEARCTR-0004343).

Contents

1	Introduction	4
1.1	Research Questions	5
1.1.1	How do people consume forecasts?	5
1.1.2	How do people produce forecasts?	5
1.1.3	Behavioral responses	5
2	Simple model	5
3	Research Design	5
3.1	Interventions	5
3.1.1	Day-ahead Air Pollution Forecasts	6
3.1.2	Forecast Training	8
3.2	Project Timelines	8
3.3	Study Site and Sampling Frame	8
3.4	Unit of Analysis	10
3.5	Power Calculations	10
3.6	Assignment to Treatment	11
3.6.1	Primary treatment	11
3.6.2	Secondary treatments	11
4	Data	11
4.1	Survey Data	11
4.1.1	Sampling and Subjects	11
4.1.2	Core Modules for the Baseline Survey	13
4.1.3	Survey Frequency	13
4.2	Secondary Data	14
4.2.1	Air Pollution Data	14
4.2.2	Weather Data	14
4.2.3	Traffic Data	14
5	Outcomes	15
5.1	Primary outcomes	15
5.1.1	Willingness to pay for forecast information	15
5.1.2	Air pollution forecast error index	15
5.1.3	Willingness to pay for masks	15
5.1.4	Respondent time outdoors (from time diaries)	15
5.1.5	Proxy for utility variability	15
5.2	Secondary outcomes	15
5.2.1	Travel time forecast error	15
5.2.2	Labor supply forecast error	16
5.2.3	Expenditure	16
5.2.4	Calibration	16
5.2.5	Weather forecast takeup	16
5.2.6	Telephone survey outcomes	16
5.2.7	Child time outdoors (from time diaries)	17
5.2.8	Time-use avoidance index	17
5.2.9	Children’s avoidance	17
5.2.10	Additional proxies for utility variability	17
5.2.11	Air pollution information seeking	17
5.2.12	Policy preferences	18
5.3	Control variables	18
5.3.1	Baseline Elicitations	18
5.3.2	Risk Aversion	18
5.3.3	Accuracy Rating for Forecasts	19
5.3.4	Expectations	19
5.3.5	Other variables for analysis of heterogeneity	19

6 Empirical Analysis	19
6.1 Balancing Checks	19
6.2 Treatment Effects	19
6.2.1 Intent to Treat	20
6.2.2 Treatment on the Treated	20
6.3 Heterogeneous Effects	22
6.3.1 Intent to Treat	22
6.3.2 Treatment on the Treated	23
6.4 Machine Learning Inference	23
6.5 Additional notes on control variable selection	23
6.6 p-Value adjustments	23
7 Experimental Challenges	24
7.1 Attrition from the Sample	24
7.2 Spillovers	24
7.3 Experimenter demand effects	24
8 Additional paper on subjects' forecasts of choice	25
9 Change Log	26
REFERENCES	27
10 APPENDICES	30
10.1 Materials used in the baseline	30
10.1.1 Pamphlet	30
10.1.2 Keychains	30
10.1.3 Particulate matter masks	31
10.1.4 Historical pollution data	31
10.1.5 Forecast text message sheet	32
10.2 Baseline Survey	33
10.3 Endline Survey	54
10.3.1 SMS Service Forecast Text Message - Endline (Inclusion of Health Status)	86
10.3.2 Map for Travel Time Forecasting - Endline	87
10.3.3 Historical Travel Time Data - Endline	88
10.3.4 Historical Pollution Data - Endline	89
10.3.5 Risk Aversion Supplement 1a - Endline	90
10.3.6 Risk Aversion Supplement 1b - Endline	91

1 Introduction

Economic theory predicts that forecasts are an important determinant of welfare. For example, an agent who relies on biased forecasts may not optimally smooth her consumption over time. An agent who fails to forecast high air pollution may fail to undertake avoidance behavior that she would have chosen in the presence of a high-skill forecast. Such phenomena may be especially common in developing countries. Third-party forecasts may be unavailable or of poor skill for a given agent’s location (Rosenzweig and Udry, 2013, 2014). Forecasting mistakes are common even among self-styled experts (Tetlock, 2017). In developing countries, the behavioral biases that lead to these mistakes may be exacerbated by information scarcity (North, 2003; Stiglitz, 2000) and lower levels of human capital (Hanushek, 2013).

We implement a randomized controlled trial to study people in their roles as consumers and producers of forecasts. The research design includes two orthogonal treatments. The first entails provision of day-ahead air pollution forecasts delivered by text message. The second entails in-person training designed to reduce behavioral biases in forecasts. Broadly, we are interested in three types of outcomes: 1) consumption, e.g. demand for our forecast product; 2) production, e.g. error in forecasting the time required for a future journey; and 3) behavioral responses, e.g. demand for particulate-filtering face masks. In theory these two treatments could be complements or substitutes. While our design will allow us to measure this interaction, it is not our primary focus.

Lahore, Pakistan is the setting for this experiment. The city has suffered from very high air pollution, especially in recent years (Riaz and Hamid, 2018) (Zahra-Malik, 2017). There have been some recent efforts to provide air pollution information. The Environmental Protection Department (EPD) of the Punjab provincial government has provided some measurements online, but coverage is incomplete in space and time (Punjab, 2017). According to the government of Punjab, “Data on air quality in the province is scant. Sporadic monitoring of air pollutants suggests that ambient air standards for particulate matter with size 2.5 micron (PM2.5)...are exceeded frequently” (Punjab, 2017). The US consulate in Lahore has recently begun providing information online, but the relevance of this information for distant residents is unclear. To the best of our knowledge, air pollution forecasts are not readily available, and this is particularly true for residents who do not speak English. Our pilot interviews suggested that this absence of information does not reflect low demand. In response to stated-preference elicitations 55% of respondents reported positive willingness to pay for air pollution information. When asked to rank different types of air pollution information, a large majority of respondents put forecasts first, followed by real-time alerts and day-behind measurements.

Our project contributes to several literatures, of which the first is on forecasting in developing countries. Previous work has focused on farmers and forecasting of weather, especially precipitation (Rosenzweig and Udry, 2013, 2014; Kala, 2017). We study urban residents and forecasting of air pollution, which enables us to ask somewhat different research questions. For example, the commonly studied response to precipitation forecasts is the timing of planting. Our setting allows for study of repeated choices, like time spent outside, where learning is plausibly more important. The forecasts and choices we study command both research and policy interest because of ongoing trends in developing countries. In many developing countries air pollution levels are much higher than in developed countries (Cohen et al., 2005; McGranahan and Murray, 2012). At the same time, rural citizens continue to move to developing cities (Henderson, 2002).

The second relevant literature is on avoidance behavior.¹ There is a substantial empirical literature on avoidance behavior in developed countries. Prominent examples include Neidell (2004), Graff Zivin and Neidell (2009), and Moretti and Neidell (2011). A thorough review, including a brief theoretical foundation, is in Graff Zivin and Neidell (2013). Our study differs in two aspects. First, we provide evidence from the developing world, where preferences may differ, incomes are lower, and the scope for avoidance may differ (e.g. because of available technologies or intra-day patterns in air pollution). Second, this literature largely relies on natural experiments for identification, which limits the questions it can ask. For example, it is common to observe an avoidance behavior, such as a canceled trip to an outdoor zoo, but agents’ air pollution expectations are unobserved. To the best of our knowledge ours is the first experimental study in this literature.

Lastly our project speaks to the literature on economic effects of air pollution in developing countries. Previous work has examined mortality and several dimensions of health (Edwards and Langpap, 2012; Chen et al., 2013; Ebenstein et al., 2015; Arceo et al., 2016).² A recent literature has estimated effects on labor productivity (Adhvaryu et al., 2019; He et al., 2019; Chang et al., 2019). Hanna and Oliva (2015) study the effect on labor supply using a Mexico City refinery closure as a natural experiment. We broaden this work to study subjects’ time allocation for an entire 24-hour day, including home production and leisure.

¹Some work prefers the term “averting behavior”; we view the two as synonymous.

²Other important work in this area includes: Alberini et al. (1997), Cropper et al. (1997), and Jeuland et al. (2015).

This preanalysis plan outlines the theory, hypotheses, data collection, empirical strategies and our field plan, all of which will be used to collect and analyze the results from this study. This field experiment follows a pilot study conducted in a similar area in Lahore sponsored by the Lahore University of Management Sciences (LUMS) and the Abdul Latif Jameel Poverty Action Lab (JPAL). We use results from our pilot study to inform our research design. The remainder of the plan proceeds as follows. Section 2 provides insight into our research design. Section 3 describes our data collection strategy and section 4 provides details about our outcome measures. We use section 5 to describe the empirical analysis that follows data collection and section 6 lays out the experimental challenges that we anticipate.

1.1 Research Questions

1.1.1 How do people consume forecasts?

1. How much do people value air pollution forecasts?
2. Does experience with air pollution forecasts affect willingness to pay for them?
3. Does forecast training increase or decrease willingness to pay for third-party air pollution forecasts?
4. Is there an interaction effect of third-party forecasts and training on willingness to pay for forecasts?

1.1.2 How do people produce forecasts?

1. Do people have any appreciable skill in forecasting air pollution, travel time, and their own labor market outcomes?
2. Can a brief forecast training improve forecast ability? If so, how persistent are the improvements?
3. Does exposure to third-party air pollution forecasts improve forecast ability?
4. Is there an interaction effect of third-party forecasts and training on forecast ability?

1.1.3 Behavioral responses

1. Do people engage in more time-use avoidance in response to air pollution forecasts or forecast training?
2. Do people increase demand for avoidance goods, like particulate-filtering masks, in response to air pollution forecasts or forecast training?
3. Are there interaction effects of third-party forecasts and forecast training on avoidance?
4. Does forecast training reduce the variability utility within subject?
5. Are there interaction effects of third-party forecasts and forecast training on the variance of utility within subject?

2 Simple model

In ongoing work, we are developing an analytical model with the broad goal of clarifying the relationship between our empirical estimates and structural parameters. We will use comparative statics to predict the signs of treatment effects or explain why they are ambiguous in sign. For example, the derivative of willingness to pay for third-party forecasts with respect to our Tetlock-based treatment will depend on a parameter capturing substitutability or complementarity of forecast ability and third-party forecasts. Our model will also incorporate important dimensions of heterogeneity in treatment effects, for example risk aversion.

3 Research Design

3.1 Interventions

Following the baseline survey, we buffer for approximately a one month period after which we implement our treatment³. We develop two treatments: (i) an air pollution information clearinghouse that uses text

³We buffer for one month for logistical reasons. Following the lunar calendar, the months of April and June 2019 were a part of the Muslim month of Ramazan in which we expect the time-use diaries of our study respondents to experience a significant change.

messages and a forecast model to inform citizens about air pollution forecasts, and (ii) forecast training session. Our SMS treatment involves a system developed by the research team with support from *OpenCodes* that combines a forecast model, a GSM mobile connection and an API based system to treat our respondents with air pollution forecast information every day for a period of 8 months. Figure 1 provides a division of our sample into treatment and control groups. Our project implements two forms of treatment: day-ahead forecast SMS information and forecast training. The SMS messages are delivered over a time period of 8 months. The forecast training is implemented once to every household in $T2$ & $T3$ over a period of one month following the SMS message intervention.

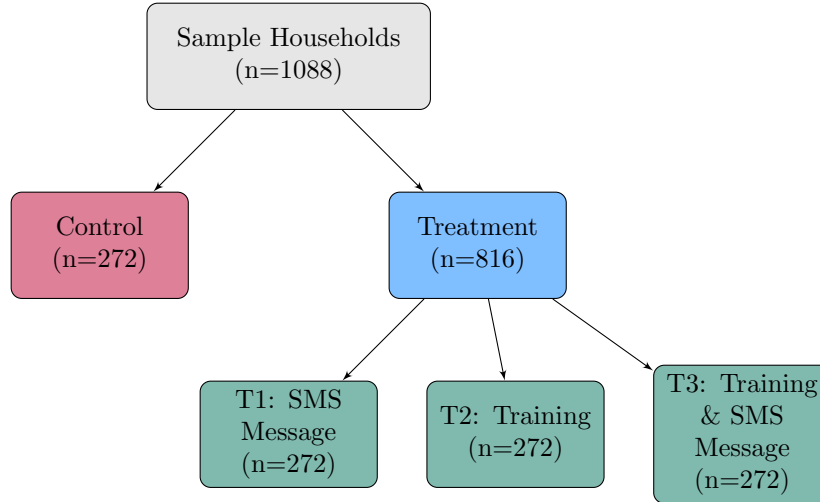


Figure 1: Treatment Groups

3.1.1 Day-ahead Air Pollution Forecasts

Forecast Model

We have designed an ensemble model to forecast PM_{2.5} air pollution for $t+1$. This ensemble model combines individual models:

1. Our own prediction model using air pollution monitors located in our study area in Walton, Lahore.
2. Our own prediction model using data from AirNow, which is an air pollution monitor located at the US consulate in Lahore.⁴
3. $t+1$ predictions from the MeteoBlue air pollution prediction model⁵
4. $t+1$ predictions from the SPRINTARS air pollution prediction model⁶

1. **Our own prediction model using air pollution monitors located in Walton:**

This model uses as inputs: average daily PM_{2.5} readings from one or both of our industry qualified air pollution monitors deployed in Walton and Accu Weather⁷ $t+1$ forecasts for minimum temperature, maximum temperature, and precipitation in inches. The two monitors are: (i) an AQMesh, and (ii) a Dusttrak II. The AQMesh is located on the roof of a house in central Walton and collects and transmits via GSM air pollution readings continuously. These readings are then accessible via API. The Dusttrak II is a handheld device that a research assistant uses to manually take readings in Walton 2-3 times per day under a fixed protocol.

We predict $t+1$ PM_{2.5} levels using a simple MA7 model with day of the week fixed effects and weather forecast controls. MA7 was selected through a cross-validation exercise using our data.

⁴Data source explained in detail in section 3.2

⁵Data source explained in detail in section 3.2

⁶Data source explained in detail in section 3.2

⁷Data source explained in detail in section 3.2

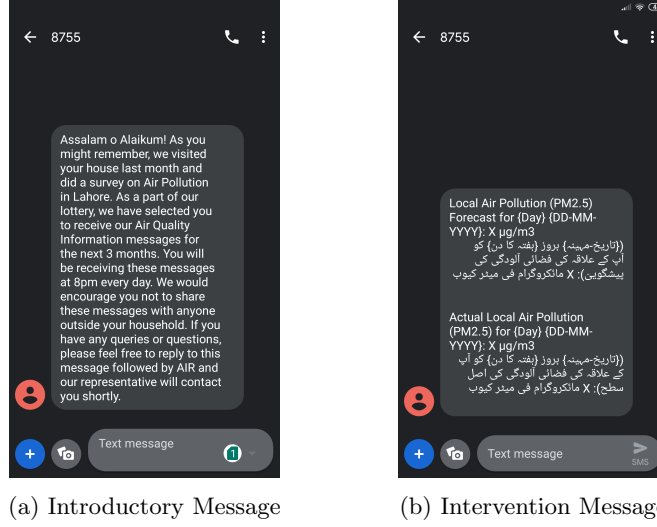


Figure 2: Sample messages to respondents

2. **Our own prediction model using data from the Lahore US Consulate’s AirNow air pollution monitor:**
This model is identical to that using our own monitors, but it uses data from AirNow⁸ from a ground monitor at Lahore’s US consulate.
3. **$t+1$ predictions from the MeteoBlue air pollution prediction model :** this model offers publicly available air pollution forecasts. We access these forecasts at 5pm each day for the following day.
4. **$t+1$ predictions from the SPRINTARS air pollution prediction model :** this model offers publicly available air pollution forecasts. We access these forecasts at 5pm each day for the following day.

These models are combined through a simple three step process. First, we designate retrospective data from our air pollution monitor(s) as the ”ground truth” and we demean each of the other models (including our own prediction models) according to the true differences between the predictions in these models and the ground truth over the week prior. Second, we measure the root-mean squared error of each model relative to the ground truth over the week prior. Third, we take an average of the predictions for $t+1$, inversely weighted by each model’s root-mean squared error between predictions and truth over the previous week.

Forecast Message

We employ an API-based SMS messaging service that uses a short-code⁹ service to send SMS messages to our survey participants in the treatment groups 1 & 3. The use of a short code allows our participants to reply to our forecast messages with any queries and questions allowing for some interaction on text messages as well. We send our treatment group respondents two sets of information. First, we send them an average PM2.5 air pollution forecast for $t+1$. Secondly, we provide them the actual PM2.5 air pollution level for $t-1$. The text for our forecast message in English and Urdu is shown in figure 2 above.

⁸Data source explained in detail in section 3.2

⁹A short code is a 4 digit telephone number that is shorter than a full phone number and is used to send and receive SMS and MMS messages to and from mobile phones. In the local context, short-codes are used to send messages from banks, public institutions, and accredited private organizations. The Pakistan telecommunication authority (PTA) follows a rigorous procedure to obtain access to these numbers. We obtain and use the short-code ”8755” to send messages to our survey participants in the treatment groups.

3.1.2 Forecast Training

We implement a one-hour forecast training based on the ideas of Tetlock (2017). In particular we draw on Mellers et al. (2014) and Mauboussin and Callahan (2015), but no material was taken directly from this work. Broadly speaking, the purpose of the training is to reduce behavioral and psychological mistakes that decrease the precision and accuracy of subjects’ forecasts. Training takes place in subjects’ homes. It is conducted in Urdu¹⁰ by enumerators who have been selected and trained by the research team.

To begin the session, we elicit incentivized forecasts for air pollution and travel time. This allows us to measure within-subject changes over the training session in an incentive-compatible manner. We elicit non-incentivized responses to these same questions over the course of the session in order to estimate the effectiveness of our exercises, before again eliciting incentivized forecasts at the end of the session.

The first set of exercises that subjects complete cover calibration. In the first they provide 80 percent confidence intervals for PM2.5 readings over the five previous days. In the second they answer numerical questions about Pakistan’s history and culture. (For example, “What is the population of Islamabad?”) For each answer, subjects provide a confidence level: the probability that their answer falls within a given range around the truth. In the third calibration exercise, subjects answer true-false general knowledge questions and provide confidence levels for each. In pilot sessions, most subjects make large errors and demonstrate overconfidence, consistent with evidence from developed countries. Taken together, the purpose of the calibration exercises is to show subjects there is room for improvement and open their minds to subsequent lessons.

The next exercises teach subjects to combine “outside” and “inside” views when making a forecast. The former denotes the base rate at which an event occurs in a reference class, e.g. the long-run average level of PM2.5 in Lahore. The latter denotes factors particular to a given forecast task, e.g. subjects’ knowledge that air pollution in Lahore is lower on weekends than on weekdays. The exercise teaches subjects about choosing a good reference class and avoiding the tendency to give too much weight to the inside view in forecasting.

In the following exercise, subjects are asked to reflect on a previous forecasting task. They are then given the opportunity to change their forecasts. This teaches subjects to slow down and engage “System Two” in the language of Kahneman (2011). Subjects then complete an exercise that encourages them not to round their forecasts excessively. Previous work like Mellers et al. (2014) has found that most subjects round too much; that is, their initial rounded forecast does not incorporate all the information at their disposal.

The next exercise teaches subjects an important heuristic for forecasting time series: they should consider a history at least as long as the time horizon of the forecast task. For example, if they are trying to forecast air pollution in three days, they should consider at least three days of history. The final exercise reminds subjects that people tend to allow their emotions and preferences to influence their forecasts. For example, a person who plans to spend the day outside tomorrow may underrate the chance of rain.

3.2 Project Timelines

The tentative timelines are as follows:

1. Design Phase: December 2017-March 2019,
2. Baseline Data Collection: April 2019 - May 2019,
3. Text Message Intervention: June 2019 to January 2020
4. Phone Surveys: June 2019 to October 2019
5. Forecast Training Intervention: July 2019 to August 2019
6. Endline Data Collection: January-February 2020

3.3 Study Site and Sampling Frame

Lahore is the largest city in the province of Punjab and the second largest city in Pakistan. It is governed by a local government system known as a *Metropolitan Corporation*, however the mapping of populations to local government bodies happens through a system of grid-based divisions made by the Pakistan Bureau of Statistics (PBS). For purposes of the national census, public-sector management and grid-based monitoring the PBS divides large cities into a uniform set of tehsils, further divided into charges, further divided into circles, and further divided into a final denomination of census blocks. We use this particular set of denominations as a sampling frame to implement this study in Lahore for two reasons: (i) we are able to weight our results using

¹⁰Urdu is the local language spoken in Lahore, Pakistan.

population statistics for external validity; and (ii) we can retain the ability to match our dataset with public records.

Lahore includes 11.1 million citizens and is divided into 8 Sub-Districts (Tehsils) as per PBS (Census, 2017). We use data from the 2011 Multiple Indicator Cluster Survey (MICS) to compare Walton¹¹ (one of our selected tehsils) to the rest of Lahore on key indicators. The results are shown in table 1.¹²

Table 1: Statistical Balance between Individuals in Lahore Cantonment (Walton) and Rest of Lahore, MICS 2011.

Variable	(1)	(2)	T-test
	Walton Mean/SE	Rest of Lahore Mean/SE	P-value (1)-(2)
Primary Education (Household Head)	0.106 (0.007)	0.121 (0.002)	0.041**
Secondary Education (Household Head)	0.198 (0.008)	0.213 (0.002)	0.102
Higher Education (Household Head)	0.270 (0.009)	0.185 (0.002)	0.000***
Age	25.620 (0.407)	24.951 (0.113)	0.104
Wealth Index	1.258 (0.014)	0.960 (0.005)	0.000***
Cough Problems	0.007 (0.002)	0.016 (0.001)	0.001***
Tuberculosis	0.004 (0.001)	0.003 (0.000)	0.165
Child in Household	0.369 (0.010)	0.369 (0.003)	0.980
Elders in Household	0.058 (0.005)	0.047 (0.001)	0.013**
N	2214	26847	

Notes: The value displayed for t-tests are p-values. All missing values in balance variables are treated as zero.***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Using data from our pilots and insights from previous surveys we select two tehsils of Lahore for this survey: Walton and Model Town. To draw our sample of 1088 within these tehsils we include only 6 out of the 11 charges of Walton tehsil and 1 charge of Model Town tehsil. The excluded charges include restricted areas of cantonment, high income areas, and a military airbase. We exclude these areas due to official restrictions and the expectation of very low response rates in high-income areas. The resultant sampling frame for this experiment is spread across 7 charges¹³, 41 circles and 231 census blocks. A summary of the distribution of population is given across the two tehsils in table 2 and across charges in these tehsils in table 3. A geographical illustration of the 7 charges in our sample can also be seen in figure 3.

Table 2: Population of the two selected Tehsils, 2017 Census of Pakistan.

	Households	Male	Female	Trangender	All
Lahore District	1,757,691	5,824,131	5,300,931	1,223	11,126,285
Walton Tehsil	117,992	371,375	338,013	78	709,466
Model Town Tehsil	431,856	N/A	N/A	N/A	2,698,235

Table 3: Population of Selected Charges, 2017 Census of Pakistan.

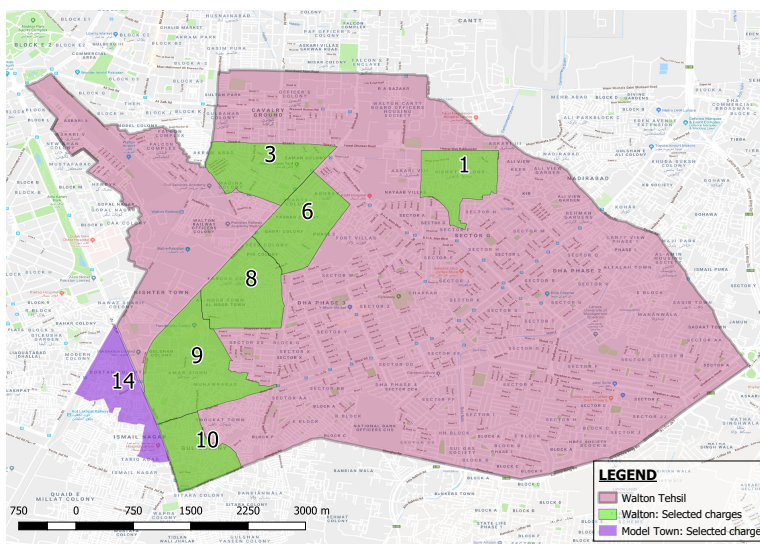
Tehsil	Charge	Households	Individuals	% of tehsil population
Walton	1	9344	59147	8.3
Walton	3	8622	49845	7.0
Walton	6	13154	77267	10.9
Walton	8	12752	77789	11.0
Walton	9	10141	65727	9.3
Walton	10	8347	54310	7.7
Model Town	14	41352	6707	0.2

¹¹The area of Walton is a part of the Cantonment area of Lahore as mentioned in the MICS survey. We exploit this denomination to report results on the differences between Lahore and Walton.

¹²We have not added Model Town as a separate tehsil in the statistical balances because the MICS data do not allow us to distinguish this tehsil separately from others.

¹³For charge 1 and 6 we drop a particular parts of the charges to exclude high income neighborhoods.

Figure 3: Sample Tehsil and Charges' Map



3.4 Unit of Analysis

The large majority of analysis will be at the individual subject level. For measures of time-use avoidance behavior collected over the telephone survey, analysis may be conducted at the household level if it proves difficult to reach the baseline respondent every week.

3.5 Power Calculations

We estimate our power to detect changes in our primary outcomes with probability 0.8, assuming a sample of 1088 with a 15 percent attrition rate at endline. Because our two treatments are orthogonal, power can be evaluated separately.

For the air pollution forecast treatment, we conduct power calculations using means and standard deviations from a pilot survey of approximately 50 households conducted in a neighborhood near Walton. We do not have a pilot measure of the willingness to pay for particulate-filtering masks nor of proxies for utility variability but do for the other variables. We estimate our power following our planned intent to treat empirical specification and associated hypothesis tests outlined below, with one exception—we do not account for the precision gains from controlling for baseline outcome measures. This is because we do not want to make an assumption about the autocorrelation of these outcomes and would rather be more conservative. We assume an alpha-level of 0.05 divided by the number of variables for which we are testing power (six) as a conservative accounting for our planned multiple hypothesis testing corrections. We find we are powered to detect impacts of 0.191 standard deviations, which translates into the following:

- Willingness to pay for 1 month of additional SMS forecasts (PKR)—we are powered to detect an increase in WTP from 83.33 to 90.68 or larger.
- Air pollution forecast error $t+1$ —we are powered to detect a decrease in absolute forecasting error (the absolute value of the true pollution level minus respondents' forecast in our pilot, in micrograms per meter cubed) from 84.47 to 73.62 or larger.
- Air pollution forecast error $t+3$ —we are powered to detect a decrease in absolute forecasting error from 90.36 to 78.93 or larger.
- Indicator for changed time outside in response to air pollution—we are powered to detect increases from 0.42 (mean from our pilot) to 0.52 or larger.
- Indicator for rescheduled activities in response to air pollution—we are powered to detect increases from 0.41 to 0.51 or larger.
- Indicator for limited outdoor time of children or elderly in response to air pollution—we are powered to detect increases from 0.44 to 0.54 or larger.

While we have conducted focus groups to develop the forecast training treatment, we do not have sufficient data to inform power calculations. Our prior is that our power to detect effects from this treatment will be roughly similar to our power to detect effects from the air pollution forecasts.

3.6 Assignment to Treatment

3.6.1 Primary treatment

Subjects will be blocked or stratified on risk aversion, air pollution forecast MSE (t+1 and t+3), travel time forecast MSE (t+1 and t+3) and willingness to pay for a particulate-filtering mask. These variables will be elicited using incentive-compatible mechanisms as part of the baseline survey. Subjects will also be blocked or stratified on several self-reported variables: indicators for having rescheduled activities in response to air pollution in the past week, informedness about air pollution, the first principal component of indicators for households being high risk—the presence of a household member with breathing problems, the presence of children in the household, and the presence of elderly people in the household—education, gender, age, and a dummy variable for those households for which we were able to verify the phone number they provided at baseline for follow-up phone surveys.

Blocking and randomization will be performed in R using the tools in the *blockTools* package (Moore, 2012), which allows for blocking on a high-dimensional set of covariates and avoids discretizing continuous covariates. For robustness (in terms of block stability) to outliers, multivariate location and spread will be generated using a Minimum Volume Ellipsoid (MVE) estimator. Robustness to outliers is important in our setting because pilot surveys have yielded very large forecast errors for some respondents. In computing the MVE, incentive-compatibly elicited baseline outcomes will be weighted twice as heavily as other covariates. While the exact magnitudes of these weights are admittedly *ad hoc*, they make explicit our prior that baseline outcomes should predict endline outcomes better than other covariates. Per the recommendation of Athey and Imbens (2017), blocks will contain at least 8 subjects. Blocking will be performed using the optimal-greedy algorithm implemented in the *block* command. Within each block, *assignment* will be used to randomly assign 2 subjects to each experimental condition.

3.6.2 Secondary treatments

Our experimental design includes a secondary treatment orthogonal to our primary treatment. While this treatment is not the focus of this research, its effects will be estimated. At both baseline and endline, willingness to pay for a particulate-filtering mask will be elicited via a Becker-DeGroot-Marschak mechanism (Becker et al., 1964), with price drawn from a uniform distribution on $[0PKR, 200PKR]$. Conditional on a subject's bid b , receipt of the mask at baseline will be random. The probability of receiving the mask will be $b/200$ for $b \in [0, 200]$ and 1 for $b > 200$. This provides an additional source of exogenous variation. Subjects with $b \leq 200$ can be matched on b and their outcomes can be compared. This is not arbitrary. If masks are experience goods, preferences for them may change over time among individuals who use them. This may, in turn, influence willingness to pay for masks, forecast ability, willingness to pay for forecasts, and other avoidance behaviors, e.g. time spent outside. Interesting interactions across the primary and secondary treatments are not expected, but will be reported in the appendix for primary outcomes.

4 Data

4.1 Survey Data

4.1.1 Sampling and Subjects

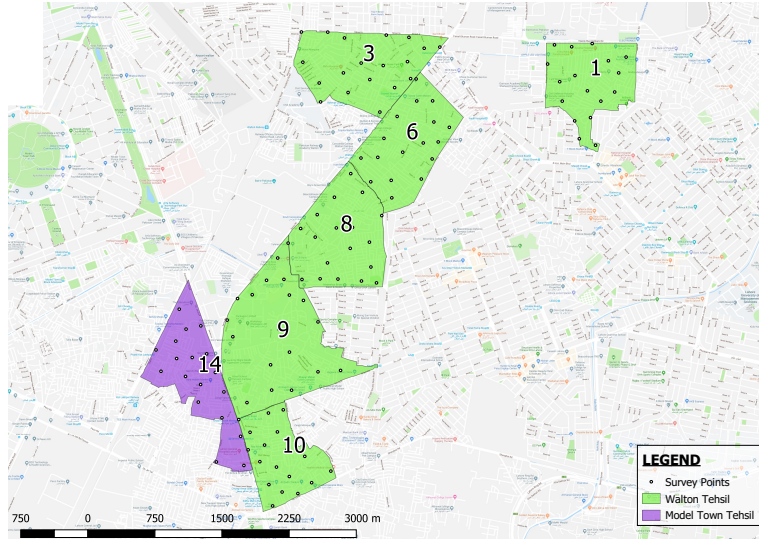
To collect data on our outcome variables and their correlates we survey households/individuals in the area of Walton in Lahore at multiple points in time. All our primary data is collected on electronic tablets using SurveyCTO's Open Data Kit (ODK) server.

For selecting the households at baseline¹⁴ we use census *charge* as the primary denomination to select grids. Following the sampling frame specified in section 2.3 we use 7 charges for our study. We survey

¹⁴The first survey for our panel study in which we implement our selection strategy for our households as well.

between 140 to 180 households per charge giving a total of 1088 respondents in 7 charges. We do this using a GIS-based system to construct 190 by 190 meter grid cells within each charge to draw a $190m^2$ buffer by selecting up to 19 survey points¹⁵ within each charge. Our grid buffer ensures that each point is at least 190 meters away from each other. Using the grid as a buffer we draw 128 random GPS points¹⁶ across the entire sampling frame of 7 charges. An illustration of these points can be seen in figure 4.

Figure 4: Sample points' map for selected charges



To select households in a charge, we drop a survey point at a random point within each charge boundary. A pair of enumerators¹⁷ proceeds to the dropped survey location, and selects the nearest household to the left for the first survey, then selects nine other households on the same survey point using the *left hand rule*. The left hand rule has the surveyors select every fifth household on the left starting from their survey point until he/she completes 10 households proceeding in a clockwise spiral fashion from the first house to cover the entire grid. A surveyor is tasked with surveying 5 male and 5 female households at each survey point making a total of 10 respondents at each survey point. We survey 5 male and 5 female households to remain representative of the gender distribution in our population in table 2. A household is excluded from the sample if the dwelling is locked/empty, if all members of the household are below 18 or above 60 years of age¹⁸, if the members of the household are not willing to subscribe to our SMS service or the household refuses to respond or participate in the study. In any of these situations, the enumerator skips the current dwelling, records the reason for refusal and the next closest neighbor will be selected to be asked to participate. To classify each household as a female or a male household, we draw a random list *ex ante*, which classifies the order of the household to be either a male or female household. A summary of our sampling strategy can be found in figure 5.

Within the household, respondents are selected by listing all members in the household with their household status. After the listing is complete, a random number generator programmed in the survey tablet randomly selects the member in the household using a three step process: (i) first it restricts our within household sample to our eligible population¹⁹, (ii) second, we generate a random number for each eligible member in the household and pre-select members who are either household heads or spouses of household heads by allocating them a probability of 1, for everyone else in the household, we allocate equal probability of being randomly selected, (iii) third, we use the random numbers generated in (ii) to select '*x*' household member, and the enumerator asks to speak with the '*x*'th listed eligible individual to conduct a baseline survey, conditional on oral consent.

¹⁵The enumerators use in between 14 to 18 points for each charges; they exclude the points that are not in residential areas i.e. supermarkets etc.

¹⁶110 GPS points were original points, and the 18 points were drawn separately for replacement using the same method.

¹⁷We form a pair of enumerators(surveyors) to be one male enumerator and one female enumerator. For logistical and cultural reasons, we restrict the male enumerators to only survey male subjects and female enumerators to survey only female subjects.

¹⁸We restrict our sample to individuals who are old enough to understand our interventions.

¹⁹Eligibility depends upon the following criteria: (i) between the ages of 18 and 60; (ii) willing to receive our SMS messages and our treatment; and (iii) available in the dwelling at the time of the survey.

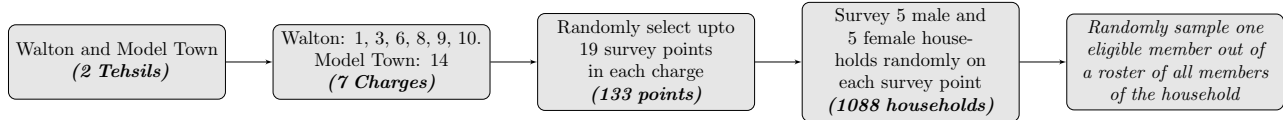


Figure 5: Sampling flowchart

4.1.2 Core Modules for the Baseline Survey

We include the following modules in our baseline in the specified order:

1. Information and Trust
2. Willingness to pay sessions
3. Forecast Elicitation
4. Attitudes and Behaviour towards Air Pollution
5. Time Use of the respondent and of the youngest physically active child in the respondent's household
6. Risk Aversion elicitation
7. Political preference elicitation
8. Demographics

4.1.3 Survey Frequency

We construct a panel dataset which collects data from our respondents using in-person and telephone based surveys. The frequency of data collection and field-work plan execution are indicated in figure 6. We collect data at three different stages of the project:

1. **In-person surveys:**
The study starts and ends with baseline and endline in-person surveys of all respondents in our study.
2. **Telephone surveys:**
Following a one week transitional period from the start of our SMS intervention, we survey all our respondents on a weekly basis using telephone calls. To do this, we draw a random order of respondents at the beginning of the first week and survey the respondents in the same random order every week.²⁰ We reach out to every respondent at two significantly spaced out timings in a particular day and on day $t + 1$. If in all three attempts the respondent does not respond to the phone call, we consider that particular respondent attrited for that particular telephone survey round. Using the results from our pilot we found the response rate of our telephone surveys to be 72% for the first week and we expect this rate to diminish in the following weeks. We end the process of weekly data collection one week post the completion of our endline survey.
3. **Treatment Survey:**
For all individuals in the forecast training treatment group (treatment 2 & 3) we conduct an in-person training session which allows us to collect data on the correlates of our treatment and air pollution forecast outcomes mentioned in section 4.1.2. We use this data to add another round only for treatment groups 2 & 3 in our panel survey.

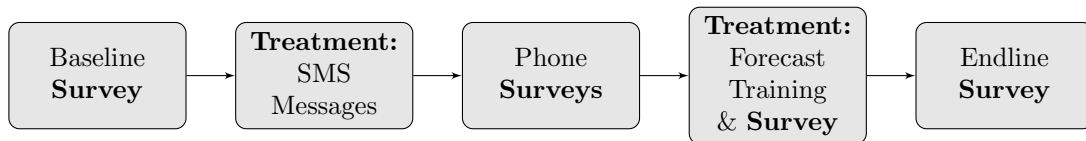


Figure 6: Field-work rollout phases

²⁰This allows each respondent a gap of 1 week between two telephone surveys.

4.2 Secondary Data

4.2.1 Air Pollution Data

1. AQMesh and Dusttrak II:

We use two industry qualified monitors: (i) the AQMesh²¹, and (ii) the Dusttrak II²². The AQMesh is located on the roof of a house in central Walton and collects and has been transmitting air pollution readings via GSM continuously since January 2018. These readings are accessible via API. The Dusttrak II is a handheld device that a research assistant uses to manually take readings in Walton 2-3 times per day. We have been collecting air pollution data for over a year prior to beginning this study and will continue to collect air pollution during this study.

2. **AirNow International:** U.S. EPA’s AirNow program is a repository of real time air quality data and forecasts for the United States. AirNow International is an international version of the U.S. based air quality data management and display system. It provides hourly data on $PM_{2.5}$ levels. We scrape this data on a regular basis from the AirNow website²³.

3. **MeteoBlue:** Meteoblue²⁴ uses nonhydrostatic mesoscale and multi-scale weather models, which we operate at resolutions between 3 km and 30 km. For air quality data, MeteoBlue makes use of forecast data from the European Commission and the ECMWF (European Centre for Medium-Range Weather Forecasts)²⁵. Meteoblue uses this third-party data to source its predictions and issues them from an atmospheric model with a 12 km resolution. We update these predictions everyday at UTC 06:00, 10:00, 12:00 and 18:00 to include them in our secondary data.

4. **SPRINTARS:** Spectral Radiation-Transport Model for Aerosol Species (SPRINTARS)²⁶ is a numerical model which estimates using simulations the effect of aerosols on the climatic system and its contribution to global air quality. It has been primarily developed by the Climate Change Science Section at the Research Institute for Applied Mechanics, Kyushu University in Fukuoka, Japan. SPRINTARS uses aerosols from both natural and anthropogenic sources to estimate categories for SPM, PM_{10} and $PM_{2.5}$. We use the forecasts generated from this model in our secondary data on air quality forecasts.

5. **Environment Protection Department**²⁷ (EPD): We collect data from the local environmental protection department’s data. This data is comprised of two different indices: (i) $PM_{2.5}$ levels; and (ii) AQI (Air Quality Index). Both of these indices are updated on the EPD’s website but not regularly. We do not use this data for our forecast model but only for robustness checks on our primary sources. Archived historical and daily data can be found on EPD’s website²⁸.

4.2.2 Weather Data

- **AccuWeather:** We scrape weather forecast data from AccuWeather²⁹ for the city of Lahore, Pakistan and update this data each day. This data includes variables on temperature levels, precipitation levels and general cloudcover. AccuWeather is a popular source of weather forecast data based on NOAA’s (National Oceanic and Atmospheric Administration) data and products.

4.2.3 Traffic Data

- **Google Maps:** We employ a research assistant to regularly collect data from Google Maps for a month before the baseline and during the baseline. Since Google Maps does not allow data scraping, we do this through a manual process.

²¹The AQMesh is a small-sensor air quality monitoring system for measuring outdoor and indoor air quality. Details on our product can be found here: <https://www.aqmesh.com/product/>

²²The Dusttrak-II is handheld aerosol monitor which is powered by a battery.. Detailed information for the device can be found here: <https://www.tsi.com/dusttrak-ii-aerosol-monitor-8532/>

²³The data can be obtained from the following link after selecting Lahore as a city from the drop-down menu: https://airnow.gov/index.cfm?action=airnow.global_summary

²⁴<https://content.meteoblue.com/en/content/view/full/4287>

²⁵Details about the ECMWF model can be found here: <https://www.ecmwf.int/en/forecasts>

²⁶Details about the SPRINTARS model can be found here: <https://sprintars.riam.kyushu-u.ac.jp/forecast.html>

²⁷A public department operating under the provincial government of Punjab, Pakistan.

²⁸<https://epd.punjab.gov.pk/>

²⁹<https://www.accuweather.com/en/pk/lahore/260622/daily-weather-forecast/260622>

5 Outcomes

5.1 Primary outcomes

To improve statistical power, some primary outcomes will be aggregated into indices, as described below. Relevant baseline section and question numbers are given below.

5.1.1 Willingness to pay for forecast information

This is our primary outcome in the domain of forecast consumption. It will be elicited from all subjects at endline using a BDM mechanism, with a maximum allowed WTP of 200 PKR for three months of forecast information.

5.1.2 Air pollution forecast error index

This is our primary outcome in the domain of forecast production. The following forecast variables will be compared to realized air pollution to compute forecast errors.

- Air pollution forecast $t+1$ (baseline/endline section 6f, question 3)
- Air pollution forecast $t+3$ (baseline/endline section 6f, question 7)

These errors will then be aggregated into an air pollution forecast error index.

5.1.3 Willingness to pay for masks

This outcome and following outcomes are primary in the domain of behavioral responses. WTP for masks is elicited by a BDM mechanism at baseline (section 5, question 1) and endline (section 5, question 1). At baseline the maximum WTP was 100 PKR. At endline we raised this maximum to 200 PKR.

5.1.4 Respondent time outdoors (from time diaries)

In both baseline and endline surveys, we elicit 24-hour time diaries covering the period up to 8AM on the survey date. (In the baseline survey, see section 7, questions h1-h24.) For each one-hour period subjects may select multiple options from the following list: Sleep Inside, Sleep Outside, Paid indoor work, Paid outdoor work, Home indoor work, Home outdoor work, Indoor Leisure, Outdoor Leisure, Travel, Other Indoor, Other Outdoor, Refuse to answer. In analysis, when subjects make multiple selections for a given hour, time will be assumed uniformly allocated over selections. For example, if a subject selects “Paid outdoor work” and “Outdoor leisure” from 4-5PM, we will assume 30 minutes devoted to each activity. This format balances the accuracy gains from the diary format against the need to keep the survey short. We will sum the total time a subject reports being outdoors throughout the day, a measure of time-use avoidance that is potentially less subject to experimenter demand concerns than the avoidance index in our secondary outcomes.

5.1.5 Proxy for utility variability

Theory suggests that improved forecasts enable agents to better smooth utility over time, increasing aggregate utility over multiple time periods. Naturally we cannot measure this directly, but as a proxy we ask agents about variability of subjective happiness at both baseline and endline. The question at endline is, “How variable has your level of happiness been from day to day over the past week?” At baseline, we asked “How variable has your level of happiness been over the past month?” While not identical, we will still consider our baseline measure as a control at endline for precision. (section 7, subsection h, question 1) (endline fore_var6).

5.2 Secondary outcomes

5.2.1 Travel time forecast error

At both baseline and endline, subjects are shown a map with two marked locations, A and B. Based on our pilot surveys, nearly all residents of Walton are familiar with these locations. Subjects are then asked to forecast the minimum time for a trip on a motorbike from A to B at a given time the next day. At baseline the forecast task is from *Koray Stop in Walton* to *Daewoo Station in Thokar*, at 7PM tomorrow. Forecasts are recorded in section 6, question 1 in baseline/endline. Subjects are told they will receive 250PKR if their

forecast is within 2.5 minutes and 100PKR if their guess is within 5 minutes of Google Maps' real-time estimate, recorded the next day by our research team. To prevent subjects drawing on Google Maps or other third-party forecasts just before the endline survey, points A and B will be *Koray Stop in Walton and Band Road*.

5.2.2 Labor supply forecast error

In weekly telephone surveys, subjects will be asked how many hours they worked in the past seven days, and how many hours they forecast working in the next seven days. Forecast errors will be computed based on these questions. Forecasts will not be incentivized, as we have no way to independently observe labor supply. This outcome enables us to test forecasting ability in a domain that has traditionally been more central to economic research. This and other non-incentivized forecasts will be evaluated by asking subjects for outcome realizations in a follow-up telephone call one week after the endline survey. In addition, we can compare the across-subjects variance of labor supply across treatment and control groups. This will provide evidence on whether improved forecast ability leads to more smoothing of labor supply.

5.2.3 Expenditure

At endline (fore_var3 & fore_var4), subjects will be asked to forecast their expenditures for the next seven days. This forecast will not be incentivized. This allows us to look at forecasting performance for another important economic outcome. In addition, we can compare the across-subjects variance of expenditure across treatment and control groups. This will provide evidence on whether improved forecast ability leads to more expenditure smoothing.

5.2.4 Calibration

In the course of the experiment, subjects will make a variety of forecasts. In most cases they will be asked for a level of confidence that their prediction is within a given range around the truth. For any single prediction this confidence level is not very informative. But we can compare success rates (the share of predictions within the given range) to average confidence at the level of a treatment or control group. This will enable us to evaluate whether either treatment improves calibration. For example, a group with average 65 percent confidence should make successful predictions 65 percent of the time.

5.2.5 Weather forecast takeup

We have a strong prior that weather forecasts are a useful input to pollution forecasting. For example, rainfall and high wind speeds typically predict lower particulate air pollution. As part of the baseline and endline surveys, subjects are offered the opportunity to view a weather forecast before making an air pollution forecast (baseline/endline section 6f, question 1). There is no associated cost. This provides a test of whether subjects understand the usefulness of this forecast input.

5.2.6 Telephone survey outcomes

We will survey each subject once per week by telephone. In pilot work we have found it can be difficult to reach a subject, and this may lead to reduced sample sizes. For this reason, we put the outcomes collected by telephone in the secondary class.

On each call, first we will ask subjects to report time spent outdoors on the previous day for the following individuals: themselves, the youngest physically active child in the household, and the oldest physically active adult in the household. We inquire about the latter two individuals because a large literature in environmental economics and epidemiology has found health effects of air pollution are more acute for the very young and the very old. If subjects are aware of this, outdoor time for the young and old may be an important margin of response. In order to reduce experimenter demand effects, air pollution will not be mentioned on the calls prior to these questions. Only after eliciting outdoor time will we ask subjects, "Are there any outdoor activities you planned to do yesterday that you decided to cancel or reschedule?" Note that this question does not explicitly mention air pollution, again to reduce experimenter demand effects.

We will also ask subjects, "At any point yesterday did you wear a mask?" Those that respond affirmatively will be asked to report the number of hours the mask was worn.

Lastly, we will conduct one telephone survey for each household one week after our endline (staggering the surveys to match the pace of our endline). During the endline, we will ask respondents to forecast paid and

un-paid labor hours for the week following the endline, as well as “happiness over the next week”. We will then ask retrospective questions on the phone survey to measure forecast accuracy in these non-incentivized domains.

5.2.7 Child time outdoors (from time diaries)

At endline, we will also elicit 24-hour time diaries for the youngest physically active child in the household. The possible categories are different as we don’t include work: 1 Sleep Inside; 2 Sleep Outside; 3 Indoor Study; 4 Outdoor Study; 5 Home indoor work; 6 Home outdoor work; 7 Indoor Leisure; 8 Outdoor Leisure; 9 Travel; 10 Other Indoor; 11 Other Outdoor; 12 Can’t Recall; 888 Don’t know; 999 Refuse to answer. We will limit the sample to diaries reported by female subjects, as pilot surveys indicated that male respondents frequently cannot provide 24-hour diaries for children. In addition, we will exclude diaries for which a respondent replies “Don’t know” more than once. Otherwise, we will analyze these responses just as we do adult time diaries.

5.2.8 Time-use avoidance index

The following variables will be aggregated into a time-use avoidance index:

- “In the past week, I reduced the number of hours I spent on non-work outdoor activities in response to poor air quality” (baseline/endline section 7, question 15)
- “In the past week, I reduced the number of hours I worked significantly in response to poor air quality” (baseline/endline section 7, question 16)
- “In the past week, I have rescheduled activities across days in response to poor air quality” (baseline section 7, question 17) (endline section 7, question 18)

5.2.9 Children’s avoidance

At both baseline (section 7, question 31) and endline (section 7, question 31), subjects are asked, “In the past week, have you restricted your children from going outside in response to poor air quality?” Our prior is that responses to this question may be influenced by experimenter demand. To get a sense of whether such effects are present, we will also analyze responses to the question, “In the past week, have you restricted your children from going outside in response to any other reasons?”

5.2.10 Additional proxies for utility variability

In addition to asking subjects how variable their happiness has been day to day over the last week (primary outcomes above), we also ask about the variability of income and expenditure:

- Concerns about confidentiality and tax enforcement make asking about income or expenditures inadvisable in our setting. Instead we elicit income variability directly using the following questions: “How variable has your level of income been from week to week over the past month?” (baseline section 8, subsection H, question 2) (endline fore_var7).
- We also ask about variability of expenditure at endline: “How variable has your level of expenditure been from week to week over the last month?” Note since we do not have a baseline measure of this variable we will not control for such in our specifications (endline fore_var5).

Finally, for all three proxies for utility variability, we also ask about week to week variability over the past month: “How variable has your level of income been from week to week over the last month?”, “How variable has your level of expenditure been from week to week over the past month?”, and “How variable has your level of happiness been from week to week over the last month?” We expect day-to-day changes to be more pronounced given the nature of our setting but it is possible respondents may better recall week-to-week changes.

5.2.11 Air pollution information seeking

We are interested in whether or not treatment, especially the forecast training, leads subjects to seek more information about air pollution on their own. To capture this, we ask several questions on the endline survey. The first set is about awareness: “I am aware of the air quality in Lahore”, “I am aware of the air quality in Walton”, “I am aware of the air quality in the area where I work”, “I am aware of the air quality where my children go to school”. We will estimate treatment effects on an awareness index. The second set is

specifically about frequency of information access: “What were your sources of air quality information in Lahore?” (select all that apply and list others) and “How many times in a week do you check the air quality from the sources mentioned?” We will multiply the number of sources times the frequency for each source to get a count of the total times any source was accessed each week. We will estimate treatment effects on this count. Last, we asked “How many times in a week do you check the weather forecast?” We will also estimate treatment effects on this count as weather information can be used in generating pollution forecasts.

5.2.12 Policy preferences

At endline, we ask subjects a series of questions related to their policy preferences: (after an introduction) “Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies.

Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore.

Policy B: The government has decided to invest in health care programs in Lahore.

Which policy will you prefer?

What share of provincial government spending should go to Policy A?”

We repeat the same set of questions for programs aimed at improving air quality versus aimed at improving education and waste management.

We will create two indices, one for policy preferences and one for continuous policy investment choices and will estimate treatment effects on both.

5.3 Control variables

5.3.1 Baseline Elicitations

Where available, baseline outcome measures will be used as control variables. This includes all primary outcomes except willingness to pay for our air pollution forecast. For secondary outcomes, available baseline measures include: travel time forecast error (section 6, question 1), weather forecast takeup (section 6f, question 1), time spent outside (from the baseline diary), children’s avoidance (section 7, question 31), and air pollution information seeking.

5.3.2 Risk Aversion

There is a well-established theoretical and empirical link between risk aversion and health-related choices under uncertainty (e.g risk aversion and health insurance). Given that evidence, we expect risk aversion will be an important determinant of willingness to pay for air pollution information and avoidance behavior. Therefore as part of our baseline and endline surveys we elicit the respondent’s preferences over risk.

As part of both surveys, we elicit both an ordinal (non-incentivized) measure of risk and conduct an incentivized lottery game. While there is evidence that non-incentivized ordinal measures of general risk attitudes are highly correlated with incentivized measures (Dohmen et al., 2011; Friedman, 1974), the relatively low cost of incentivizing our risk measure in Pakistan allows us to use both methods. As part of the section on risk attitudes, we first ask respondents if they see themselves as someone who takes risk or evades them in the health domain (section 8, question 1).

We then play an incentivized lottery game, in which subjects are offered the choice between a lottery or a sure payment 5 (10 in endline) times. In each question the subject is offered the same lottery (a 50-50 chance of getting PKR 150 or PKR 0), but different sure payments, with the sure payment starting at PKR 0 in the first question and increasing by increments of PKR 30 (increments of 15 at endline). Subjects are informed at the start of the game that payment will be made based on the choice they make for a single round, which will be chosen at random. At the end of five rounds the respondent chooses one of five colors, presented on the surveyor’s tablet, and a round is selected based on the randomly selected number behind the color. Payments are made in cash at the completion of the section. A minor deviation from the standard process for such games was made based on behavior in the pilot. In the pilot, we found multiple switching across rounds. Discussions with enumerators suggested this was due to low mathematical literacy and inability to understand underlying probabilities. To counter this, we pre-selected the rational choices for the first and last questions to the lottery and sure payment respectively.

We recollect this incentivized measure at endline because of an enumeration error at baseline—we did not properly explain to subjects that one of their choices would randomly pay out *before* they made their choices.

5.3.3 Accuracy Rating for Forecasts

In our telephone surveys and at endline, subjects receiving our air pollution forecasts will be asked to assess the accuracy of those forecasts. This variable will be employed in analysis of treatment heterogeneity.

5.3.4 Expectations

In our telephone surveys, all subjects will be asked for a forecast of the next day’s air pollution on a discrete scale (e.g. “Average”, “Somewhat above average”). Based on these forecasts, we will construct a measure of how surprising our forecast should be. This measure of surprise will be employed in analysis of treatment heterogeneity.

5.3.5 Other variables for analysis of heterogeneity

Some demographic variables will be used in analysis of treatment effect heterogeneity. These include: the presence of a household member with a respiratory condition (section 7, question 1), responsibility for one or more elderly (demographic section, question 3), responsibility for one or more children (demographic section, question 5), education (demographic section, question 7), gender (section 2, question 2) and age (section 2, question 3). As part of our baseline survey, we implement a practice BDM auction for a piece of candy and ask comprehension questions afterward (section 4.1). These questions provide a reasonable proxy for numeracy and will also be used in analysis of heterogeneity. Section 3 poses questions on subjects’ knowledge of air pollution, while section 7 poses questions on subjects’ concern about air pollution.

6 Empirical Analysis

6.1 Balancing Checks

Let Z_F denote treatment with forecasts, Z_T treatment with training, and $Z_{FT} = Z_F * Z_T$ treatment with both interventions. Let \mathbf{Z} be a vector with one element representing each treatment condition. Let W denote covariates employed for blocking or stratification, and X covariates not so employed. For each group of covariates a standard balance table will be reported, including means for the three treatment conditions, differences relative to the control condition, and t-tests of the null hypothesis of zero difference. The table for W is merely a check on whether blocking and stratification were conducted properly, so it will appear in the appendix. The table for X is potentially more interesting and will appear in the body of the paper. Should one of the t tests for a covariate in X reveal imbalance, that covariate will be used as a control in all regression analyses. Appendix tables will show models that interact imbalanced covariates with treatment. In addition, regressions of the following form will be estimated using Z_F , Z_T , and Z_{FT} as the dependent variable;

$$Z_i = \mathbf{X}'_i \boldsymbol{\eta}_1 + \mathbf{W}'_i \boldsymbol{\eta}_2 + \epsilon_i$$

. The F statistics for these regressions will be reported, and the associated p-values will be obtained by randomization inference.

Attritors will also be evaluated for balance. First, attrition rates will be reported for all four experimental conditions. The difference between these rates will not be formally tested, as rejecting the null hypothesis of zero difference does not necessarily imply bias in our estimators. Second, attritors and non-attritors will be compared on observables. Let A be an attrition dummy. The following regression will be estimated;

$$A_i = \mathbf{Z}'_i \boldsymbol{\kappa}_1 + \sum_{a=F,T,FT} Z_{ai} \mathbf{X}'_i \boldsymbol{\kappa}_{a2} + \sum_{a=F,T,FT} Z_{ai} \mathbf{W}'_i \boldsymbol{\kappa}_{a3} + \mathbf{X}'_i \boldsymbol{\kappa}_4 + \mathbf{W}'_i \boldsymbol{\kappa}_5 + \omega_i$$

. Again the F statistic for this regression will be reported, and the associated p-value will be obtained by randomization inference. This will test whether attritors and non-attritors differ on observables, including treatment. Lee bounds for estimated effects on primary outcomes will appear in the appendix.

6.2 Treatment Effects

The estimation strategy for primary outcomes is given explicitly below. The strategy for some secondary outcomes is given explicitly, but for others we will proceed by analogy with the primary outcomes.

6.2.1 Intent to Treat

An effect will be estimated between subjects for the following outcome(s): willingness to pay for 1 month of SMS forecasts. The estimating equation will be as follows;

$$Y_i = \alpha + \mathbf{Z}'_i \boldsymbol{\beta} + \mathbf{X}'_i \boldsymbol{\gamma} + \varepsilon_i$$

. The vector \mathbf{X}_i will include block indicators and indicators for survey dates during the endline wave. Results with heteroskedasticity-robust asymptotic SEs will appear in the appendix, both with and without time-varying controls. We are most interested in whether willingness to pay is positive for subjects exposed to our SMS forecasts. This is arguably the policy-relevant quantity. If a government begins providing air quality forecasts, then in the long run most constituents will be exposed, and so it is post-exposure willingness to pay that should enter a long-run cost-benefit analysis. The corresponding hypothesis test is one-tailed: $\alpha + \beta_F > 0$. This is the test that will be included in our multiple testing correction procedure. The hypotheses that willingness to pay among control subjects is positive ($\alpha > 0$), that training affects willingness to pay ($\beta_T \neq 0$), and that the treatments interact ($\beta_{FT} \neq 0$), are interesting but secondary.

Effects will be estimated within subject for the following primary outcomes: willingness to pay for a particulate-filtering mask, the air pollution forecast error index, the proxy for utility variance, and the time outside. The estimating equation will be as follows;

$$Y_i = \mathbf{Z}'_i \boldsymbol{\beta} + \gamma Y_{0i} + \mathbf{X}'_i \boldsymbol{\delta} + \varepsilon_i$$

. In this equation i indexes subject. Y is the outcome and Y_0 is the corresponding baseline variable. \mathbf{Z} is the vector of three treatment dummies Z_F , Z_T , and Z_{FT} , with each equal to 1 for subjects randomized into a given treatment and 0 otherwise. \mathbf{X} is a vector of controls, which may be chosen using a procedure such as LASSO. Results will be reported with this vector empty, save for the constant term.³⁰ Observations will be weighted to reflect block sizes and treatment probability as in Gerber and Green (2012). Hypothesis testing on $\hat{\boldsymbol{\beta}}$ will vary by outcome. For willingness to pay for a particulate-filtering mask, theory predicts that elements of $\boldsymbol{\beta}$ may have either sign, depending on whether information and training are substitutes for, or complements with, masks. The tests will be two-tailed. For the air pollution forecast error index, theory predicts that more information and better forecast training should both weakly improve forecast quality. The tests will be one-tailed, against the alternatives $\beta_F < 0$, $\beta_T < 0$, and $\beta_{FT} < 0$. Theory predicts that both treatments should improve subjects' ability to smooth utility over time, so tests in the model of the proxy for utility variance will be one-tailed ($\beta_F < 0$, $\beta_T < 0$, and $\beta_{FT} < 0$). Finally we expect both treatments to increase avoidance, but have no strong prior on their interaction, so tests will be against the following alternatives: $\beta_F > 0$, $\beta_T > 0$, and $\beta_{FT} \neq 0$.

Theory predicts that the sign of the ITT effects may vary, both within and across subjects, because of differences in expectations. We discuss this important heterogeneity in Section 6.3 below.

For the time-use questions in our telephone surveys, dynamic effects may be present and there are multiple ways to estimate them. Several will be reported, either in the primary tables or the appendix. One possibility is to estimate a separate effect for each date on which a telephone survey is conducted. The estimating equation will be as follows.

$$Y_{id} = \boldsymbol{\alpha}_i + \boldsymbol{\delta}_d + \sum_{a=F,T,FT} Z_{ai} \boldsymbol{\beta}_{ad} + \mathbf{X}'_{id} \boldsymbol{\gamma} + \varepsilon_{id}$$

The vectors $\boldsymbol{\beta}_{ad}$ are the estimands of interest; each one contains a separate parameter for each date. This is the most flexible way to model dynamic effects, but may suffer from poor statistical power. Regressions will also be estimated pooling these outcomes at the week and month level. Finally a regression will be estimated in which ITT effects are assumed to evolve linearly over dates.

6.2.2 Treatment on the Treated

For the training arm ($Z_T = 1$) we will observe participation in the training session ($P_T = 1$). For the forecast arm ($Z_F = 1$) takeup means looking at our SMS forecast. This will not be observable to us. Moreover it will plausibly vary, both across individuals and within individual over time. We will construct a takeup measure using telephone survey responses to the question "How many times in the last week have you seen

³⁰All treatment regressions will include a constant term, but we omit it from most equations in this document in the interest of clarity.

our pollution forecast message?” (This question will be asked only of subjects assigned to the forecast treatment.) Denote the response of subject i on date d as R_i . Subjects who respond “not sure” will be assigned $R_i = 0$. Then a subject’s takeup for that week is defined as $P_{Fid} = \frac{1}{7}R_i$. The subject’s aggregate takeup is $P_{Fi} = \frac{1}{D_i} \sum_{d=1}^{D_i} P_{Fid}$, where D_i is the total number of telephone survey responses for individual i . This variable will range from zero to one, and can be interpreted as the fraction of forecasts taken up. While P_{Fi} will be measured with error, in expectation this error has zero covariance with our random treatment assignment \mathbf{Z}_i . For subjects in the arm assigned to both treatments $P_{FT} = P_F P_T$. Let the vector \mathbf{P} contain all three takeup variables.

TOT effects will be estimated using 2SLS, with \mathbf{Z} instrumenting for P_T and P_F . In particular, the second-stage specification for within-subject analyses will be as follows.

$$Y_i = \alpha + \widehat{\mathbf{P}}_i' \boldsymbol{\beta} + \gamma Y_{0i} + \mathbf{X}_i' \boldsymbol{\delta} + \varepsilon_i$$

In this equation i indexes subject. Y is the outcome and Y_0 is the corresponding baseline variable. \widehat{P}_T and \widehat{P}_F are instrumented takeup. Other controls and hypothesis testing will be as in the ITT regressions. The first-stage specifications will be as follows.

$$\begin{aligned} P_{Ti} &= \eta_T + \mathbf{Z}_i' \boldsymbol{\phi}_T + \nu_T Y_{0i} + \mathbf{X}_i' \boldsymbol{\theta}_T + \nu_{Ti} \\ P_{Fi} &= \eta_F + \mathbf{Z}_i' \boldsymbol{\phi}_F + \nu_F Y_{0i} + \mathbf{X}_i' \boldsymbol{\theta}_F + \nu_{Fi} \\ P_{FTi} &= \eta_{FT} + \mathbf{Z}_i' \boldsymbol{\phi}_{FT} + \nu_{FT} Y_{0i} + \mathbf{X}_i' \boldsymbol{\theta}_{FT} + \nu_{FTi} \end{aligned}$$

Controls will naturally be identical in both the first- and second-stage regressions.

The high-frequency avoidance measurements again require a different approach. The second- and first-stage specifications will be as follows. In contrast to the immediately preceding specifications, they include individual fixed effects $\boldsymbol{\alpha}_i$ and date fixed effects $\boldsymbol{\delta}_d$.

$$\begin{aligned} Y_{id} &= \boldsymbol{\alpha}_2 i + \boldsymbol{\delta}_{2d} + \widehat{\mathbf{P}}_i' \boldsymbol{\beta} + \mathbf{X}_{id}' \boldsymbol{\gamma} + \varepsilon_{id} \\ P_{Tid} &= \boldsymbol{\alpha}_{1T} i + \boldsymbol{\delta}_{1Td} + \mathbf{Z}_i' \boldsymbol{\phi}_T + \mathbf{X}_{id}' \boldsymbol{\theta}_T + \nu_{Tid} \\ P_{Fid} &= \boldsymbol{\alpha}_{1F} i + \boldsymbol{\delta}_{1Fd} + \mathbf{Z}_i' \boldsymbol{\phi}_F + \mathbf{X}_{id}' \boldsymbol{\theta}_F + \nu_{Fid} \\ P_{FTid} &= \boldsymbol{\alpha}_{1FT} i + \boldsymbol{\delta}_{1FTd} + \mathbf{Z}_i' \boldsymbol{\phi}_{FT} + \mathbf{X}_{id}' \boldsymbol{\theta}_{FT} + \nu_{FTid} \end{aligned}$$

Effects will also be estimated by collapsing the data to the subject level and employing the same 2SLS specifications as for other outcomes.

Effects will be estimated between subjects for the following outcomes: willingness to pay for 1 month of SMS forecasts (PKR). The first- and second-stage estimating equations will be as follows.

$$\begin{aligned} Y_i &= \alpha + \widehat{\mathbf{P}}_i' \boldsymbol{\beta} + \mathbf{X}_i' \boldsymbol{\gamma} + \varepsilon_i \\ P_{Ti} &= \eta_T + \mathbf{Z}_i' \boldsymbol{\phi}_T + \mathbf{X}_i' \boldsymbol{\theta}_T + \nu_{Ti} \\ P_{Fi} &= \eta_F + \mathbf{Z}_i' \boldsymbol{\phi}_F + \mathbf{X}_i' \boldsymbol{\theta}_F + \nu_{Fi} \\ P_{FTi} &= \eta_{FT} + \mathbf{Z}_i' \boldsymbol{\phi}_{FT} + \mathbf{X}_i' \boldsymbol{\theta}_{FT} + \nu_{FTi} \end{aligned}$$

One- and two-tailed hypothesis tests for primary outcomes will be analogous to those in our ITT regressions. In addition, a variant of the between-subjects TOT specification will be used to estimate the effect of baseline mask takeup on all endline outcomes. The instrument Z_M will be the randomly drawn BDM price, the treatment P_M will be mask takeup, and the control set \mathbf{X} will include a set of dummies for subjects’ BDM bids. If possible exhaustive bid dummies will be used, but bids may be pooled within an interval up to 20PKR to improve statistical power. These estimated mask treatment effects are of secondary interest. They will not be included in corrections for multiple hypothesis testing.

And finally, a similar approach will be used to estimate the effect of winning the endline BDM for our SMS service on several outcomes measured from a phone survey one week after the endline. For this analysis, we will limit to the sample of households that were in the control group for the SMS service treatment and thus had never received it before. The instrument Z_S will be the randomly drawn BDM price, the treatment P_S will be SMS takeup, and the control set \mathbf{X} will include a set of dummies for subjects’ BDM bids. If possible exhaustive bid dummies will be used, but bids may be pooled within an interval up to 20PKR to improve statistical power. These estimated SMS service treatment effects are of secondary interest given that we will only have been treating subjects for less than a week. They will not be included in corrections for multiple hypothesis testing.

6.3 Heterogeneous Effects

Theory predicts several important dimensions of heterogeneity: 1) risk aversion; 2) perceived forecast quality; and 3) expectations. First, Rosenzweig and Udry (2013) point out that forecasts serve an insurance function in that they allow agents to take costly variance-reducing action before uncertainty is resolved. A model of this type predicts that more risk-averse agents may respond differently to forecast provision than less risk-averse agents. Second, treated subjects who perceive the forecasts to be low-quality will likely respond less than subjects who perceive them to be high quality. Third, treatment effects may vary both within and across subjects because of differences in expectations. For example, receiving a forecast of high pollution may increase avoidance for a subject with low expectations but decrease it for a subject with high expectations. Several other dimensions of heterogeneity have an *ex ante* foundation, but are not the focus of our study and results will be reported in the appendix. Subjects who are the primary carriers of a single household cell phone may be more exposed to our SMS forecasts and so exhibit larger responses. Subjects with higher baseline concern about air pollution may respond more to treatment. The interaction of treatment with baseline knowledge of air pollution is not obvious. Highly informed subjects may respond less if there are ceiling effects on avoidance, but if such effects are absent they may respond more. A large economics literature has found larger health effects of air pollution for the very young, the very old, and people with respiratory conditions. The presence of a household member in one of these categories may be an important dimension of heterogeneity. Subjects who are more informed or concerned about air pollution and weather at baseline may exhibit different effects. More educated or numerate subjects may exhibit larger effects because they are more sophisticated producers and consumers of forecasts. Subjects of different ages may respond differently, e.g. because of differing preferences or remaining years of life. Finally, our letter of support from the government of Punjab requires that we examine heterogeneous effects by gender. All estimates of heterogeneity will be excluded from corrections for multiple hypothesis testing.

6.3.1 Intent to Treat

For within-subject analysis of ITT heterogeneity, the estimating equation will be as follows.

$$Y_i = \alpha + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}'_i \beta_a + \gamma Y_{0i} + \mathbf{X}'_i \delta + \varepsilon_i$$

Here H_i is the relevant dimension of heterogeneity (e.g. risk aversion), a vector of dummies that may represent bins of an underlying continuous variable. These bins are exhaustive, so that treatments \mathbf{Z} do not enter separately. Where a continuous measure of heterogeneity is available, we will also estimate specifications in which treatment enters separately and interacted with the continuous variable.

For between-subjects analysis of ITT heterogeneity, the estimating equation will be as follows.

$$Y_i = \alpha + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}'_i \beta_a + \mathbf{X}'_i \gamma + \varepsilon_i$$

As before, estimating heterogeneous effects on the high-frequency measures of avoidance from telephone surveys requires a different approach. We expect larger effects from the forecast treatment when the forecast is higher relative to subjects' priors. Avoidance may increase when pollution is unexpectedly high, and decrease when it is unexpectedly low. Let E_{id} be mean expected pollution for date d , elicited by telephone from a random subset of subjects in the same experimental condition as subject i at date $d - 1$. (Because treatment may have dynamic effects on expectations, we cannot use expectations from subjects in other experimental conditions.) Define "surprise" as $S_{id} = F_d - E_{id}$, the difference between our forecast F_d and expectations.³¹ Then heterogeneity can be estimated as follows.

$$Y_{id} = \alpha_i + \delta_d + \mathbf{Z}'_i \beta + \sum_{a=F,T,FT} \zeta_a Z_{ai} S_{id} + \mathbf{X}'_{id} \gamma + \varepsilon_{id}$$

For conditions involving forecasts ($Z_F = 1$ and $Z_{FT} = 1$), our prior is that coefficients ζ will be positive; larger surprises will lead to larger changes in avoidance behavior. Tests will be one-tailed. For the training condition ($Z_T = 1$), our prior is that surprises will have no effect and tests will be two-tailed. The interaction effect of S_{id} is potentially non-linear or even non-monotonic. For example, surprising moderate pollution might increase avoidance, but surprising extreme pollution might decrease avoidance if a subject believes it will be ineffective. To address this possibility we will estimate a specification including a vector of dummies

³¹A binned measure of surprise may be employed as well.

for binned values of S_{id} .

6.3.2 Treatment on the Treated

For within-subject analysis of TOT heterogeneity, the 2SLS estimating equations will be as follows. Here H_i is the relevant dimension of heterogeneity (e.g. risk aversion).

$$\begin{aligned} Y_i &= \alpha + \sum_{a=F,T,FT} P_{ai} \widehat{\mathbf{H}}_{it} \beta_a + \gamma Y_{0i} + \mathbf{X}_i' \boldsymbol{\delta} + \varepsilon_i \\ P_{Fi} &= \eta + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}_i' \boldsymbol{\phi} + \nu Y_{0i} + \mathbf{X}_i' \boldsymbol{\theta} + v_{Fi} \\ P_{Ti} &= \eta + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}_i' \boldsymbol{\phi} + \nu Y_{0i} + \mathbf{X}_i' \boldsymbol{\theta} + v_{Ti} \\ P_{FTi} &= \eta + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}_i' \boldsymbol{\phi} + \nu Y_{0i} + \mathbf{X}_i' \boldsymbol{\theta} + v_{FTi} \end{aligned}$$

For between-subject analysis of TOT heterogeneity, the 2SLS estimating equations will be as follows.

$$\begin{aligned} Y_i &= \alpha + \sum_{a=F,T,FT} P_{ai} \widehat{\mathbf{H}}_i \beta_a + \mathbf{X}_i' \boldsymbol{\gamma} + \varepsilon_i \\ P_{Fi} &= \alpha + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}_i' \boldsymbol{\phi} + \mathbf{X}_i' \boldsymbol{\theta} + v_{Fi} \\ P_{Ti} &= \alpha + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}_i' \boldsymbol{\phi} + \mathbf{X}_i' \boldsymbol{\theta} + v_{Ti} \\ P_{FTi} &= \alpha + \sum_{a=F,T,FT} Z_{ai} \mathbf{H}_i' \boldsymbol{\phi} + \mathbf{X}_i' \boldsymbol{\theta} + v_{FTi} \end{aligned}$$

6.4 Machine Learning Inference

As indicated above, in some specifications we may employ machine-learning techniques to choose a precision-maximizing control set. This is consistent with the recommendation of Ludwig et al. (2019). According to Wager et al. (2016), ridge regression, LASSO, elastic net, and random forest procedures can all be used to improve efficiency without introducing bias into estimated treatment effects.

6.5 Additional notes on control variable selection

While we expect our well-trained enumerators and survey design to minimize non-responses to specific questions, we of course allow subjects the choice of not responding to any question (or saying they don't know). We will not consider as potential control variables any questions with high non-response rates, as these may indicate confusion and higher likelihood of measurement error. In addition, to not decrease our sample size when we include controls with non-responses, we will (i) create a dummy variable for each control for whether the subject did not answer the associated question, (ii) replace the control variable with zero instead of missing for non-responses, and include both the control and the dummy in our analysis. Note whenever we do this we will not attempt to interpret the coefficients on these variables.

6.6 p-Value adjustments

Standard errors will be computed using randomization inference (RI), as described in Gerber and Green (2012). For within-subject analyses we will have multiple observations per subject. In such cases we will permute treatment over subjects, not observations. This is the RI equivalent to clustering at the subject level. For between-subjects analyses will have one observation per subject. Because treatment will be randomized at the individual level and we have designed the experiment to eliminate spillovers, clustered permutations will not be necessary. We expect to use the established R library *ri*. In specifications with covariate adjustment, treatment permutation will be over residualized outcomes.

As RI can be computationally demanding, Appendix tables will display results with SEs based on asymptotics.

For within-subject analyses SEs will be clustered at the individual level. For between-subjects analyses heteroskedasticity-robust SEs will be used.

To address the problem of multiple hypothesis testing, we will control for the false discovery rate (at five percent) following Romano and Wolf (2005) for a subset of hypotheses related to our primary outcomes: willingness to pay for forecast information ($\alpha + \beta_F > 0$), air pollution forecast error index ($\beta_F = 0, \beta_T = 0$), willingness to pay for masks ($\beta_F = 0, \beta_T = 0$), time spent outdoors ($\beta_F = 0, \beta_T = 0$), and our proxy for utility variability ($\beta_T = 0$). The total count of included tests is 8. Note this is not an exhaustive list of hypotheses involving treatment effects on our primary outcomes. Where a test is less interesting we exclude it from the Romano-Wolf procedure and report an unadjusted p-value. Unadjusted p-values will also be reported for secondary outcomes.

We will also correct for multiple hypothesis testing across each tests of the three primary dimensions of heterogeneity within each primary outcome (i.e. we will conduct 8 distinct corrections).

7 Experimental Challenges

7.1 Attrition from the Sample

Some subjects are expected to attrit. The principal mechanism for attrition would be refusal to participate in the endline survey. The extent of such attrition is difficult to forecast, but pilot surveys provide one piece of evidence that may be relevant. Conditional on answering the door, 12.5 percent of subjects refused to take part in the pilot survey. If subjects were to exhibit similar behavior at endline, the study would see roughly 12.5 percent attrition. Another recent survey conducted by our implementing partner in Lahore saw roughly 15 percent non-response, which suggests this estimate is reasonable.

Subjects will receive payment for completing the endline survey, which should reduce attrition somewhat. In the event subjects are not home at the time of the first attempted endline visit, enumerators will return up to two times.

We assume a 15 percent attrition rate in our power calculations above.

7.2 Spillovers

Given the ease of relaying our forecasts, spillovers may be a first-order concern for our SMS forecast treatment. The sampling was designed to mitigate these concerns by separating subjects in space, but some networks may include both treatment and control subjects despite this. We also ask subjects not to share pollution forecasts outside their household. We seek to measure those spillovers we cannot eliminate. At baseline we ask subjects which cellular network they are on (section 4, question 9z); this may be weakly correlated with social networks. More importantly, we ask whether subjects are members of social media groups in which information about Walton is shared (section 9, question 3). For subjects who reply “Yes,” we ask for the names of the groups. At endline, we will also ask directly whether subjects have shared our forecasts and if so, where they have shared our forecasts. And we will directly ask control group members if they received our forecasts from someone else.

If we do detect spillovers, we will not directly address them in our primary analysis, as they would only attenuate any estimated impacts. We will address measured spillovers in two ways in the appendix: first, we will consider them as one would non-compliance, by instrumenting for receiving forecasts by treatment assignment in our primary outcome regressions; second, we will treat membership in a social media group where somebody shared our forecasts as a (non-random) dimension of heterogeneity.

7.3 Experimenter demand effects

We might be worried that some subject responses, especially around air pollution avoidance, may be affected by experimenter demand effects, i.e. subjects may say they took action to avoid air pollution when they did not if they think that is what we want to hear. This may be exacerbated if subjects think future interactions and payouts could depend on responses. We try to mitigate these effects in several ways. First, all of our enumerators are trained to distance themselves from the implementation of treatment activities and to act as unbiased observers, with no promises of future interactions. We also have ensured enumerators at the endline are not those that were involved in inviting subjects to treatment or providing them forecast training. Second, we have phrased questions and selected outcomes to try to mitigate experimenter demand effects, which we explain as necessary above. Third, we are including a Social Desirability Scale module in our

endline survey, as in Crowne and Marlowe (1960) and as used in recent studies such as Dhar et al. (2018). In the appendix, we will report our primary results controlling for subjects' social desirability score. We will conduct heterogeneity analysis using this score as an additional appendix exercise to understand if those who seem to exhibit more social desirability are driving our impacts.

8 Additional paper on subjects' forecasts of choice

In addition to asking subjects to forecast travel time, air pollution, labor supply, and so on, we also asked an open ended question: "No we want you to forecast a task of your choice. What is the outcome you would like to forecast?" followed by "On which date would you like us to ask you about the realization of your forecast?" and "What is your forecast?"

We plan to write a secondary paper in which we (i) present descriptive statistics about the forecasts subjects choose and (ii) present results about the accuracy of these forecasts. We will do so through follow-up phone calls with subjects after the date that they provided passes (for those dates in the near future). We will also test the impact of the forecast training on this accuracy following the above empirical specifications. This is akin to testing a secondary hypothesis so we will not account for it in any multiple hypothesis test corrections.

Lastly, we will include in our follow-up phone calls additional questions meant to understand subjects' decisions, attitude towards forecasting, and uncertainty. As we will not look at treatment effects on these questions but will use them for descriptive purposes, we will not reproduce them in this pre-analysis plan.

9 Change Log

Category	Description	Section changed
Research questions	We restrict our research questions to only detect effects on the variance of utility within subject.	Section 1.1.3
Labour forecasts	We include outcomes on respondent ability to forecast their working hours labor, levels of happiness and level of expenditure over the next 7 days.	Section 5.2.6
Avoidance behaviour of children	We expand the knowledge of household time-use and avoidance by eliciting the avoidance of the youngest active child in the household and averaging adult and child time use.	Sections 5.2.8, 4.1.2
Policy Preferences	At endline, we elicit citizen preferences on government programs.	Sections 4.1.2 & 5.2.12
Secondary outcomes	We include outcomes that attempt to measure whether people have independently sought out information related to air pollution and, how often have they engaged in information-seeking behavior.	Section 5.2.11
Model	We add a section that communicates the structure of a theoretical model that we will use predict our effects to clarify the relationship between our empirical estimates and structural parameters	Section 2
Phone survey	We will evaluate all outcomes from our telephone surveys to be secondary since we expect the response rates in our telephone surveys to be relatively low.	Section 5.2.6
Risk aversion	We modify our risk aversion elicitation in the endline survey to include higher payouts.	Section 5.3.2
Control variables	We include details on the inclusion and exclusion of control variables based on non-response.	Section 6.5
Experimental challenges	We construct a social desirability index at endline to detect potential experimenter demand effects.	Section 7.3
Forecast service	At endline, we offer respondents an updated SMS service product i.e. we include health statuses associated with pollution levels as a part of the SMS message in the product.	Section 10.3.1
Additional paper	We added a short note an an additional paper we will write on subjects' forecasts of choice	Section 8
Inference	We update our method to control for false discovery.	Section 6.6

References

- Achyuta Adhvaryu, Namrata Kala, and Anant Nyshadham. Management and shocks to worker productivity. Technical report, National Bureau of Economic Research, 2019.
- Anna Alberini, Maureen Cropper, Tsu-Tan Fu, Alan Krupnick, Jin-Tan Liu, Daigee Shaw, and Winston Harrington. Valuing health effects of air pollution in developing countries: the case of taiwan. *Journal of Environmental Economics and Management*, 34(2):107–126, 1997.
- Eva Arceo, Rema Hanna, and Paulina Oliva. Does the effect of pollution on infant mortality differ between developing and developed countries? evidence from mexico city. *The Economic Journal*, 126(591):257–280, 2016.
- Susan Athey and Guido W Imbens. The econometrics of randomized experiments. In *Handbook of Economic Field Experiments*, volume 1, pages 73–140. Elsevier, 2017.
- Gordon M Becker, Morris H DeGroot, and Jacob Marschak. Measuring utility by a single-response sequential method. *Behavioral science*, 9(3):226–232, 1964.
- Tom Y Chang, Joshua Graff Zivin, Tal Gross, and Matthew Neidell. The effect of pollution on worker productivity: Evidence from call center workers in china. *American Economic Journal: Applied Economics*, 11(1):151–72, 2019.
- Yuyu Chen, Avraham Ebenstein, Michael Greenstone, and Hongbin Li. Evidence on the impact of sustained exposure to air pollution on life expectancy from china’s huai river policy. *Proceedings of the National Academy of Sciences*, 110(32):12936–12941, 2013.
- Aaron J Cohen, H Ross Anderson, Bart Ostro, Kiran Dev Pandey, Michal Krzyzanowski, Nino Künzli, Kersten Gutschmidt, Arden Pope, Isabelle Romieu, Jonathan M Samet, et al. The global burden of disease due to outdoor air pollution. *Journal of Toxicology and Environmental Health, Part A*, 68(13-14):1301–1307, 2005.
- Maureen L Cropper, Nathalie B Simon, Anna Alberini, Seema Arora, and PK Sharma. The health benefits of air pollution control in delhi. *American Journal of Agricultural Economics*, 79(5):1625–1629, 1997.
- Douglas P Crowne and David Marlowe. A new scale of social desirability independent of psychopathology. *Journal of consulting psychology*, 24(4):349, 1960.
- Diva Dhar, Tarun Jain, and Seema Jayachandran. Reshaping adolescents’ gender attitudes: Evidence from a school-based experiment in india. Technical report, National Bureau of Economic Research, 2018.
- Thomas Dohmen, Armin Falk, Davis Huffman, Uwe Sunde, Jürgen Schupp, and Gert G. Wagner. Individual risk attitudes: Measurement, determinants and behavioural consequences. *Journal of the European Economic Association*, 9(3):522–550, 2011.
- Avraham Ebenstein, Maoyong Fan, Michael Greenstone, Guojun He, Peng Yin, and Maigeng Zhou. Growth, pollution, and life expectancy: China from 1991-2012. *American Economic Review*, 105(5):226–31, 2015.
- John HY Edwards and Christian Langpap. Fuel choice, indoor air pollution and children’s health. *Environment and Development Economics*, 17(4):379–406, 2012.
- Bernard Friedman. Risk aversion and the consumer choice of health insurance option. *The Review of Economics and Statistics*, 56(2):209–214, 1974.
- Alan S Gerber and Donald P Green. *Field experiments: Design, analysis, and interpretation*. WW Norton, 2012.
- Joshua Graff Zivin and Matthew Neidell. Days of haze: Environmental information disclosure and intertemporal avoidance behavior. *Journal of Environmental Economics and Management*, 58(2):119–128, 2009.
- Joshua Graff Zivin and Matthew Neidell. Environment, health, and human capital. *Journal of Economic Literature*, 51(3):689–730, 2013.

- Rema Hanna and Paulina Oliva. The effect of pollution on labor supply: Evidence from a natural experiment in Mexico City. *Journal of Public Economics*, 122:68–79, 2015.
- Eric A Hanushek. Economic growth in developing countries: The role of human capital. *Economics of Education Review*, 37:204–212, 2013.
- Jiaxiu He, Haoming Liu, and Alberto Salvo. Severe air pollution and labor productivity: Evidence from industrial towns in China. *American Economic Journal: Applied Economics*, 11(1):173–201, 2019.
- Vernon Henderson. Urbanization in developing countries. *The World Bank Research Observer*, 17(1):89–112, 2002.
- Marc Jeuland, Subhrendu K Pattanayak, and Randall Bluffstone. The economics of household air pollution. *Annu. Rev. Resour. Econ.*, 7(1):81–108, 2015.
- Daniel Kahneman. *Thinking, fast and slow*. Macmillan, 2011.
- Namrata Kala. Learning, adaptation, and climate uncertainty: Evidence from Indian agriculture. *MIT Center for Energy and Environmental Policy Research Working Paper*, 23, 2017.
- Jens Ludwig, Sendhil Mullainathan, and Jann Spiess. Augmenting pre-analysis plans with machine learning. In *AEA Papers and Proceedings*, volume 109, pages 71–76, 2019.
- Michael J. Mauboussin and Dan Callahan. Sharpening Your Forecasting Skills - Foresight Is a Measurable Skill That You Can Cultivate. Technical report, Credit Suisse, 2015.
- Gordon McGranahan and Frank Murray. *Air pollution and health in rapidly developing countries*. Earthscan, 2012.
- Barbara Mellers, Lyle Ungar, Jonathan Baron, Jaime Ramos, Burcu Gurcay, Katrina Fincher, Sydney E Scott, Don Moore, Pavel Atanasov, Samuel A Swift, et al. Psychological strategies for winning a geopolitical forecasting tournament. *Psychological Science*, 25(5):1106–1115, 2014.
- Ryan T Moore. Multivariate continuous blocking to improve political science experiments. *Political Analysis*, 20(4):460–479, 2012.
- Enrico Moretti and Matthew Neidell. Pollution, health, and avoidance behavior evidence from the ports of Los Angeles. *Journal of Human Resources*, 46(1):154–175, 2011.
- Matthew J Neidell. Air pollution, health, and socio-economic status: the effect of outdoor air quality on childhood asthma. *Journal of Health Economics*, 23(6):1209–1236, 2004.
- Douglass C North. The new institutional economics and third world development. In *The new institutional economics and third world development*, pages 31–40. Routledge, 2003.
- EPD Punjab. Policy on controlling smog 2017, Oct 2017.
- Ramsha Riaz and Khizar Hamid. Existing smog in Lahore, Pakistan: An alarming public health concern. *Cureus*, 2018. doi: 10.7759/cureus.2111.
- Joseph P Romano and Michael Wolf. Stepwise multiple testing as formalized data snooping. *Econometrica*, 73(4):1237–1282, 2005.
- Mark Rosenzweig and Christopher R Udry. Forecasting profitability. Technical report, National Bureau of Economic Research, 2013.
- Mark R Rosenzweig and Christopher Udry. Rainfall forecasts, weather, and wages over the agricultural production cycle. *American Economic Review*, 104(5):278–83, 2014.
- Joseph E Stiglitz. The contributions of the economics of information to twentieth century economics. *The quarterly journal of economics*, 115(4):1441–1478, 2000.
- Philip E Tetlock. *Expert Political Judgment: How Good Is It? How Can We Know? - New Edition*. Princeton University Press, 2017.

Stefan Wager, Wenfei Du, Jonathan Taylor, and Robert J Tibshirani. High-dimensional regression adjustments in randomized experiments. *Proceedings of the National Academy of Sciences*, 113(45):12673–12678, 2016.

Mehreen Zahra-Malik. In lahore, pakistan, smog has become a 'fifth season', Nov 2017. URL <https://www.nytimes.com/2017/11/10/world/asia/lahore-smog-pakistan.html>.

10 APPENDICES

10.1 Materials used in the baseline

10.1.1 Pamphlet

We provide all our participants pamphlets on general awareness about particulate matter and its health effects at the baseline survey. The pamphlet in the local language looks as follows:

فضائی آلودگی اور اس کے اثرات

فضائی آلودگی سے کیا مراد ہے؟

PM2.5 کی ماپ

PM2.5 (µg/m³)	تعداد	تعمیراتی اثرات
0-25	بہتر	بہتر
25-35	معتدل	بہتر
35-45	معتدل	بہتر
45-55	معتدل	بہتر
55-150	معتدل	بہتر
151-250	معتدل	بہتر
250	معتدل	بہتر

فضائی آلودگی سے کیا مراد ہے؟

ان قسم کی آلودگی کو فیکل (Fog) یا (Smog) کہا جاتا ہے۔ اس کی وجہ سے دیکھنا مشکل ہوتا ہے اور سانس لینا بھی مشکل ہوتا ہے۔ اس کی وجہ سے سانس لینے والوں کو کھانسی، سعال، اور دھڑکنے کی شکایت ہوتی ہے۔ اس کی وجہ سے سانس لینے والوں کو کھانسی، سعال، اور دھڑکنے کی شکایت ہوتی ہے۔ اس کی وجہ سے سانس لینے والوں کو کھانسی، سعال، اور دھڑکنے کی شکایت ہوتی ہے۔

10.1.2 Keychains

We conduct practice BDM sessions in our baseline survey to help our respondents in understanding the BDM elicitation. For that, we use the following keychain:



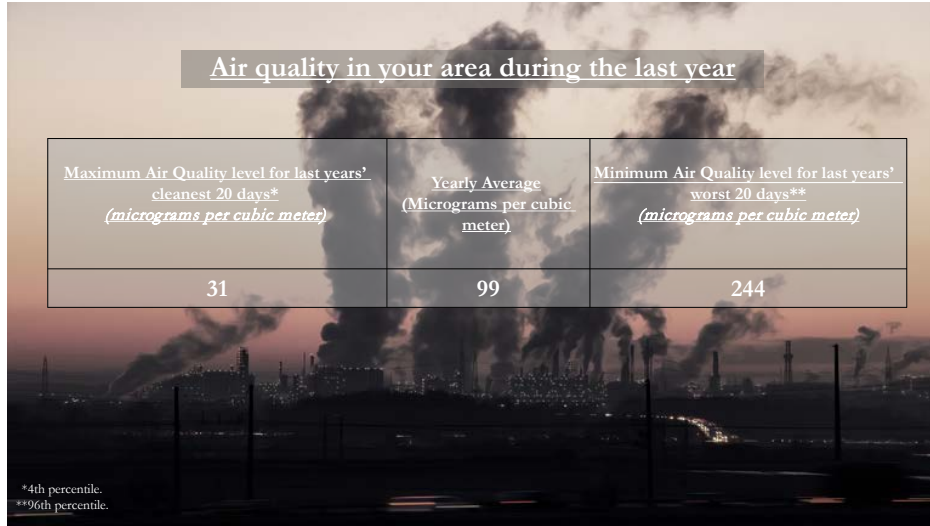
10.1.3 Particulate matter masks

For our willingness to pay BDM elicitation on particulate matter masks we obtain *3M N95 Particulate Respirator Model No. 8210*. An actual illustration of the masks can be seen as follows:



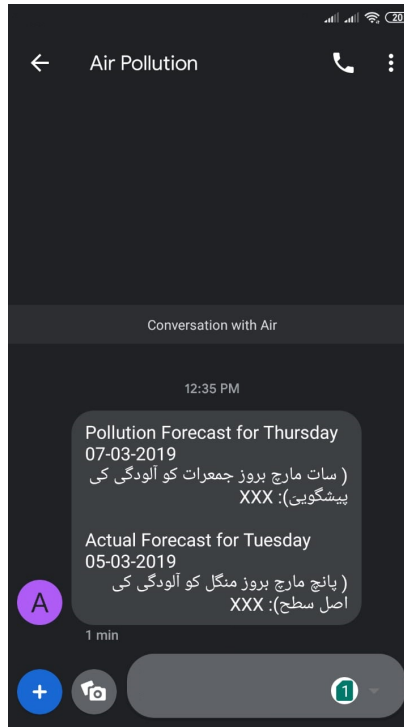
10.1.4 Historical pollution data

We provide all our respondents with summarized information on historical air pollution data to make forecasts. The summarized information looks as follows:



10.1.5 Forecast text message sheet

To introduce our respondents to our service, we show all our respondents a sample SMS message. The sheet for that message shown to respondents is as follows:



10.2 Baseline Survey

5/10/2019

air_pollution_sur_printable.html

Air Pollution Survey

Field	Question	Answer
enum_name <i>(required)</i>	Conducted By	120 Ali Shahab 121 Hamza Mehmood 122 Yasir Ayyaz 123 Malik Nauman 124 Fareeha Naseem 125 Maria Khalid 126 Kaifa Arshad 127 Kabir 128 Tehmina Zia 129 Komal Sami 130 Asiya Sultana 131 Shayan 132 Iqra 777 Others
tries <i>(required)</i>	Number of tries	
try1 <i>(required)</i>	What happened in Try 1?	1 The respondent did not answer because he did not want to receive the SMS service. 2 No one opened the door 3 The house was empty/ there was a lock on the door 4 Did not answer because the respondent didn't have time 6 The respondent did not answer because he did not trust the survey 7 There were no women in the household. 8 There were no men in the household 777 Other
try2 <i>(required)</i>	What happened in Try 2?	1 The respondent did not answer because he did not want to receive the SMS service. 2 No one opened the door 3 The house was empty/ there was a lock on the door 4 Did not answer because the respondent didn't have time 6 The respondent did not answer because he did not trust the survey 7 There were no women in the household. 8 There were no men in the household 777 Other
try3 <i>(required)</i>	What happened in Try 3?	1 The respondent did not answer because he did not want to receive the SMS service. 2 No one opened the door 3 The house was empty/ there was a lock on the door 4 Did not answer because the respondent didn't have time 6 The respondent did not answer because he did not trust the survey 7 There were no women in the household. 8 There were no men in the household 777 Other

file:///C:/Users/HP/Dropbox/Air_Pollution_Project/4_Design/1_surveys/baseline_survey/1_cto_versions/final_version/air_pollution_sur_printable... 1/21

Field	Question	Answer																
try4 (required)	What happened in Try 4?	<table border="1"> <tr><td>1</td><td>The respondent did not answer because he did not want to receive the SMS service.</td></tr> <tr><td>2</td><td>No one opened the door</td></tr> <tr><td>3</td><td>The house was empty/ there was a lock on the door</td></tr> <tr><td>4</td><td>Did not answer because the respondent didn't have time</td></tr> <tr><td>6</td><td>The respondent did not answer because he did not trust the survey</td></tr> <tr><td>7</td><td>There were no women in the household.</td></tr> <tr><td>8</td><td>There were no men in the household</td></tr> <tr><td>777</td><td>Other</td></tr> </table>	1	The respondent did not answer because he did not want to receive the SMS service.	2	No one opened the door	3	The house was empty/ there was a lock on the door	4	Did not answer because the respondent didn't have time	6	The respondent did not answer because he did not trust the survey	7	There were no women in the household.	8	There were no men in the household	777	Other
1	The respondent did not answer because he did not want to receive the SMS service.																	
2	No one opened the door																	
3	The house was empty/ there was a lock on the door																	
4	Did not answer because the respondent didn't have time																	
6	The respondent did not answer because he did not trust the survey																	
7	There were no women in the household.																	
8	There were no men in the household																	
777	Other																	
try5 (required)	What happened in Try 5?	<table border="1"> <tr><td>1</td><td>The respondent did not answer because he did not want to receive the SMS service.</td></tr> <tr><td>2</td><td>No one opened the door</td></tr> <tr><td>3</td><td>The house was empty/ there was a lock on the door</td></tr> <tr><td>4</td><td>Did not answer because the respondent didn't have time</td></tr> <tr><td>6</td><td>The respondent did not answer because he did not trust the survey</td></tr> <tr><td>7</td><td>There were no women in the household.</td></tr> <tr><td>8</td><td>There were no men in the household</td></tr> <tr><td>777</td><td>Other</td></tr> </table>	1	The respondent did not answer because he did not want to receive the SMS service.	2	No one opened the door	3	The house was empty/ there was a lock on the door	4	Did not answer because the respondent didn't have time	6	The respondent did not answer because he did not trust the survey	7	There were no women in the household.	8	There were no men in the household	777	Other
1	The respondent did not answer because he did not want to receive the SMS service.																	
2	No one opened the door																	
3	The house was empty/ there was a lock on the door																	
4	Did not answer because the respondent didn't have time																	
6	The respondent did not answer because he did not trust the survey																	
7	There were no women in the household.																	
8	There were no men in the household																	
777	Other																	
enum_other (required)	Please specify other																	
Enumerators to enter current plus 1 days forecast as provided by SMS.																		
s1_11_q1 (required)	Lowest Tempertaure in centi-celsius																	
s1_11_q2 (required)	Highest Tempertaure in centi-celsius																	
s1_11_q3 (required)	Chances of rain (Answer in %s) کتھے فیصد امکان ہے؟																	
s1_11_q4 (required)	Windspeed in KMH																	
s1_11_q5 (required)	Condition of weather	<table border="1"> <tr><td>1</td><td>Sunny</td></tr> <tr><td>2</td><td>Rain</td></tr> <tr><td>3</td><td>Clouds</td></tr> <tr><td>4</td><td>Chances of Shower</td></tr> </table>	1	Sunny	2	Rain	3	Clouds	4	Chances of Shower								
1	Sunny																	
2	Rain																	
3	Clouds																	
4	Chances of Shower																	
Enumerators to enter t plus 2 days forecast as provided by SMS.																		
s1_12_q1 (required)	Lowest Tempertaure in centi-celsius																	
s1_12_q2 (required)	Highest Tempertaure in centi-celsius																	
s1_12_q3 (required)	Chances of rain (Answer in %s) کتھے فیصد امکان ہے؟																	
s1_12_q4 (required)	Windspeed in KMH																	
s1_12_q5 (required)	Condition of weather	<table border="1"> <tr><td>1</td><td>Sunny</td></tr> <tr><td>2</td><td>Rain</td></tr> <tr><td>3</td><td>Clouds</td></tr> <tr><td>4</td><td>Chances of Shower</td></tr> </table>	1	Sunny	2	Rain	3	Clouds	4	Chances of Shower								
1	Sunny																	
2	Rain																	
3	Clouds																	
4	Chances of Shower																	
Enumerators to enter t plus 3 days forecast as provided by SMS.																		
s1_13_q1 (required)	Lowest Tempertaure in centi-celsius																	
s1_13_q2 (required)	Highest Tempertaure in centi-celsius																	
s1_13_q3 (required)	Chances of rain (Answer in %s) کتھے فیصد امکان ہے؟																	
s1_13_q4 (required)	Windspeed in KMH																	
s1_13_q5 (required)	Condition of weather	<table border="1"> <tr><td>1</td><td>Sunny</td></tr> <tr><td>2</td><td>Rain</td></tr> <tr><td>3</td><td>Clouds</td></tr> <tr><td>4</td><td>Chances of Shower</td></tr> </table>	1	Sunny	2	Rain	3	Clouds	4	Chances of Shower								
1	Sunny																	
2	Rain																	
3	Clouds																	
4	Chances of Shower																	

Field	Question	Answer
charge_id <i>(required)</i>	Charge ID	1 1
		2 2
		3 3
		4 4
		5 5
		6 6
		7 7
point_id <i>(required)</i>	Point ID	1 1
		2 2
		3 3
		4 4
		5 5
		6 6
		7 7
		8 8
		9 9
		10 10
		11 11
		12 12
		13 13
		14 14
		15 15
		16 16
		17 17
		18 18
		19 19
hhid <i>(required)</i>	Household ID	1 1
		2 2
		3 3
		4 4
		5 5
		6 6
		7 7
		8 8
		9 9
		10 10
consent_note	Consent Note	
consent_note1	Consent Note 3227788110	
consent <i>(required)</i>	Can we start our survey activity?	1 Yes 2 No
no_consent <i>(required)</i>	Reason of not conducting survey	1 No one opened the door
		2 Unit was empty
		3 Refused because of time constraint
		4 Refused because of trust issues
		777 Other
no_consent_o <i>(required)</i>	Specify other	
survey		
survey > sec1		
s1_q1 <i>(required)</i>	Neighborhood name گلس، تعمیر یا پائین کے اندر محلے کا نام لکھیں	
s1_q2 <i>(required)</i>	Household address	
s1_q5 <i>(required)</i>	Gender to be interviewed	1 Male
		2 Female
male_18 <i>(required)</i>	Number of male and female members with age bracket	
survey > Details of HH members (1) (Repeated group)		
name_rg_male <i>(required)</i>	Name	
gender_rg_male <i>(required)</i>	Gender	1 Male
		2 Female
age_rg_male <i>(required)</i>	Age	
status_rg_male <i>(required)</i>	Status	1 Head of the HH/Spouse of head of the HH
		2 Others
p_rg_male <i>(required)</i>	Is he/she present?	1 Yes
		2 No
selected_mem_male	1, [selected_name], has been randomly chosen.	

Field	Question	Answer														
s4_q7	Imagine we provide you forecasts of air pollution readings on your mobile device. Forecasts would be generated by LUMS using past measurements from a LUMS-operated monitor in your neighborhood. Each day you would receive a SMS message with two elements. First, the message would contain a forecast of tomorrow's air pollution. Second, the message would compare yesterday's actual average air pollution to our forecast for that day. This will enable you to evaluate the quality of our forecast yourself. Enumerator: Display mockup of text message. This will not contain real numbers, as we don't want to give people a reference point. If you agree, you will receive this service for three months at zero cost.															
s4_q8 (required)	At this point we are offering this service randomly (or on a lottery basis) to some people. If you are randomly selected to receive SMS messages on your phone, Would you agree to receive the air pollution	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused						
1	Yes															
2	No															
888	Don't know															
999	Refused															
s4_q9 (required)	Can you confirm the phone number that you would like the SMS messages to be sent to?															
s4_q9z (required)	Network of cell number provided	<table border="1"> <tr><td>1</td><td>Jazz</td></tr> <tr><td>2</td><td>Warid</td></tr> <tr><td>3</td><td>Telenor</td></tr> <tr><td>4</td><td>Zong</td></tr> <tr><td>5</td><td>Ufone</td></tr> </table>	1	Jazz	2	Warid	3	Telenor	4	Zong	5	Ufone				
1	Jazz															
2	Warid															
3	Telenor															
4	Zong															
5	Ufone															
s4_q10 (required)	We would in the later part of this survey play games with you which might or might not lead to you making money. If you do ending up money, some of it you will receive during the survey and some of it after 5 days of the survey via mobile credit. Please let us know the mobile number you would like to receive the payments at if your answers are correct.															
s4_q10z (required)	Network of cell number provided	<table border="1"> <tr><td>1</td><td>Jazz</td></tr> <tr><td>2</td><td>Warid</td></tr> <tr><td>3</td><td>Telenor</td></tr> <tr><td>4</td><td>Zong</td></tr> <tr><td>5</td><td>Ufone</td></tr> </table>	1	Jazz	2	Warid	3	Telenor	4	Zong	5	Ufone				
1	Jazz															
2	Warid															
3	Telenor															
4	Zong															
5	Ufone															
survey > consent_yes																
note	Brief Script															
survey > consent_yes > sec2																
	Name of respondent <i>Should be same as randomly chosen respondent</i>															
s2_q1 (required)																
s2_q2 (required)	Gender	<table border="1"> <tr><td>1</td><td>Male</td></tr> <tr><td>2</td><td>Female</td></tr> </table>	1	Male	2	Female										
1	Male															
2	Female															
s2_q3 (required)	Age <i>888 = Don't know
999 = Refused</i>															
s2_q4 (required)	Marital Status	<table border="1"> <tr><td>1</td><td>Single</td></tr> <tr><td>2</td><td>Married</td></tr> <tr><td>3</td><td>Divorced</td></tr> <tr><td>4</td><td>Widow</td></tr> <tr><td>5</td><td>Unmarried</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Single	2	Married	3	Divorced	4	Widow	5	Unmarried	999	Refused		
1	Single															
2	Married															
3	Divorced															
4	Widow															
5	Unmarried															
999	Refused															
survey > consent_yes > Information and Trust																
survey > consent_yes > Information and Trust > sec3_a																
s3_q1 (required)	I care about air quality in the places I live and work.	<table border="1"> <tr><td>1</td><td>Strongly Agree</td></tr> <tr><td>2</td><td>Agree</td></tr> <tr><td>3</td><td>Neither agree or disagree</td></tr> <tr><td>4</td><td>Disagree</td></tr> <tr><td>5</td><td>Strongly Disagree</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Strongly Agree	2	Agree	3	Neither agree or disagree	4	Disagree	5	Strongly Disagree	888	Don't know	999	Refused
1	Strongly Agree															
2	Agree															
3	Neither agree or disagree															
4	Disagree															
5	Strongly Disagree															
888	Don't know															
999	Refused															
s3_q2 (required)	I am aware of the air quality in Lahore.	<table border="1"> <tr><td>1</td><td>Strongly Agree</td></tr> <tr><td>2</td><td>Agree</td></tr> <tr><td>3</td><td>Neither agree or disagree</td></tr> <tr><td>4</td><td>Disagree</td></tr> <tr><td>5</td><td>Strongly Disagree</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Strongly Agree	2	Agree	3	Neither agree or disagree	4	Disagree	5	Strongly Disagree	888	Don't know	999	Refused
1	Strongly Agree															
2	Agree															
3	Neither agree or disagree															
4	Disagree															
5	Strongly Disagree															
888	Don't know															
999	Refused															
s3_q3 (required)	I am aware of the air quality in Walton.	<table border="1"> <tr><td>1</td><td>Strongly Agree</td></tr> <tr><td>2</td><td>Agree</td></tr> <tr><td>3</td><td>Neither agree or disagree</td></tr> <tr><td>4</td><td>Disagree</td></tr> <tr><td>5</td><td>Strongly Disagree</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Strongly Agree	2	Agree	3	Neither agree or disagree	4	Disagree	5	Strongly Disagree	888	Don't know	999	Refused
1	Strongly Agree															
2	Agree															
3	Neither agree or disagree															
4	Disagree															
5	Strongly Disagree															
888	Don't know															
999	Refused															

Field	Question	Answer
s3_q4 (required)	I am aware of the air quality in the area where I work.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s3_q5 (required)	I am aware of the air quality where my children go to school.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 6 No child 888 Don't know 999 Refused
s3_q6 (required)	From what sources have you learned about air quality in Lahore? <i>Enumerator: Please do not read out the options.</i>	0 I am not interested 1 The newspaper 2 Punjab government (EPD) 3 Community members 4 Social media 5 AirVisual app 6 My own observation 7 Television 8 Word of Mouth 777 Other, please list 888 Don't know 999 Refused
s3_q6_o (required)	Please specify	
s3_q7 (required)	How many times in a week do you check the weather forecast.	1 Less than once per week 2 Once per week 3 1-2 times per week 4 3-4 times per week 5 5-7 times per week 6 Never 888 Don't know 999 Refused
s3_q8 (required)	Why are weather forecasts important/useful for you?	1 Determine Travel Plans 2 Determine Work Plans 777 Other, please list 888 Don't know 999 Refused
s3_q8_o (required)	Please specify other	
s3_q9 (required)	From which sources do you obtain weather forecasts?	1 Internet 2 Mobile Phone 3 News on Television 4 Newspaper 5 Mobile Application 777 Other, please list 888 Don't know 999 Refused
s3_q9_o (required)	Please specify other	
s3_q10 (required)	How reliable do you think weather forecasts that you are familiar with are?	1 Completely reliable 2 Somewhat Reliable 3 Neither reliable nor unreliable 4 Sometimes unreliable 5 Completely Unreliable 888 Don't know 999 Refused
note_s3	The air pollution that you experience here in Walton can come from many sources. some can be nearby and others can be hundreds of kilometers away	
survey > consent_yes > Information and Trust > Source of Air Pollution in Walton		

Field	Question	Answer																												
s3_q11_a (required)	First Source	<table border="1"> <tr><td>0</td><td>No Air pollution in Walton</td></tr> <tr><td>1</td><td>Construction</td></tr> <tr><td>2</td><td>Industrial sources/manufacturing facilities</td></tr> <tr><td>3</td><td>Burning crops</td></tr> <tr><td>4</td><td>Motor vehicles</td></tr> <tr><td>5</td><td>Household cooking and heating</td></tr> <tr><td>6</td><td>Power plants</td></tr> <tr><td>7</td><td>Smoke of cigarettes</td></tr> <tr><td>8</td><td>Burning of Garbage</td></tr> <tr><td>9</td><td>Pollution from other countries</td></tr> <tr><td>10</td><td>No source</td></tr> <tr><td>777</td><td>Other, please list</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	0	No Air pollution in Walton	1	Construction	2	Industrial sources/manufacturing facilities	3	Burning crops	4	Motor vehicles	5	Household cooking and heating	6	Power plants	7	Smoke of cigarettes	8	Burning of Garbage	9	Pollution from other countries	10	No source	777	Other, please list	888	Don't know	999	Refused
0	No Air pollution in Walton																													
1	Construction																													
2	Industrial sources/manufacturing facilities																													
3	Burning crops																													
4	Motor vehicles																													
5	Household cooking and heating																													
6	Power plants																													
7	Smoke of cigarettes																													
8	Burning of Garbage																													
9	Pollution from other countries																													
10	No source																													
777	Other, please list																													
888	Don't know																													
999	Refused																													
s3_q11_b (required)	Second Source	<table border="1"> <tr><td>0</td><td>No Air pollution in Walton</td></tr> <tr><td>1</td><td>Construction</td></tr> <tr><td>2</td><td>Industrial sources/manufacturing facilities</td></tr> <tr><td>3</td><td>Burning crops</td></tr> <tr><td>4</td><td>Motor vehicles</td></tr> <tr><td>5</td><td>Household cooking and heating</td></tr> <tr><td>6</td><td>Power plants</td></tr> <tr><td>7</td><td>Smoke of cigarettes</td></tr> <tr><td>8</td><td>Burning of Garbage</td></tr> <tr><td>9</td><td>Pollution from other countries</td></tr> <tr><td>10</td><td>No source</td></tr> <tr><td>777</td><td>Other, please list</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	0	No Air pollution in Walton	1	Construction	2	Industrial sources/manufacturing facilities	3	Burning crops	4	Motor vehicles	5	Household cooking and heating	6	Power plants	7	Smoke of cigarettes	8	Burning of Garbage	9	Pollution from other countries	10	No source	777	Other, please list	888	Don't know	999	Refused
0	No Air pollution in Walton																													
1	Construction																													
2	Industrial sources/manufacturing facilities																													
3	Burning crops																													
4	Motor vehicles																													
5	Household cooking and heating																													
6	Power plants																													
7	Smoke of cigarettes																													
8	Burning of Garbage																													
9	Pollution from other countries																													
10	No source																													
777	Other, please list																													
888	Don't know																													
999	Refused																													
s3_q11_c (required)	Third Source	<table border="1"> <tr><td>0</td><td>No Air pollution in Walton</td></tr> <tr><td>1</td><td>Construction</td></tr> <tr><td>2</td><td>Industrial sources/manufacturing facilities</td></tr> <tr><td>3</td><td>Burning crops</td></tr> <tr><td>4</td><td>Motor vehicles</td></tr> <tr><td>5</td><td>Household cooking and heating</td></tr> <tr><td>6</td><td>Power plants</td></tr> <tr><td>7</td><td>Smoke of cigarettes</td></tr> <tr><td>8</td><td>Burning of Garbage</td></tr> <tr><td>9</td><td>Pollution from other countries</td></tr> <tr><td>10</td><td>No source</td></tr> <tr><td>777</td><td>Other, please list</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	0	No Air pollution in Walton	1	Construction	2	Industrial sources/manufacturing facilities	3	Burning crops	4	Motor vehicles	5	Household cooking and heating	6	Power plants	7	Smoke of cigarettes	8	Burning of Garbage	9	Pollution from other countries	10	No source	777	Other, please list	888	Don't know	999	Refused
0	No Air pollution in Walton																													
1	Construction																													
2	Industrial sources/manufacturing facilities																													
3	Burning crops																													
4	Motor vehicles																													
5	Household cooking and heating																													
6	Power plants																													
7	Smoke of cigarettes																													
8	Burning of Garbage																													
9	Pollution from other countries																													
10	No source																													
777	Other, please list																													
888	Don't know																													
999	Refused																													
s3_q11_a_o (required)	Others-First Source																													
s3_q11_b_o (required)	Others-Second Source																													
s3_q11_c_o (required)	Others-Third Source																													
s3_q13 (required)	Please evaluate the following statement: I trust air quality measurements delivered to me by the Punjab government.	<table border="1"> <tr><td>1</td><td>Strongly Agree</td></tr> <tr><td>2</td><td>Agree</td></tr> <tr><td>3</td><td>Neither agree or disagree</td></tr> <tr><td>4</td><td>Disagree</td></tr> <tr><td>5</td><td>Strongly Disagree</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Strongly Agree	2	Agree	3	Neither agree or disagree	4	Disagree	5	Strongly Disagree	888	Don't know	999	Refused														
1	Strongly Agree																													
2	Agree																													
3	Neither agree or disagree																													
4	Disagree																													
5	Strongly Disagree																													
888	Don't know																													
999	Refused																													
survey > consent_yes > Key Chain Game																														

Field	Question	Answer
note_forcast	<p>Let us now play a simple game in which you bid for a key chain. Think about how much you value this key chain and the maximum amount you are willing to pay for it. Please don't think about the market price of the key chain; just consider the value of this jelly to you?</p> <p>I will now give you 20 rupees.</p> <p>In a moment, I will ask you to write down the maximum amount you would be willing to pay for one ABCD jelly. Then I will randomly draw a price between 0 PKR and 20 PKR. If the price I draw is lower than the price you write down, you will pay me the randomly drawn price and receive the mask. If the price I draw is higher than the price you write down, you will pay nothing and you will not receive the ABCD jelly. Notice that if the transaction occurs, the price is the randomly selected one, not the amount of your bid. The amount of your bid matters because it influences the probability that the transaction will occur.</p> <p>Now please write down the maximum you would be willing to pay for one ABCD jelly. It is fine to answer 0 PKR if you do not wish to purchase an ABCD jelly at any price.</p> <p>Please take a minute to think about this.</p>	
s4_q1 (required)	Please note amount that respondent has written or handover tablet to him so that he can write the amount himself/herself	
s4_q2	[rand4] is the randomly chosen amount	
s4_q3	This draw resulted in purchase.	
s4_q4	Please take [rand4] rupees from the respondent.	
s4_q5	This draw did not result in purchase.	
s4_q6	Please take nothing from the respondent.	
s4_q7a (required)	Did random draw result in purchase?	<input type="radio"/> 1 Yes <input type="radio"/> 2 No
s4_q8a (required)	Did the price you choose reflect the maximum you would want to pay? Or was it above or below it?	<input type="radio"/> 1 Maximum you wanted to pay <input type="radio"/> 2 Above <input type="radio"/> 3 Below
s4_q9a	Consider what would happen if you chose a price below your maximum: if your maximum price for the ABCD jelly is 20 PKR but instead you write down 15 PKR then you will not win the ABCD jelly if I draw the numbers 16, 17, 18, 19, or 20 in my random draw. You will now be worse off since you could have won the ABCD jelly by stating your true maximum willingness to pay (20 PKR), in such cases and still gotten the ABCD jelly for less than (or at worse) equal to how much you were willing to pay for it	
s4_q10a	Now consider what would happen if you overstate your maximum willingness to pay: if your true willingness to pay for the ABCD jelly is 15 PKR but instead you write down 20 PKR then you will win the ABCD jelly if I draw the numbers 15, 16, 17, 18, and 19 in my random draw. However, you will now be worse off since you will have to pay an amount greater than your true maximum willingness to pay for the ABCD jelly.	
survey > consent_yes > Quiz		
s41_0	Please answer the following questions in light of the game explained to you above.	
s41_3	Suppose you go to buy apples from the local market. The fruit vendor randomly quotes Rs. 60 a kilogram. Your willingness to pay is Rs. 40 a kilogram. Would you buy the apples?	<input type="radio"/> 1 Yes <input type="radio"/> 2 No
s41_3_c	Your answer was correct.	
s41_3_nc	Your answer was not correct	
s41_1	Suppose you bid Rs. 15 for the jelly but the randomly drawn amount is Rs. 10. Do you buy the jelly?	<input type="radio"/> 1 Yes <input type="radio"/> 2 No
s41_1_c	Your answer was correct.	
s41_1_nc	Your answer was not correct	
s41_2	At what price do you buy the jelly?	<input type="radio"/> 1 Rs.10 <input type="radio"/> 2 Rs.15
s41_2_c	Your answer was correct.	
s41_2_nc	Your answer was not correct	
survey > consent_yes > Mask Game		
s5_note	<p>There are many different pollutants in the air, some are gasses and others are small microscopic particles. While there is no practical way of protecting ourselves from the former (other than staying in doors), masks are a good way of protecting ourselves from the latter. This type of face mask is called a N95 respirator. The designation refers to the fact that in laboratory testing such masks have been shown to filter out 95% of harmful microscopic particles in the air.</p> <p>Please note that this is not the same as a "surgical mask" used by doctors in hospitals. Surgical masks are not capable of filtering the air we breathe from pollutants. Furthermore, like all "filter" systems, this mask has a limited lifetime, and has been tested to work for approximately one month after which they need to be thrown out. Replacement masks may be purchased from the local market.</p> <p>Enumerator: put mask on to demonstrate. It is important for the mask to fit snugly to your face, or it will not work properly.</p> <p>ماسک ہون کر دکھائیں۔ یہ ضروری ہے کہ ماسک آپ کے منہ پر سہول طرح پہنا گیا ہو ورنہ یہ سہول طرح استعمال نہیں ہو سکتا گا</p>	

Field	Question	Answer												
s5_exp	<p>We will now give you an opportunity to bid for a mask. Think about how much you value this mask and the maximum amount you are willing to pay for it. Please don't think about the market price of the mask; just consider the value of this mask to you?</p> <p>I will now give you 100 PKR.</p> <p>In a moment, I will ask you to write down the maximum amount you would be willing to pay for one mask. Then I will randomly draw a price between 0 PKR and 100 PKR. If the price I draw is lower than the price you write down, you will pay me the randomly drawn price and receive the mask. If the price I draw is higher than the price you write down, you will pay nothing and you will not receive the mask. Notice that if the transaction occurs, the price is the randomly selected one, not the amount of your bid. The amount of your bid matters because it influences the probability that the transaction will occur.</p> <p>Now please write down the maximum you would be willing to pay for one mask. It is fine to answer 0 PKR if you do not wish to purchase a mask at any price.</p> <p>Please take a minute to think about this.</p>													
s5_q1 (required)	Please note amount that respondent has written or handover tablet to him so that he can write the amount himself/herself													
s5_q2	[mask_ra] is the randomly chosen amount													
s5_q22	This draw resulted in purchase.													
s5_q222	Please take [mask_ra] rupees from the respondent.													
s5_q23	This draw did not result in purchase.													
s5_q231	Please take nothing from the respondent.													
s5_q3 (required)	did random draw result in purchase?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> </table>	1	Yes	2	No								
1	Yes													
2	No													
s5_q4 (required)	If bid is positive, why are these masks valuable?													
s5_q5 (required)	If bid is zero, why are these masks not valuable?													
s5_q6 (required)	How often have you seen people wearing such masks?	<table border="1"> <tr><td>1</td><td>Never</td></tr> <tr><td>2</td><td>Not very often</td></tr> <tr><td>3</td><td>Often, but not every day</td></tr> <tr><td>4</td><td>Every day</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Never	2	Not very often	3	Often, but not every day	4	Every day	888	Don't know	999	Refused
1	Never													
2	Not very often													
3	Often, but not every day													
4	Every day													
888	Don't know													
999	Refused													
s5_q7 (required)	Do you believe these masks work?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q8 (required)	Do you think these masks are ugly?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q9 (required)	Do you think these masks are comfortable? <i>Make the respondent wear the mask</i>	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q10 (required)	Are there other characteristics (incl. non-monetary) of these masks that are important for your decision about whether to buy and wear them?													
s5_q11 (required)	Do you know of a convenient place to purchase masks?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q12 (required)	Please explain													
survey > consent_yes > Time Travel Forecast														
s6_note	<p>Enumerator: Now we are going to think about forecasting. Let us begin with a practice forecast on a topic from everyday life; we will return to air pollution in a moment.</p> <p>Explain to the subject that this map depicts two locations (refer to laminated map provided to enumerator): Koray Stop in Walton and Daewoo Station in Thokar.</p> <p>We would like you to forecast the minimum time for a trip on a motorbike from Koray Stop in Walton to the Daewoo Station in Thokar at 7 P.M. tomorrow.</p> <p>Please take a minute to think about this. If your guess is within +/- 2.5 minutes of the Google Maps's minimum suggested time at 7pm tomorrow, you will receive 250PKR; if within +/- 5minutes then 100 PKR.</p> <p>You will receive this payment via mobile credit in 5 days from now.</p> <p>After 3 months we will return for another survey. At that time we will ask you to make another set of forecasts.</p> <p><i>Show map to the respondent</i></p>													
s6_q1 (required)	Please give us your forecast in minutes required to travel between Koray Stop and at the Daewoo stop Thokar at 7 p.m. tomorrow.													
s6_q2 (required)	How confident are you that your forecast will turn out to be within +/-2.5 mins of actual time at t+1? <i>Response should be form 0-100%.</i>													
s6_q3 (required)	Before you go to bed at night, can you form a reasonable guess at what tomorrow's air quality will be like?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> </table>	1	Yes	2	No	888	Don't know						
1	Yes													
2	No													
888	Don't know													

Field	Question	Answer										
s6_q3a (required)	If yes, why might you make this guess? <i>Source of forecast</i>											
s6_q4 (required)	If no, why do you not want to make the guess?											
s6_q5 (required)	How would you describe yesterday's air pollution?	<table border="1"> <tr><td>1</td><td>below average</td></tr> <tr><td>2</td><td>average</td></tr> <tr><td>3</td><td>above average</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	below average	2	average	3	above average	888	Don't know	999	Refused
1	below average											
2	average											
3	above average											
888	Don't know											
999	Refused											
s6_q6 (required)	How do you think air quality will be tomorrow?	<table border="1"> <tr><td>1</td><td>better than today</td></tr> <tr><td>2</td><td>about the same as today</td></tr> <tr><td>3</td><td>worse than today</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	better than today	2	about the same as today	3	worse than today	888	Don't know	999	Refused
1	better than today											
2	about the same as today											
3	worse than today											
888	Don't know											
999	Refused											
s6_q7 (required)	How do you think air quality will be 3 days from today?	<table border="1"> <tr><td>1</td><td>better than today</td></tr> <tr><td>2</td><td>about the same as today</td></tr> <tr><td>3</td><td>worse than today</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	better than today	2	about the same as today	3	worse than today	888	Don't know	999	Refused
1	better than today											
2	about the same as today											
3	worse than today											
888	Don't know											
999	Refused											
survey > consent_yes > Time Travel Forecast > Air Pollution Forecast												
forecast_note0	<p>Enumerator: Please have the respondent take a look at the (i) PAMPHLET (ii) FORECAST DATA.</p> <p>Ask the subject to forecast pollution levels for TOMORROW (t+1) and THREE DAYS FROM NOW (t+3). If they want they can forecast pollution levels for the day after tomorrow (t+2) as well.</p> <p>Explain to the subject that while forecasting pollution levels they should answer in particles per meter cube which is the same unit as the historical forecast.</p> <p>If either of your guess about (t+1) or (t+3) is within 5% of the actual pollution level you will receive 250PKR; if within 10% then 150 PKR; if within 20% then 50 PKR. This payment will be sent to you via mobile credit 5 days from now.</p> <p>Before you make these air pollution forecasts, you will have an option of viewing the weather forecast.</p> <p>Enumerator: If the subject declines, do not try to persuade the subject to view the weather forecast.</p> <p>Please take a minute to think about this.</p> <p>After 3 months we will return for another survey. At that time we will ask you to make another set of forecasts.</p> <p>اگر جواب دہندہ موسمیات پیشگوئی دیکھنے سے منع کر دے تو دیاؤنا لائیں</p>											
forecast_note	<p>If either of your guess about (t+1) or (t+3) is within 5% of the actual pollution level you will receive 250PKR; if within 10% then 150 PKR; if within 20% then 50 PKR. This payment will be sent to you via mobile credit.</p> <p>After 3 months we will return for another survey. At that time we will ask you to make another set of forecasts.</p>											
s6f_q1 (required)	Would you like to take a look at the weather forecast for t+1?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> </table>	1	Yes	2	No						
1	Yes											
2	No											
s6f_q2	<p>Lowest temperature: [s1_t1_q1] centi-celsius</p> <p>Highest temperature: [s1_t1_q2] centi-celsius</p> <p>Chances of rain: [s1_t1_q3] percentage</p> <p>Windspeed: [s1_t1_q4] KM/h</p>											
survey > consent_yes > Time Travel Forecast > Air Pollution Forecast > s6f_g1												
s6f_q3 (required)	<p>Please fill out pollution forecast for TOMORROW (t+1) on average.</p> <p><i>In particles per meter cube. Enumerator: please use pamphlet to explain.</i></p>											
s6f_q4 (required)	<p>How confident are you that your forecast will turn out to be within 10% of actual pollution at t+1?</p> <p><i>Please answer in percentages from 0 to 100</i></p>											
s6f_q5 (required)	Would you like to take a look at the weather forecast for t+3?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> </table>	1	Yes	2	No						
1	Yes											
2	No											
s6f_q6	<p>Lowest temperature: [s1_t3_q1] centi-celsius</p> <p>Highest temperature: [s1_t3_q2] centi-celsius</p> <p>Chances of rain: [s1_t3_q3] percentage</p> <p>Windspeed: [s1_t3_q4] KM/h</p>											
survey > consent_yes > Time Travel Forecast > Air Pollution Forecast > s6f_g2												
s6f_q7 (required)	<p>Please fill out pollution forecast for (t+3) on average.</p> <p><i>In particles per meter cube. Enumerator: please use pamphlet to explain.</i></p>											
s6f_q8 (required)	<p>How confident are you that your forecast will turn out to be within 10% of actual pollution at t+3?</p> <p><i>Please answer in percentages from 0 to 100</i></p>											
s6f_q10 (required)	Did the respondent want to voluntarily give forecast for t+2?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> </table>	1	Yes	2	No						
1	Yes											
2	No											
s6f_q101 (required)	Would you like to take a look at the weather forecast for t+2?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> </table>	1	Yes	2	No						
1	Yes											
2	No											
s6f_q102	Show text for weather forecast for t+2.											
survey > consent_yes > Time Travel Forecast > Air Pollution Forecast > s6f_g3												
s6f_q11 (required)	<p>Please fill out pollution forecast for (t+2) on average.</p> <p><i>In particles per meter cube. Enumerator: please use pamphlet to explain.</i></p>											
s6f_q12 (required)	<p>How confident are you that your forecast will turn out to be within 10% of actual pollution at t+2?</p> <p><i>Please answer in percentages from 0 to 100</i></p>											
survey > consent_yes > sec7												
s7_note	I will be asking you questions relating to air quality and pollution.											

5/10/2019

air_pollution_sur_printable.html

Field	Question	Answer
s7_q1 (required)	Does anyone in your household have a respiratory condition, that is, have trouble breathing?	1 Yes 2 No
s7_q1a (required)	Relation	1 self 2 sister 3 mother 4 grandmother 5 sister-in-law (younger brother's wife) 6 sister-in-law (elder brother's wife) 7 brother's wife 8 cousin 9 mother-in-law 10 daughter-in-law 11 daughter 12 she does not live in this house 13 brother 14 father 15 grandfather 16 brother-in-law (husband's younger brother) 17 brother-in-law (husband's elder brother) 18 father-in-law 19 sister's husband 20 son-in-law 21 son 22 cousin 23 he does not live in this house 24 Hum-Zulf 777 Other 888 Don't know 999 Refused
s7_q1a_0 (required)	Please specify	
s7_note1	Note Agree/Disagree	
s7_q2 (required)	In the past week, I have been concerned about air quality in general?	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q3 (required)	In the past week, I have been satisfied with indoor air quality at home?	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q4 (required)	In the past week, I have been satisfied with outdoor air quality at home?	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q8 (required)	In the past week, I have been satisfied with indoor air quality at work/school?	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused

Field	Question	Answer
s7_q9 (required)	In the past week, I have been satisfied with outdoor air quality at work/school	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q10 (required)	Of the past seven days in Lahore, including today, how many had satisfactory outdoor air quality?	1 One 2 two 3 three 4 four 5 five 6 six 7 seven 888 Don't know 999 Refused
s7_q12 (required)	Air quality significantly affects my quality of life at home	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q13 (required)	Air quality significantly affects my performance at work or school.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q14 (required)	In the past week, poor air quality has affected my ability to sleep.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q14a (required)	In the past week, noise from outside has affected my ability to sleep.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q15 (required)	In the past week, I reduced the number of hours I spent on non-work outdoor activities in response to poor air quality	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q16 (required)	In the past week, I reduced the number of hours I worked significantly in response to poor air quality.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q18 (required)	In the past week, I have rescheduled activities across days in response to poor air quality?	1 Yes 2 No 888 Don't know 999 Refused
s7_q19 (required)	If yes, please describe	
s7_q21	Enum Note	
survey > consent_yes > sec7 > Best Hours		

5/10/2019

air_pollution_sur_printable.html

s7_q23 (required)	Best Hour: 1	
Field s7_q24 (required)	Question: 2	Answer

survey > consent_yes > sec7 > Worst Hours																										
s7_q26 (required)	Worst Hour: 1																									
s7_q27 (required)	Worst Hour: 2																									
survey > consent_yes > sec7 > Note for the time use battery																										
time_h1 (required)	8 am- 9 am	<table border="1"> <tr><td>1</td><td>Sleep Inside</td></tr> <tr><td>2</td><td>Sleep Outside</td></tr> <tr><td>3</td><td>Paid indoor work</td></tr> <tr><td>4</td><td>Paid outdoor work</td></tr> <tr><td>5</td><td>Home indoor work</td></tr> <tr><td>6</td><td>Home outdoor work</td></tr> <tr><td>7</td><td>Indoor Leisure</td></tr> <tr><td>8</td><td>Outdoor Leisure</td></tr> <tr><td>9</td><td>Travel</td></tr> <tr><td>10</td><td>Other Indoor</td></tr> <tr><td>11</td><td>Other Outdoor</td></tr> <tr><td>999</td><td>Refuse to answer</td></tr> </table>	1	Sleep Inside	2	Sleep Outside	3	Paid indoor work	4	Paid outdoor work	5	Home indoor work	6	Home outdoor work	7	Indoor Leisure	8	Outdoor Leisure	9	Travel	10	Other Indoor	11	Other Outdoor	999	Refuse to answer
1	Sleep Inside																									
2	Sleep Outside																									
3	Paid indoor work																									
4	Paid outdoor work																									
5	Home indoor work																									
6	Home outdoor work																									
7	Indoor Leisure																									
8	Outdoor Leisure																									
9	Travel																									
10	Other Indoor																									
11	Other Outdoor																									
999	Refuse to answer																									
time_h2 (required)	9 am- 10 am	<table border="1"> <tr><td>1</td><td>Sleep Inside</td></tr> <tr><td>2</td><td>Sleep Outside</td></tr> <tr><td>3</td><td>Paid indoor work</td></tr> <tr><td>4</td><td>Paid outdoor work</td></tr> <tr><td>5</td><td>Home indoor work</td></tr> <tr><td>6</td><td>Home outdoor work</td></tr> <tr><td>7</td><td>Indoor Leisure</td></tr> <tr><td>8</td><td>Outdoor Leisure</td></tr> <tr><td>9</td><td>Travel</td></tr> <tr><td>10</td><td>Other Indoor</td></tr> <tr><td>11</td><td>Other Outdoor</td></tr> <tr><td>999</td><td>Refuse to answer</td></tr> </table>	1	Sleep Inside	2	Sleep Outside	3	Paid indoor work	4	Paid outdoor work	5	Home indoor work	6	Home outdoor work	7	Indoor Leisure	8	Outdoor Leisure	9	Travel	10	Other Indoor	11	Other Outdoor	999	Refuse to answer
1	Sleep Inside																									
2	Sleep Outside																									
3	Paid indoor work																									
4	Paid outdoor work																									
5	Home indoor work																									
6	Home outdoor work																									
7	Indoor Leisure																									
8	Outdoor Leisure																									
9	Travel																									
10	Other Indoor																									
11	Other Outdoor																									
999	Refuse to answer																									
time_h3 (required)	10 am- 11 am	<table border="1"> <tr><td>1</td><td>Sleep Inside</td></tr> <tr><td>2</td><td>Sleep Outside</td></tr> <tr><td>3</td><td>Paid indoor work</td></tr> <tr><td>4</td><td>Paid outdoor work</td></tr> <tr><td>5</td><td>Home indoor work</td></tr> <tr><td>6</td><td>Home outdoor work</td></tr> <tr><td>7</td><td>Indoor Leisure</td></tr> <tr><td>8</td><td>Outdoor Leisure</td></tr> <tr><td>9</td><td>Travel</td></tr> <tr><td>10</td><td>Other Indoor</td></tr> <tr><td>11</td><td>Other Outdoor</td></tr> <tr><td>999</td><td>Refuse to answer</td></tr> </table>	1	Sleep Inside	2	Sleep Outside	3	Paid indoor work	4	Paid outdoor work	5	Home indoor work	6	Home outdoor work	7	Indoor Leisure	8	Outdoor Leisure	9	Travel	10	Other Indoor	11	Other Outdoor	999	Refuse to answer
1	Sleep Inside																									
2	Sleep Outside																									
3	Paid indoor work																									
4	Paid outdoor work																									
5	Home indoor work																									
6	Home outdoor work																									
7	Indoor Leisure																									
8	Outdoor Leisure																									
9	Travel																									
10	Other Indoor																									
11	Other Outdoor																									
999	Refuse to answer																									
time_h4 (required)	11 am- 12 pm	<table border="1"> <tr><td>1</td><td>Sleep Inside</td></tr> <tr><td>2</td><td>Sleep Outside</td></tr> <tr><td>3</td><td>Paid indoor work</td></tr> <tr><td>4</td><td>Paid outdoor work</td></tr> <tr><td>5</td><td>Home indoor work</td></tr> <tr><td>6</td><td>Home outdoor work</td></tr> <tr><td>7</td><td>Indoor Leisure</td></tr> <tr><td>8</td><td>Outdoor Leisure</td></tr> <tr><td>9</td><td>Travel</td></tr> <tr><td>10</td><td>Other Indoor</td></tr> <tr><td>11</td><td>Other Outdoor</td></tr> <tr><td>999</td><td>Refuse to answer</td></tr> </table>	1	Sleep Inside	2	Sleep Outside	3	Paid indoor work	4	Paid outdoor work	5	Home indoor work	6	Home outdoor work	7	Indoor Leisure	8	Outdoor Leisure	9	Travel	10	Other Indoor	11	Other Outdoor	999	Refuse to answer
1	Sleep Inside																									
2	Sleep Outside																									
3	Paid indoor work																									
4	Paid outdoor work																									
5	Home indoor work																									
6	Home outdoor work																									
7	Indoor Leisure																									
8	Outdoor Leisure																									
9	Travel																									
10	Other Indoor																									
11	Other Outdoor																									
999	Refuse to answer																									
time_h5 (required)	12 pm- 1 pm	<table border="1"> <tr><td>1</td><td>Sleep Inside</td></tr> <tr><td>2</td><td>Sleep Outside</td></tr> <tr><td>3</td><td>Paid indoor work</td></tr> <tr><td>4</td><td>Paid outdoor work</td></tr> <tr><td>5</td><td>Home indoor work</td></tr> <tr><td>6</td><td>Home outdoor work</td></tr> <tr><td>7</td><td>Indoor Leisure</td></tr> <tr><td>8</td><td>Outdoor Leisure</td></tr> <tr><td>9</td><td>Travel</td></tr> <tr><td>10</td><td>Other Indoor</td></tr> <tr><td>11</td><td>Other Outdoor</td></tr> <tr><td>999</td><td>Refuse to answer</td></tr> </table>	1	Sleep Inside	2	Sleep Outside	3	Paid indoor work	4	Paid outdoor work	5	Home indoor work	6	Home outdoor work	7	Indoor Leisure	8	Outdoor Leisure	9	Travel	10	Other Indoor	11	Other Outdoor	999	Refuse to answer
1	Sleep Inside																									
2	Sleep Outside																									
3	Paid indoor work																									
4	Paid outdoor work																									
5	Home indoor work																									
6	Home outdoor work																									
7	Indoor Leisure																									
8	Outdoor Leisure																									
9	Travel																									
10	Other Indoor																									
11	Other Outdoor																									
999	Refuse to answer																									

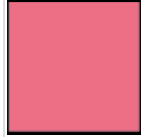
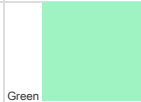

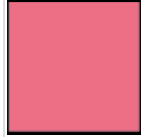
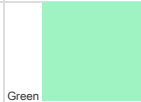

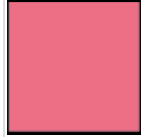
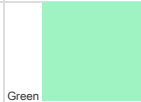

Field	Question	Answer
time_h6 <i>(required)</i>	1 pm- 2 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h7 <i>(required)</i>	2 pm- 3 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h8 <i>(required)</i>	3 pm- 4 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h9 <i>(required)</i>	4 pm- 5 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h10 <i>(required)</i>	5 pm- 6 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer

Field	Question	Answer
time_h11 <i>(required)</i>	6 pm- 7 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h12 <i>(required)</i>	7 pm- 8 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h13 <i>(required)</i>	8 pm- 9 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h14 <i>(required)</i>	9 pm- 10 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h15 <i>(required)</i>	10 pm- 11 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer

Field	Question	Answer
time_h16 <i>(required)</i>	11 pm- 12 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h17 <i>(required)</i>	12 am- 1 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h18 <i>(required)</i>	1 am- 2 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h19 <i>(required)</i>	2 am- 3 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h20 <i>(required)</i>	3 am- 4 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer

Field	Question	Answer
time_h21 <i>(required)</i>	4 am- 5 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h22 <i>(required)</i>	5 am- 6 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h23 <i>(required)</i>	6 am- 7 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h24 <i>(required)</i>	7 am- 8 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
s7_q31 <i>(required)</i>	In the past week, have you restricted your children from going outside in response to poor air quality?	1 Yes 2 No 3 No Child 888 Don't know 999 Refused
s7_q31a	In the past week, have you restricted your children from going outside in response to any other reasons?	1 Yes 2 No 3 No Child 888 Don't know 999 Refused
s7_q34 <i>(required)</i>	Have you changed anything else about your activities or purchases in response to poor air quality?	1 Yes 2 No
s7_q34a	If yes, what have you changed?	

Field	Question	Answer
h_q1 <i>(required)</i>	How variable has your level of happiness been over the past month?	1 Almost the same everyday 2 Small changes from day to day 3 Moderate changes from day to day 4 Large changes from day to day 5 Very Large changes from day to day 6 Don't know 7 Did not answer
survey > consent_yes > Risk Aversion		
s8_q1 <i>(required)</i>	How do you see yourself: Are you in general a person who takes health risk or do you try to evade health risks?	1 completely unwilling to take health risk 2 somewhat unwilling to take health risk 3 neither willing nor unwilling to take health risk 4 somewhat willing to take health risk 5 fully willing to take health risk 888 Don't know 999 Refused
survey > consent_yes > Risk Aversion > Please imagine the following situation: You can choose between a sure payment of a particular amount of money, or a lottery, where you would have an equal chance of getting Rs. 100 or getting nothing. We will present to you five different situations		
s8_2	First option is "50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing" vs second option is "100% chance of receiving nothing". Therefore, we have selected first option for you.	1 50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing 2 A hundred percent chance of getting Rs. 0 right now?
s8_55 <i>(required)</i>	Selection 2	1 50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing 2 A hundred percent chance of getting Rs. 30 right now?
s8_3 <i>(required)</i>	Selection 3	1 50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing 2 A hundred percent chance of getting Rs. 60 right now?
s8_4 <i>(required)</i>	Selection 4	1 50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing 2 A hundred percent chance of getting Rs. 90 right now?
s8_5 <i>(required)</i>	Selection 5	1 50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing 2 A hundred percent chance of getting Rs. 120 right now?
s8_6	First option is "50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing" vs second option is "100% chance of receiving 150". Therefore, we have selected second option for you.	

Field	Question	Answer																		
s8_q7 <i>(required)</i>	<p>Now you will get payment according to the selection you made in earlier questions. I am going to show you 5 different colors, one color represent 1 selection and we are not sure which color is associated with which particular selection. It's going to be completely random. Depending on the color you select, that selection will be shown which you made earlier and on that particular selection you will get payment.</p> <p>Please select a color?</p>	<table border="1"> <tr> <td>1</td> <td>Pink Color</td> <td></td> </tr> <tr> <td>2</td> <td>Green</td> <td></td> </tr> <tr> <td>3</td> <td>Purple Color</td> <td></td> </tr> <tr> <td>4</td> <td>Blue Color</td> <td></td> </tr> <tr> <td>5</td> <td>Yellow Color</td> <td></td> </tr> <tr> <td>6</td> <td>Black Color</td> <td></td> </tr> </table>	1	Pink Color		2	Green		3	Purple Color		4	Blue Color		5	Yellow Color		6	Black Color	
1	Pink Color																			
2	Green																			
3	Purple Color																			
4	Blue Color																			
5	Yellow Color																			
6	Black Color																			
g1_deci1	[forum1]																			
g1_deci2	[forum2]																			
g1_deci3	150																			
g1_deci4	[forum4]																			
g1_deci5	[forum5]																			
g1_deci6	[forum6]																			
g2_d1_1_a	You have won 150 Rupees																			
g2_d1_1_b	You have won 0 Rupees																			
g2_d1_1_c	You have won 120 Rupees																			
g2_d1_6_b	You have won 0 Rupees																			
g2_d1_6_c	You have won 30 Rupees																			
g2_d1_6_a	You have won 150 Rupees																			
g2_d1_2_a	You have won 150 Rupees																			
g2_d1_2_b	You have won 0 Rupees																			
g2_d1_2_c	You have won 60 Rupees																			
g2_d2_3_c	You have won 150 Rupees																			
g2_d2_4_a	You have won 150 Rupees																			
g2_d2_4_b	You have won 0 Rupees																			
g2_d2_4_c	You have won 90 Rupees																			
g2_d2_5_a	You have won 150 Rupees																			
g2_d2_5_b	You have won 0 Rupees																			
enum	ENUM Only: Please note the amount you have given to respondent in this game	<table border="1"> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>30</td> <td>30</td> </tr> <tr> <td>60</td> <td>60</td> </tr> <tr> <td>90</td> <td>90</td> </tr> <tr> <td>120</td> <td>120</td> </tr> </table>	0	0	30	30	60	60	90	90	120	120								
0	0																			
30	30																			
60	60																			
90	90																			
120	120																			

Field	Question	Answer	150
h_q2 (required)	How variable has your level of income been over the past month?	1 Almost the same everyday 2 Small changes from day to day 3 Moderate changes from day to day 4 Large changes from day to day 5 Very Large changes from day to day 6 Don't know 7 Did not answer	
survey > consent_yes > Social Networks			
s9_q1 (required)	Are you part of any Facebook or whatsapp groups or others in which members share information about Walton.	1 Yes 2 No 888 Don't know 999 Refused	
s9_q2 (required)	If yes, how many?		
survey > consent_yes > Social Networks > Please list the groups and its platform, please be specific in the name of the groups. (1)			
s9_q2_1 (required)	Platform 1	1 WhatsApp 2 Facebook 3 Emo 4 Instagram 5 Twitter	
s9_q2_2 (required)	Group Name 1		
s9_q3 (required)	Are you part of part of any community groups in which members share information about Walton.	1 Yes 2 No 888 Don't know 999 Refused	
s9_q4 (required)	If yes,how many?		
survey > consent_yes > Social Networks > Please list the groups and its platform, please be specific in the name of the groups. (1)			
s9_q3_1 (required)	Platform 1		
s9_q3_2 (required)	Group Name 1		
survey > consent_yes > demo			
dem_q1 (required)	Respondent's household status	1 head of household 2 spouse of household head 3 brother of household head 4 sister of household head 5 son of household head 6 daughter of household head 7 son in law 8 daughter in law 777 Other 888 Don't know 999 Refused	
dem_q1_o (required)	Please specify other		
dem_q2 (required)	Total members of this household		
dem_q3 (required)	Are there any elderly individuals living with you whose care you are responsible for?	1 Yes 2 No 888 Don't know 999 Refused	
dem_q4 (required)	If so, how many?		
dem_q5 (required)	Are there any young children (under 15) living with you whose care you are responsible for?	1 Yes 2 No 888 Don't know 999 Refused	
dem_q6 (required)	If so, how many?		

Field	Question	Answer
dem_q7 (required)	Education of Respondent	0 Less than first grade 1 First grade 2 Second grade 3 Third grade 4 Fourth grade 5 Fifth grade 6 Sixth grade 7 Seventh grade 8 Eighth grade 9 Ninth grade 10 Matric 11 Intermediate 12 Graduate/ MBBS/LLB 13 MA/ MPhil/ MS or above 14 Vocational Diploma 15 Did not attain a formal education but knows how to read and write 16 Went to Madrassa 17 Never went to school 888 Don't know 999 Refused
dem_q8 (required)	Number of HH members that are employed.	
dem_q9 (required)	Is the house you live in owned by you personally, someone else in your household/family or rented?	1 Owned 2 Rented 888 Don't know 999 Refused
dem_q11 (required)	Do you expect to still be living in this house for the remainder of the year?	1 Yes 2 No 888 Don't know 999 Refused
dem_q12 (required)	How long have you lived in this neighborhood? <i>Write in years. As in 2013 should be written as 5.</i>	
survey > consent_yes > demo >	Does your household own any of the following items, that are fully functioning / working?	
dem_q13 (required)	Electricity	1 Yes 2 No 888 Don't know 999 Refused
dem_q14 (required)	Sewing Machine	1 Yes 2 No 888 Don't know 999 Refused
dem_q15 (required)	Camera	1 Yes 2 No 888 Don't know 999 Refused
dem_q16 (required)	Radio/tape recorder	1 Yes 2 No 888 Don't know 999 Refused
dem_q17 (required)	Refrigerator	1 Yes 2 No 888 Don't know 999 Refused
dem_q18 (required)	Land line telephone	1 Yes 2 No 888 Don't know 999 Refused
dem_q19 (required)	Washing machine	1 Yes 2 No 888 Don't know 999 Refused
dem_q20 (required)	Jeep/car	1 Yes 2 No 888 Don't know 999 Refused

file:///C:/Users/HP/Dropbox/Air_Pollution_Project/4_Design/1_surveys/baseline_survey/1_cto_versions/final_version/air_pollution_sur_printable... 20/21

Field	Question	Answer																														
dem_q21 <i>(required)</i>	Computer	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused																						
1	Yes																															
2	No																															
888	Don't know																															
999	Refused																															
survey > consent_yes > demo > Does your household own any of the following items, that are fully functioning / working?																																
dem_q22 <i>(required)</i>	UPS																															
dem_q23 <i>(required)</i>	Generator																															
dem_q24 <i>(required)</i>	Motorcycle																															
dem_q25 <i>(required)</i>	Mobile Phones																															
dem_q26 <i>(required)</i>	Televisions																															
dem_q27 <i>(required)</i>	Air Conditioners																															
dem_q28 <i>(required)</i>	Bicycle																															
dem_q29 <i>(required)</i>	Rooms																															
dem_q30 <i>(required)</i>	Fans																															
dem_q31 <i>(required)</i>	What is the main source of income for your household?	<table border="1"> <tr><td>1</td><td>Pension - Government</td></tr> <tr><td>2</td><td>Pension - Private</td></tr> <tr><td>3</td><td>Current government job</td></tr> <tr><td>4</td><td>Private job with a salary</td></tr> <tr><td>5</td><td>Private job with self-employment</td></tr> <tr><td>6</td><td>Remittance from abroad</td></tr> <tr><td>7</td><td>Earnings from industry</td></tr> <tr><td>8</td><td>Earnings from trade</td></tr> <tr><td>9</td><td>Daily labour</td></tr> <tr><td>10</td><td>Earnings from agricultural land</td></tr> <tr><td>11</td><td>Rent from agricultural land</td></tr> <tr><td>12</td><td>Rent from property in city</td></tr> <tr><td>777</td><td>Other</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Pension - Government	2	Pension - Private	3	Current government job	4	Private job with a salary	5	Private job with self-employment	6	Remittance from abroad	7	Earnings from industry	8	Earnings from trade	9	Daily labour	10	Earnings from agricultural land	11	Rent from agricultural land	12	Rent from property in city	777	Other	888	Don't know	999	Refused
1	Pension - Government																															
2	Pension - Private																															
3	Current government job																															
4	Private job with a salary																															
5	Private job with self-employment																															
6	Remittance from abroad																															
7	Earnings from industry																															
8	Earnings from trade																															
9	Daily labour																															
10	Earnings from agricultural land																															
11	Rent from agricultural land																															
12	Rent from property in city																															
777	Other																															
888	Don't know																															
999	Refused																															
dem_q31_o <i>(required)</i>	Please specify other																															
pamphlet_accept	Did the respondent accept the pamphlets?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> </table>	1	Yes	2	No																										
1	Yes																															
2	No																															
note_a1	Total amount given [amount3]																															
note_a2	Total amount given [amount4]																															
note_a3	Total amount given [amount5]																															
note_a4	Total amount given [amount6]																															
image_hh	Please take picture of the HH.																															

10.3 Endline Survey

Air Pollution Endline

Field	Question	Answer								
enum_name	Conducted By	120 Ali Shahab 121 Hamza Mehmood 122 Yasir Ayyaz 123 Malik Nauman 124 Fareeha Naseem 125 Maria Khalid 126 Kaifa Arshad 127 Kabir 128 Tehmina Zia 129 Komal Sami 130 Asiya Sultana 131 Shayan 132 Iqra 777 Others								
enum_other	Please specify other									
Enumerators to enter current plus 1 days forecast as provided by SMS.										
s1_t1_q1 (required)	Lowest Tempertaure in centi-celsius									
s1_t1_q2 (required)	Highest Tempertaure in centi-celsius									
s1_t1_q3 (required)	Chances of rain (Answer in %'s)									
s1_t1_q4 (required)	Windspeed in KM/H									
s1_t1_q5 (required)	Condition of weather	<table border="1"> <tr> <td>Sunny</td> <td>Sunny</td> </tr> <tr> <td>Rain</td> <td>Rain</td> </tr> <tr> <td>Clouds</td> <td>Clouds</td> </tr> <tr> <td>ChancesofShower</td> <td>Chances of Shower</td> </tr> </table>	Sunny	Sunny	Rain	Rain	Clouds	Clouds	ChancesofShower	Chances of Shower
Sunny	Sunny									
Rain	Rain									
Clouds	Clouds									
ChancesofShower	Chances of Shower									
Enumerators to enter t plus 2 days forecast as provided by SMS.										
s1_t2_q1 (required)	Lowest Tempertaure in centi-celsius									
s1_t2_q2 (required)	Highest Tempertaure in centi-celsius									
s1_t2_q3 (required)	Chances of rain (Answer in %'s)									
s1_t2_q4 (required)	Windspeed in KMH									
s1_t2_q5 (required)	Condition of weather	<table border="1"> <tr> <td>Sunny</td> <td>Sunny</td> </tr> <tr> <td>Rain</td> <td>Rain</td> </tr> <tr> <td>Clouds</td> <td>Clouds</td> </tr> <tr> <td>ChancesofShower</td> <td>Chances of Shower</td> </tr> </table>	Sunny	Sunny	Rain	Rain	Clouds	Clouds	ChancesofShower	Chances of Shower
Sunny	Sunny									
Rain	Rain									
Clouds	Clouds									
ChancesofShower	Chances of Shower									
Enumerators to enter t plus 3 days forecast as provided by SMS.										
s1_t3_q1 (required)	Lowest Tempertaure in centi-celsius									
s1_t3_q2 (required)	Highest Tempertaure in centi-celsius									
s1_t3_q3 (required)	Chances of rain (Answer in %'s)									
s1_t3_q4 (required)	Windspeed in KMH									
s1_t3_q5 (required)	Condition of weather	<table border="1"> <tr> <td>Sunny</td> <td>Sunny</td> </tr> <tr> <td>Rain</td> <td>Rain</td> </tr> <tr> <td>Clouds</td> <td>Clouds</td> </tr> <tr> <td>ChancesofShower</td> <td>Chances of Shower</td> </tr> </table>	Sunny	Sunny	Rain	Rain	Clouds	Clouds	ChancesofShower	Chances of Shower
Sunny	Sunny									
Rain	Rain									
Clouds	Clouds									
ChancesofShower	Chances of Shower									
uid (required)	Please enter UID of the respondent									
check_note	Please check the following details for the respondent: Name: [name] Address: [address] Phone Number: [phone_number]									
consent_note	Consent Note									
consent (required)	Can we start our survey activity?	1 Yes 2 No								
no_consent (required)	Reason of not conducting survey	1 No one opened the door 2 Unit was empty 3 Refused because of time constraint 4 Refused because of trust issues 5 Baseline Respondent was not available 6 Appointment Given 777 Other								
no_consent_o (required)	Specify other									

Field	Question	Answer
tries (required)	After how many tries did you reach this house?	1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 10
Survey of respondent?		
s4_q10 (required)	We would in the later part of this survey play games with you which might or might not lead to you making money. If you do ending up winning money, some of it you will receive during the survey and some of it after 5 days of the survey via mobile credit. Please let us know the mobile number you would like to receive the payments at if your answers are correct.	
s4_q10z (required)	Network of cell number provided	1 Jazz 2 Warid 3 Telenor 4 Zong 5 Ufone 6 Number not given
Survey of respondent? > Pamphlet		
pamph_1 (required)	Have you retained the air pollution pamphlet that we gave you in the baseline?	1 Yes 2 No
pamph_2	Please give the respondent the pamphlet.	
pamph_3 (required)	Did the respondent accept the pamphlet?	1 Yes 2 No
note	Brief Script	
Survey of respondent? > Information and Trust		
Survey of respondent? > Information and Trust > How much do you agree with the following statements?		
info_trust_1 (required)	I care about air quality in the places I live and work.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
info_trust_2 (required)	I am aware of the air quality in Lahore.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
info_trust_3 (required)	I am aware of the air quality in Walton.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
info_trust_4 (required)	I am aware of the air quality in the area where I work.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
info_trust_5 (required)	I am aware of the air quality where my children go to school.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 6 No child 888 Don't know 999 Refused

Field	Question	Answer
info_trust_6 (required)	What were your sources of Air Quality Information in Lahore? <i>Enumerator Note: Please read out the options.</i>	<ul style="list-style-type: none"> 0 I am not interested 1 The newspaper 2 Punjab government (EPD) 3 Community members 4 Social media 5 Air/visual app 6 My own observation 7 Television 8 Word of Mouth 777 Other, please list 888 Don't know 999 Refused
info_trust_6_o (required)	If others, please list?	
info_trust_7 (required)	How many times in a week do you check the air quality from the sources mentioned.	<ul style="list-style-type: none"> 1 Less than once per week 2 Once per week 3 1-2 times per week 4 3-4 times per week 5 5-7 times per week 6 Never 888 Don't know 999 Refused
info_trust_8 (required)	Why is this air quality information important/useful for you?	<ul style="list-style-type: none"> 1 Determine Travel Plans 2 Determine Work Plans 777 Other, please list 888 Don't know 999 Refused
info_trust_8_o (required)	Please specify other?	
info_trust_9 (required)	How reliable do you think air quality information that you are familiar with is?	<ul style="list-style-type: none"> 1 Completely reliable 2 Somewhat Reliable 3 Neither reliable nor unreliable 4 Sometimes unreliable 5 Completely Unreliable 888 Don't know 999 Refused
info_trust_10 (required)	How much do you trust air quality information that you are familiar with?	<ul style="list-style-type: none"> 1 Complete trust 2 Somewhat trust 3 Indifferent 4 Sometimes gtrust 5 Do not trust at all 888 Don't know 999 Refused
info_trust_11 (required)	How many times in a week do you check the weather forecast?	<ul style="list-style-type: none"> 1 Less than once per week 2 Once per week 3 1-2 times per week 4 3-4 times per week 5 5-7 times per week 6 Never 888 Don't know 999 Refused
info_trust_12 (required)	Why are weather forecasts important/useful for you?	<ul style="list-style-type: none"> 1 Determine Travel Plans 2 Determine Work Plans 777 Other, please list 888 Don't know 999 Refused
info_trust_12_o (required)	Please specify other	
info_trust_13 (required)	From which sources do you obtain weather forecasts?	<ul style="list-style-type: none"> 1 Internet 2 Mobile Phone 3 News on Television 4 Newspaper 5 Mobile Application 777 Other, please list 888 Don't know 999 Refused
info_trust_13_o (required)	Please specify other	

Field	Question	Answer
info_trust_14 (required)	How reliable do you think weather forecasts that you are familiar with are?	1 Completely reliable 2 Somewhat Reliable 3 Neither reliable nor unreliable 4 Sometimes unreliable 5 Completely Unreliable 888 Don't know 999 Refused
info_trust_note_1	The air pollution that you experience here in Walton can come from many sources. some can be nearby and others can be hundreds of kilometers away	
Survey of respondent? > Information and Trust > How much do you agree with the following statements? > What are the three largest sources of Air Pollution in Walton? Please think about both sources near and far away.		
info_trust_15_a (required)	First Source	0 No Air pollution in Walton 1 Construction 2 Industrial sources/manufacturing facilities 3 Burning crops 4 Motor vehicles 5 Household cooking and heating 6 Power plants 7 Smoke of cigarettes 8 Burning of Garbage 9 Pollution from other countries 10 No source 777 Other, please list 888 Don't know 999 Refused
info_trust_15_o_1 (required)	Others-First Source	
info_trust_15_b (required)	Second Source	0 No Air pollution in Walton 1 Construction 2 Industrial sources/manufacturing facilities 3 Burning crops 4 Motor vehicles 5 Household cooking and heating 6 Power plants 7 Smoke of cigarettes 8 Burning of Garbage 9 Pollution from other countries 10 No source 777 Other, please list 888 Don't know 999 Refused
info_trust_15_o_2 (required)	Others-Second Source	
info_trust_15_c (required)	Third Source	0 No Air pollution in Walton 1 Construction 2 Industrial sources/manufacturing facilities 3 Burning crops 4 Motor vehicles 5 Household cooking and heating 6 Power plants 7 Smoke of cigarettes 8 Burning of Garbage 9 Pollution from other countries 10 No source 777 Other, please list 888 Don't know 999 Refused
info_trust_15_o_3 (required)	Others-Third Source	

Field	Question	Answer
info_trust_16 (required)	Please evaluate the following statement: I trust air quality measurements delivered to me by the Punjab government.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
Survey of respondent? > Travel Time Forecasts		
s6_note	Enumerator: Now we are going to think about forecasting. Let us begin with a practice forecast on a topic from everyday life; we will return to air pollution in a moment. Explain to the subject that this map depicts two locations (refer to laminated map provided to enumerator): Koray Stop in Walton and Band Road. We would like you to forecast the minimum time for a trip on a motorbike from Koray Stop in Walton to Band Road at 8 P.M. tomorrow. Please take a minute to think about this. If your guess is within +/- 2.5 minutes of the Google Maps's minimum suggested time at 8pm tomorrow, you will receive 250PKR; if within +/- 5minutes then 100 PKR. You will receive this payment via mobile credit in 5 days from now. <i>Show map and travel time data to the respondent.</i>	
s6_q1 (required)	Please give us your forecast in minutes required to travel between Koray Stop and Band Road 8 p.m. tomorrow.	
s6_q2 (required)	How confident are you that your forecast will turn out to be within +/-2.5 mins of actual time at t+1? <i>Response should be from 0-100%.</i>	
s6_q3 (required)	Before you go to bed at night, can you form a reasonable guess at what tomorrow's air quality will be like?	1 Yes 2 No 888 Don't know 999 Refused
s6_q3a (required)	If yes, why might you make this guess? <i>Source of forecast</i>	
s6_q4 (required)	If no, why do you not want to make the guess?	
s6_q5 (required)	How would you describe yesterday's air pollution?	1 below average 2 average 3 above average 888 Don't know 999 Refused
s6_q6 (required)	How do you think air quality will be tomorrow?	1 better than today 2 about the same as today 3 worse than today 888 Don't know 999 Refused
s6_q7 (required)	How do you think air quality will be 3 days from today?	1 better than today 2 about the same as today 3 worse than today 888 Don't know 999 Refused
Survey of respondent? > sec6		
Survey of respondent? > sec6 > Air Pollution Forecasts		
forcast_noted0	Enumerator: Please have the respondent take a look at the (i) PAMPHLET (ii) FORECAST DATA. Ask the subject to forecast pollution levels for TOMORROW (t+1) and THREE DAYS FROM NOW (t+3). If they want they can forecast pollution levels for the day after tomorrow (t+2) as well. Explain to the subject that while forecasting pollution levels they should answer in particles per meter cube which is the same unit as the historical forecast. If either of your guess about (t+1) or (t+3) is within 5% of the actual pollution level you will receive 250PKR; if within 10% then 150 PKR; if within 20% then 50 PKR. This payment will be sent to you via mobile credit 5 days from now. Before you make these air pollution forecasts, you will have an option of viewing the weather forecast. Enumerator: If the subject declines, do not try to persuade the subject to view the weather forecast. Please take a minute to think about this. <i>Show air pollution sheet to respondent</i>	
s6f_q1 (required)	Would you like to take a look at the weather forecast for t+1?	1 Yes 2 No
s6f_q2	Lowest temperature: [s1_t1_q1] centi-celsius Highest temperature: [s1_t1_q2] centi-celsius Chances of rain: [s1_t1_q3] percentage Windspeed: [s1_t1_q4] KM/h Condition of weather: [s1_t1_q5]	
Survey of respondent? > sec6 > Air Pollution Forecasts > T+1		
s6f_q3 (required)	Please fill out pollution forecast for TOMORROW (t+1) on average. Keep in mind pollution can be any positive number. You can guess any positive number. It doesn't have to be between 0 to 100. <i>In particles per meter cube. Enumerator: please use pamphlet to explain. کا ہفتہ کا روزانہ کی وضاحت ہوتی ہے۔ کوئی بھی مثبت عدد دیا جائے گا۔</i>	
s6f_q4 (required)	How confident are you that your forecast will turn out to be within 10% of actual pollution at t+1? <i>Please answer in percentages from 0 to 100. جواب دینا 100 تک فیصد میں۔ جواب ہونا۔</i>	

Field	Question	Answer
s6f_q5 (required)	Would you like to take a look at the weather forecast for t+3?	1 Yes
		2 No
s6f_q6	Lowest temperature: [s1_t3_q1] centi-celsius Highest temperature: [s1_t3_q2] centi-celsius Chances of rain: [s1_t3_q3] percentage Windspeed: [s1_t3_q4] KM/h Condition of weather: [s1_t3_q5]	
Survey of respondent? > sec6 > Air Pollution Forecasts > T+3		
s6f_q7 (required)	Please fill out pollution forecast for (t+3) on average. Keep in mind pollution can be any positive number. You can guess any positive number. It doesn't have to be between 0 to 100. <i>In particles per meter cube. Enumerator: please use pamphlet to explain.</i> کیا جواب مانیکروگرام فی میٹر کیوب میں ہونا چاہیے؟ وضاحت کیلئے پمفلٹ کا استعمال کریں۔	
s6f_q8 (required)	How confident are you that your forecast will turn out to be within 10% of actual pollution at t+3? <i>Please answer in percentages from 0 to 100</i> براہ کرم 0 سے 100 تک فیصد میں جواب دیں۔	
s6f_q10 (required)	Did the respondent want to voluntarily give forecast for t+2?	1 Yes 2 No
s6f_q101 (required)	Would you like to take a look at the weather forecast for t+2?	1 Yes 2 No
s6f_q102	Lowest temperature: [s1_t2_q1] centi-celsius Highest temperature: [s1_t2_q2] centi-celsius Chances of rain: [s1_t2_q3] percentage Windspeed: [s1_t2_q4] KM/h Condition of weather: [s1_t2_q5]	
Survey of respondent? > sec6 > Air Pollution Forecasts > T+2		
s6f_q11 (required)	Please fill out pollution forecast for (t+2) on average. Keep in mind pollution can be any positive number. You can guess any positive number. It doesn't have to be between 0 to 100. <i>In particles per meter cube. Enumerator: please use pamphlet to explain.</i> کیا جواب مانیکروگرام فی میٹر کیوب میں ہونا چاہیے؟ وضاحت کیلئے پمفلٹ کا استعمال کریں۔	
s6f_q12 (required)	How confident are you that your forecast will turn out to be within 10% of actual pollution at t+2? <i>Please answer in percentages from 0 to 100</i> براہ کرم 0 سے 100 تک فیصد میں جواب دیں۔	
Survey of respondent? > Forecast of Choice		
cf_1 (required)	Now we want you to forecast about a task of your choice. What is the outcome you would like to forecast? <i>میری ذہن میں کسی شادی کی تاریخ کا پیش گوئی کرنا ہے۔ آپ کو اپنی اپنی کوئی شادی کی تاریخ کا پیش گوئی کرنا ہے۔ اس کے بارے میں ہمیں پتہ چاہیے کہ آپ کی شادی کی تاریخ کب ہوگی۔</i>	
Survey of respondent? > Forecast of Choice > On which date would you like us to ask you about the realisation of your forecast?		
cf_2a	Day	
cf_2b	Month	1 Jan
		2 Feb
		3 Mar
		4 Apr
		5 May
		6 June
		7 July
		8 August
		9 Sept
		10 Oct
		11 Nov
		12 Dec
		888 Don't know
999 Refused		
cf_2c	Year	
cf_3a (required)	Is the forecast question leading to a binary(yes/no response) or a non-binary response(number/ other text)?	1 Binary(Yes/No) 2 Non-Binary(number) 3 Non-Binary(other)
cf_3b (required)	What is your forecast?	1 Yes 2 No
cf_3c (required)	What is your forecast?	
cf_3d (required)	What is your forecast?	
Survey of respondent? > Mask Use - Adult		
masks_receive1 (required)	Either from us or on your own or from anywhere else, have you been given or purchased any air quality masks?	1 Yes 2 No
masks_receive2	If yes, was it given by us or did you purchase it on your own?	1 It was given to me by your team.
		2 I purchased it on my own.
		3 Both
		777 Other
masks_receive2_o	If other, please list.	

Field	Question	Answer
masks_receive3 (required)	What kind of mask did you buy?	1 N90/N95 2 Surgical Masks 3 Cloth Masks 4 Handkerchiefs 5 Scarf 777 Others
masks_receive3_o (required)	If other, please list.	
masks_receive4 (required)	Did you wear the mask(s)?	1 Yes 2 No
masks_receive5 (required)	At what time did you generally wear the mask?	1 Early morning (5 AM - 8 AM) 2 Mid-morning (8 AM - 10 AM) 3 Late morning (10 AM - 12 PM) 4 Early afternoon (12 PM - 2 PM) 5 Late afternoon (2 PM - 5 PM) 6 Evening (5 PM - 7 PM) 7 Night (7 PM - 12 AM) 8 Late Night (12 AM - 5 AM)
masks_receive6 (required)	In the month after you took the mask from us, how many days did you wear it?	
masks_receive7 (required)	In the month after you got the mask yourself, how many days did you wear it?	
masks_receive8 (required)	What were you doing when you wore the mask?	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
masks_reason (required)	Why did you decide to wear a mask?	
masks_receive9 (required)	Do you use a motorcycle to commute?	1 Yes 2 No
Survey of respondent? > Verify child		
vc_1	Are there any children in your house?	1 Yes 2 No
Survey of respondent? > Mask Use - Children		
masks_receive11 (required)	Either from us or on your own or from anywhere else, has any child in your household been given or purchased any air quality masks?	1 Yes 2 No
masks_receive12 (required)	If yes, was it given by us, did the child purchase it on their own, or was it purchased for the child?	1 It was given to me by your team. 2 I purchased it on my own. 3 Both 777 Other
masks_receive12_o (required)	If other, please list.	
masks_receive13 (required)	What kind of mask did the child buy/was bought for the child?	1 N90/N95 2 Surgical Masks 3 Cloth Masks 4 Handkerchiefs 5 Scarf 777 Others
masks_receive13_o (required)	If other, please list.	
masks_receive14 (required)	Did the child wear the mask(s)?	1 Yes 2 No
masks_receive15 (required)	At what time did the child generally wear the mask?	1 Early morning (5 AM - 8 AM) 2 Mid-morning (8 AM - 10 AM) 3 Late morning (10 AM - 12 PM) 4 Early afternoon (12 PM - 2 PM) 5 Late afternoon (2 PM - 5 PM) 6 Evening (5 PM - 7 PM) 7 Night (7 PM - 12 AM) 8 Late Night (12 AM - 5 AM)
masks_receive16 (required)	In the month after you took the mask from us, how many days did the child wear it?	
masks_receive17 (required)	In the month after the child got the mask, how many days did they wear it?	

Field	Question	Answer
masks_receive18 (required)	What was the child doing when they wore the mask?	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
masks_reason_child (required)	Why did the child decide to wear a mask?/ Why was it decided for the child?	
masks_receive19 (required)	Is a motorcycle used for the child's commute?	1 Yes 2 No
Survey of respondent? > Pen Game		
prep_game_note	<p>Let us now play a simple game in which you bid for a pen. Think about how much you value this pen and the maximum amount you are willing to pay for it. Please don't think about the market price of the pen; just consider the value of this pen to you?</p> <p>I will now give you 20 rupees.</p> <p>In a moment, I will ask you to write down the maximum amount you would be willing to pay for one pen. Then I will randomly draw a price between 0 PKR and 20 PKR. If the price I draw is lower than the price you write down, you will pay me the randomly drawn price and receive the pen. If the price I draw is higher than the price you write down, you will pay nothing and you will not receive the pen. Notice that if the transaction occurs, the price is the randomly selected one, not the amount of your bid. The amount of your bid matters because it influences the probability that the transaction will occur. Now please write down the maximum you would be willing to pay for one pen. It is fine to answer 0 PKR if you do not wish to purchase a pen at any price. It is also fine to give PKR 20 as your answer.</p> <p>Please take a minute to think about this. Keep in mind that if your true willingness to pay is 100, please state 100. If your true willingness to pay is 102, please state 102 instead of rounding it off to 100 or some other number.</p>	
prep_game1 (required)	Please note amount that respondent has written or handover tablet to him so that he/she can write the amount himself/herself	
prep_game2	[rand4] is the randomly choosen amount	
prep_game3	This draw resulted in purchase.	
prep_game4	Please take [rand4] rupees from the respondent.	
prep_game5	This draw did not result in purchase.	
prep_game6	Please take nothing from the respondent.	
prep_game7 (required)	Did random draw result in purchase?	1 Yes 2 No
prep_game8 (required)	Did the price you choose reflect the maximum you would want to pay? Or was it above or below it?	1 Maximum you wanted to pay 2 Above 3 Below
prep_game9	Consider what would happen if you chose a price below your maximum: if your maximum price for the pen is 20 PKR but instead you write down 15 PKR then you will not win the pen if I draw the numbers 16, 17, 18, 19, or 20 in my random draw. You will now be worse off since you could have won the pen by stating your true maximum willingness to pay (20 PKR), in such cases and still gotten the pen for less than (or at worse) equal to how much you were willing to pay for it	
prep_game10	Now consider what would happen if you overstate your maximum willingness to pay: if your true willingness to pay for the pen is 15 PKR but instead you write down 20 PKR then you will win the pen if I draw the numbers 15, 16, 17, 18, and 19 in my random draw. However, you will now be worse off since you will have to pay an amount greater than your true maximum willingness to pay for the pen	
Survey of respondent? > Comprehension Questions		
comp_game_note	Please answer the following questions in light of the game explained to you above.	
comp_game1 (required)	Suppose you go to buy apples from the local market. The fruit vendor randomly quotes Rs. 60 a kilogram. Your willingness to pay is Rs. 40 a kilogram. Would you buy the apples?	1 Yes 2 No
comp_game1_correct	Your answer was correct.	
comp_game1_incorrect	Your answer was not correct	
comp_game2 (required)	Suppose you bid Rs. 15 for the pen but the randomly drawn amount is Rs. 10. Do you buy the pen?	1 Yes 2 No
comp_game2_correct	Your answer was correct.	
comp_game2_incorrect	Your answer was not correct	
comp_game3 (required)	At what price do you buy the pen?	1 Rs.10 2 Rs.15
comp_game3_correct	Your answer was correct.	
comp_game3_incorrect	Your answer was not correct	
Survey of respondent? > Mask game		

Field	Question	Answer												
s5_note	<p>There are many different pollutants in the air, some are gasses and others are small microscopic particles. While there is no practical way of protecting ourselves from the former (other than staying in doors), masks are a good way of protecting ourselves from the latter. This type of face mask is called a N95 respirator. The designation refers to the fact that in laboratory testing such masks have been shown to filter out 95% of harmful microscopic particles in the air.</p> <p>Please note that this is not the same as a "surgical mask" used by doctors in hospitals. Surgical masks are not capable of filtering the air we breathe from pollutants. Furthermore, like all "filter" systems, this mask has a limited lifetime, and has been tested to work for approximately one month after which they need to be thrown out. Replacement masks may be purchased from the local market.</p> <p>Enumerator: put mask on to demonstrate. It is important for the mask to fit snugly to your face, or it will not work properly.</p>													
s5_exp	<p>We will now give you an opportunity to bid for a mask. Think about how much you value this mask and the maximum amount you are willing to pay for it. Please don't think about the market price of the mask; just consider the value of this mask to you?</p> <p>I will now give you 200PKR.</p> <p>In a moment, I will ask you to write down the maximum amount you would be willing to pay for one mask. Then I will randomly draw a price between 0 PKR and 200PKR. If the price I draw is lower than the price you write down, you will pay me the randomly drawn price and receive the mask. If the price I draw is higher than the price you write down, you will pay nothing and you will not receive the mask. Notice that if the transaction occurs, the price is the randomly selected one, not the amount of your bid. The amount of your bid matters because it influences the probability that the transaction will occur. Now please write down the maximum you would be willing to pay for one mask. It is fine to answer 0 PKR if you do not wish to purchase a mask at any price. It is also fine to give PKR 200 as your answer.</p> <p>Please take a minute to think about this. Keep in mind that if your true willingness to pay is 100, please state 100. If your true willingness to pay is 102, please state 102 instead of rounding it off to 100 or some other number.</p>													
s5_q1 (required)	Please note amount that respondent has written or handover tablet to him so that he can write the amount himself/herself													
s5_q2	[mask_ra] is the randomly chosen amount													
s5_q22	This draw resulted in purchase.													
s5_q222	Please take [mask_ra] rupees from the respondent.													
s5_q23	This draw did not result in purchase.													
s5_q231	Please take nothing from the respondent.													
s5_q3 (required)	did random draw result in purchase?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> </table>	1	Yes	2	No								
1	Yes													
2	No													
s5_q4 (required)	If bid is positive, why are these masks valuable?													
s5_q5 (required)	If bid is zero, why are these masks not valuable?													
s5_q6 (required)	How often have you seen people wearing such masks?	<table border="1"> <tr><td>1</td><td>Never</td></tr> <tr><td>2</td><td>Not very often</td></tr> <tr><td>3</td><td>Often, but not every day</td></tr> <tr><td>4</td><td>Every day</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Never	2	Not very often	3	Often, but not every day	4	Every day	888	Don't know	999	Refused
1	Never													
2	Not very often													
3	Often, but not every day													
4	Every day													
888	Don't know													
999	Refused													
s5_q7 (required)	Do you believe these masks work?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q8 (required)	Do you think these masks are ugly?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q9 (required)	Do you think these masks are comfortable? <i>Make the respondent wear the mask</i>	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q9a (required)	Is it difficult to breathe while wearing these masks?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q10 (required)	Are there other characteristics (incl. non-monetary) of these masks that are important for your decision about whether to buy and wear them?													
s5_q11 (required)	Do you know of a convenient place to purchase masks?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q12 (required)	Please explain													
s5_q13 (required)	Do you know whether there are any counterfeit air pollution masks for sale in Lahore?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused				
1	Yes													
2	No													
888	Don't know													
999	Refused													
s5_q14 (required)	If yes, do you know where these masks are likely to be sold?													

Field	Question	Answer
s5_q15 (required)	Do you know of a place which only sells genuine masks?	1 Yes 2 No 888 Don't know 999 Refused
s5_q16 (required)	If yes, please specify.	
s5_q17 (required)	If you were to enter a shop selling different types of air pollution masks, do you think you would be able to recognize a counterfeit?	1 Yes 2 No 888 Don't know 999 Refused
s5_q18 (required)	If yes, how might you be able to do so?	
Survey of respondent? > WTP SMS		
wtp_bdm_note	<p>Our team has designed an SMS service that delivers local air quality information to residents in Walton. This information consist of two types. First, we send a forecast for tomorrow, this forecast is developed using a state-of-the-art computer model made by researchers at LUMS using local air quality data from Walton. Second, we send you an actual reading for yesterday's air quality using our local monitors. In our messages, we will also include the health status associated with the pollution levels. This service will be a subscription valid for 3 months i.e. January , February and March.</p> <p>We will now give you an opportunity to bid for the SMS service. Think about how much you value this service and the maximum amount you are willing to pay for it. Please don't think about the market price for it, just consider the value of this service to you?</p> <p>I will now give you 200PKR.</p> <p>In a moment, I will ask you to write down the maximum amount you would be willing to pay for this subscription which will be valid for three months. Then I will randomly draw a price between 0 PKR and 200PKR. If the price I draw is lower than the price you write down, you will pay me the randomly drawn price and receive the service. If the price I draw is higher than the price you write down, you will pay nothing and you will not receive the service. Notice that if the transaction occurs, the price is the randomly selected one, not the amount of your bid. The amount of your bid matters because it influences the probability that the transaction will occur.</p> <p>Now please write down the maximum you would be willing to pay for this service. It is fine to answer 0 PKR if you do not wish to purchase it at any price. It is also fine to give PKR 200 as your answer.</p> <p>Please take a minute to think about this. Keep in mind that if your true willingness to pay is 100, please state 100. If your true willingness to pay is 102, please state 102 instead of rounding it off to 100 or some other number.</p>	
wtp_bdm_1 (required)	Please note amount that respondent has written or handover tablet to him so that he can write the amount himself/herself	
wtp_note_2	[wtp_ra] is the randomly choosen amount	
wtp_note_3	This draw resulted in purchase.	
wtp_note_4	Please take [wtp_ra] rupees from the respondent.	
wtp_note_5	This draw did not result in purchase.	
wtp_note_6	Please take nothing from the respondent.	
wtp_bdm_2 (required)	did random draw result in purchase?	1 Yes 2 No
wtp_bdm_3 (required)	If bid is positive, why is the SMS Service valuable?	
wtp_bdm_4 (required)	If bid is zero, why is the SMS Service not valuable?	
cell_sms_num	Please confirm the number on which you want to receive this SMS service.	
Survey of respondent? > Satisfaction/Concerns with Air Quality		
s7_note	Now I will be asking you questions relating to air quality and pollution.	
s7_q1 (required)	Does anyone in your household have a respiratory condition, that is, have trouble breathing?	1 Yes 2 No

Field	Question	Answer
s7_q1a (required)	Relation	1 self 2 sister 3 mother 4 grandmother 5 sister-in-law (younger brother's wife) 6 sister-in-law (elder brother's wife) 7 brother's wife 8 cousin 9 mother-in-law 10 daughter-in-law 11 daughter 12 she does not live in this house 13 brother 14 father 15 grandfather 16 brother-in-law (husband's younger brother) 17 brother-in-law (husband's elder brother) 18 father-in-law 19 sister's husband 20 son-in-law 21 son 22 cousin 23 he does not live in this house 24 Hum-Zulf 777 Other 888 Don't know 999 Refused
s7_q1a_0 (required)	Please specify	
s7_note1	How much do you agree/disagree with the following statements?	
s7_q2 (required)	In the past week, I have been concerned about air quality in general.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q3 (required)	In the past week, I have been satisfied with indoor air quality at home.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q4 (required)	In the past week, I have been satisfied with outdoor air quality at home.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q8 (required)	In the past week, I have been satisfied with indoor air quality at work/school.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused

Field	Question	Answer
s7_q9 (required)	In the past week, I have been satisfied with outdoor air quality at work/school.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q10 (required)	Of the past seven days in Lahore, including today, how many had satisfactory outdoor air quality.	1 One 2 two 3 three 4 four 5 five 6 six 7 seven 888 Don't know 999 Refused
s7_q12 (required)	Air quality significantly affects my quality of life at home.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q13 (required)	Air quality significantly affects my performance at work or school.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q14 (required)	In the past week, poor air quality has affected my ability to sleep.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q14a (required)	In the past week, noise from outside has affected my ability to sleep.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q15 (required)	In the past week, I reduced the number of hours I spent on non-work outdoor activities in response to poor air quality	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q16 (required)	In the past week, I reduced the number of hours I worked significantly in response to poor air quality.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
s7_q18 (required)	In the past week, I have rescheduled activities across days in response to poor air quality.	1 Yes 2 No 888 Don't know 999 Refused
s7_q19 (required)	If yes, please describe.	
s7_q21	Enum Note	
Survey of respondent? > Satisfaction/Concerns with Air Quality > Best Hours		
s7_q23 (required)	Best Hour: 1	

Field	Question	Answer
s7_q24 (required)	Best Hour: 2	
Survey of respondent? > Satisfaction/Concerns with Air Quality > Worst Hours		
s7_q26 (required)	Worst Hour: 1	
s7_q27 (required)	Worst Hour: 2	
Survey of respondent? > Attitudes and Behaviour towards Air Pollution		
att_behav1 (required)	Do you think indoor air quality is harmful to your health?	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav2 (required)	Do you think outdoor air quality is harmful to your health?	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav3 (required)	Where do you think air quality is more harmful to your health: outdoors or indoors?	1 Indoors 2 Outdoors
att_behav4 (required)	I believe I experience less harm from air pollution if I stay inside.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav5 (required)	I believe I experience less harm from air pollution if I turn on the air conditioner.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav6 (required)	I believe I experience less harm from air pollution if I turn on the air fan.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav7 (required)	I believe I experience less harm from air pollution if I use medicines for throat infections, asthma etc	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav8 (required)	I believe I experience less harm from air pollution if I use herbal remedies	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav9 (required)	What herbal remedies would you use?	
att_behav10 (required)	I believe I experience less harm from air pollution if I close the windows and doors of my house properly.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused

Field	Question	Answer
att_behav11 (required)	I believe I experience less harm from air pollution if I wear a handkerchief or scarf over my nose and mouth.	1 Strongly Agree 2 Agree 3 Neither agree or disagree 4 Disagree 5 Strongly Disagree 888 Don't know 999 Refused
att_behav12_0 (required)	What is the age of the oldest active adult member within your household?	
att_behav12 (required)	In the past week, within your household, did the oldest active adult member stay inside in response to poor air quality?	1 Yes 2 No 888 Don't know 999 Refused
att_behav13 (required)	In the past week, within your household, did any other active adult member stay inside in response to poor air quality? <i>Make sure respondent is talking about adult active member</i>	1 Yes 2 No 888 Don't know 999 Refused
Survey of respondent? > Time use adult		
time_adult	Introductory note	
time_h1 (required)	8 am- 9 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h2 (required)	9 am- 10 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h3 (required)	10 am- 11 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h4 (required)	11 am- 12 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer

Field	Question	Answer
time_h5 (required)	12 pm- 1 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h6 (required)	1 pm- 2 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h7 (required)	2 pm- 3 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h8 (required)	3 pm- 4 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h9 (required)	4 pm- 5 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer

Field	Question	Answer
time_h10 <i>(required)</i>	5 pm- 6 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h11 <i>(required)</i>	6 pm- 7 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h12 <i>(required)</i>	7 pm- 8 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h13 <i>(required)</i>	8 pm- 9 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h14 <i>(required)</i>	9 pm- 10 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer

Field	Question	Answer
time_h15 <i>(required)</i>	10 pm- 11 pm	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h16 <i>(required)</i>	11 pm- 12 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h17 <i>(required)</i>	12 am- 1 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h18 <i>(required)</i>	1 am- 2 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h19 <i>(required)</i>	2 am- 3 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer

Field	Question	Answer
time_h20 <i>(required)</i>	3 am- 4 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h21 <i>(required)</i>	4 am- 5 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h22 <i>(required)</i>	5 am- 6 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h23 <i>(required)</i>	6 am- 7 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
time_h24 <i>(required)</i>	7 am- 8 am	1 Sleep Inside 2 Sleep Outside 3 Paid indoor work 4 Paid outdoor work 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 999 Refuse to answer
Survey of respondent? > Verify details: youngest physically active child		
verify_child	We want you to think the youngest physically active child in your household. We want you to think of only the children below 14 years of age who are affected by changing air quality, weather etc. The youngest physically active child includes any child in the house who is able to walk. Children who are crawling and under specialized or infant care do not count. Is there such a child in your house?	1 Yes 2 No
age_child	What is the age of the child?	

Field	Question	Answer
gen_child	What is the gender of the youngest physically active child you have chosen? Enumerator Note: In case of twins, respondent should choose whoever they consider to be the 'younger twin' جائزہ کی صورت میں رجواب دہان کر ان میں سے کس عمر جائزہ کی انتخاب کرنا چاہئے	1 Male 2 Female
relation_child	What is your relation to this child?	1 self 2 sister 3 mother 4 grandmother 5 sister-in-law (younger brother's wife) 6 sister-in-law (elder brother's wife) 7 brother's wife 8 cousin 9 mother-in-law 10 daughter-in-law 11 daughter 12 she does not live in this house 13 brother 14 father 15 grandfather 16 brother-in-law (husband's younger brother) 17 brother-in-law (husband's elder brother) 18 father-in-law 19 sister's husband 20 son-in-law 21 son 22 cousin 23 he does not live in this house 24 Hum-Zulf 777 Other 888 Don't know 999 Refused
time_spent_child	From 8 a.m. yesterday to 8 a.m. today, on average, how many hours did you spend with this child? Enumerator note: Write 888 if respondent does not know, 999 if refused to answer.	
Survey of respondent? > Time Use - Child: Introductory note		
time_child_h1 (required)	8 am- 9 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h2 (required)	9 am- 10 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer

Field	Question	Answer
time_child_h3 (required)	10 am- 11 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h4 (required)	11 am- 12 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h5 (required)	12 pm- 1 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h6 (required)	1 pm- 2 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer

Field	Question	Answer
time_child_h7 (required)	2 pm- 3 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h8 (required)	3 pm- 4 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h9 (required)	4 pm- 5 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h10 (required)	5 pm- 6 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer

Field	Question	Answer
time_child_h11 (required)	6 pm- 7 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h12 (required)	7 pm- 8 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h13 (required)	8 pm- 9 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h14 (required)	9 pm- 10 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer

Field	Question	Answer
time_child_h15 (required)	10 pm- 11 pm	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h16 (required)	11 pm- 12 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h17 (required)	12 am- 1 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h18 (required)	1 am- 2 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer

Field	Question	Answer
time_child_h19 <i>(required)</i>	2 am- 3 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h20 <i>(required)</i>	3 am- 4 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h21 <i>(required)</i>	4 am- 5 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h22 <i>(required)</i>	5 am- 6 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer

Field	Question	Answer
time_child_h23 (required)	6 am- 7 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
time_child_h24 (required)	7 am- 8 am	1 Sleep Inside 2 Sleep Outside 3 Indoor Study 4 Outdoor Study 5 Home indoor work 6 Home outdoor work 7 Indoor Leisure 8 Outdoor Leisure 9 Travel 10 Other Indoor 11 Other Outdoor 12 Can't Recall 888 Don't know 999 Refuse to answer
Survey of respondent? > Avoidance		
s7_q38 (required)	In the past week, how many days did this youngest physically active child play outside the house? <small>آپ صرف ان بچوں کو باہر سے سوچنا ہے جن کی عمر چھ سال سے کم ہے اور جن کی صحت ایسا اور (یا ہو) کنبھی سے متاثر ہوئی ہے۔ کم سے کم بچوں کو باہر آپ کو شامل کرنے کی ضرورت ہے جو باہر سے سوچنا چاہتے ہیں۔</small>	
s7_q39 (required)	Did the youngest physically active child in the household have any respiratory episodes in the last 3 months?	1 Yes 2 No
s7_q40 (required)	If yes, was the youngest physically active child in the household taken to a hospital in response to these episodes in the last 3 months?	1 Yes 2 No
s7_q40_1 (required)	What is the health status of the youngest physically active child in the household?	1 Very Healthy 2 Healthy 3 Neither healthy nor unhealthy 4 Unhealthy 5 Very Unhealthy 888 Don't know 999 Refused
s7_q41 (required)	In the past week, have you restricted the youngest physically active child in the household from going outside in response to poor air quality?	1 Yes 2 No
s7_q41a (required)	In the past week, have you restricted the youngest physically active child in the household from going outside in response to any other reasons?	1 Yes 2 No
s7_q31 (required)	In the past week, have you restricted your children from going outside in response to poor air quality?	1 Yes 2 No
s7_q31a (required)	In the past week, have you restricted your children from going outside in response to any other reasons?	1 Yes 2 No
s7_q34 (required)	Have you changed anything else about your activities or purchases in response to poor air quality?	1 Yes 2 No
s7_q34a (required)	If yes, what have you changed?	
h_q6 (required)	Are there any areas of the city that you avoided in response to bad air quality?	1 Yes 2 No
h_q7 (required)	If yes, what are those areas?	
Survey of respondent? > Forecasting and Retrospective Variability		
fore_var_note1	Now we are going to ask you a few questions about forecasting your working hours, expenditure and happiness over the next 7 days.	
fore_var1_1	Are you involved in paid labour?	1 Yes 2 No

Field	Question	Answer																		
fore_var11	How are you paid your wage?	<table border="1"> <tr><td>1</td><td>Hourly</td></tr> <tr><td>2</td><td>Daily</td></tr> <tr><td>3</td><td>Weekly</td></tr> <tr><td>4</td><td>Monthly</td></tr> <tr><td>5</td><td>Annual</td></tr> <tr><td>6</td><td>Piecemeal</td></tr> <tr><td>777</td><td>Other</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refuse to answer</td></tr> </table>	1	Hourly	2	Daily	3	Weekly	4	Monthly	5	Annual	6	Piecemeal	777	Other	888	Don't know	999	Refuse to answer
1	Hourly																			
2	Daily																			
3	Weekly																			
4	Monthly																			
5	Annual																			
6	Piecemeal																			
777	Other																			
888	Don't know																			
999	Refuse to answer																			
fore_var11_o	Please specify.																			
fore_var1	Do your hours of work in paid labour vary from week to week?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused										
1	Yes																			
2	No																			
888	Don't know																			
999	Refused																			
fore_var2	Do your hours of work in unpaid labour vary from week to week?	<table border="1"> <tr><td>1</td><td>Yes</td></tr> <tr><td>2</td><td>No</td></tr> <tr><td>888</td><td>Don't know</td></tr> <tr><td>999</td><td>Refused</td></tr> </table>	1	Yes	2	No	888	Don't know	999	Refused										
1	Yes																			
2	No																			
888	Don't know																			
999	Refused																			
fore_var3 (required)	Can you please tell us how many hours do you expect to work in the next 7 days for paid labour.																			
fore_var4 (required)	Can you please tell us how many hours do you expect to work in the next 7 days for unpaid labour.																			
fore_var4_1	What do you predict your happiness to be over the next 7 days?	<table border="1"> <tr><td>1</td><td>Very happy</td></tr> <tr><td>2</td><td>Happy</td></tr> <tr><td>3</td><td>Neither happy nor unhappy</td></tr> <tr><td>4</td><td>Unhappy</td></tr> <tr><td>5</td><td>Very unhappy</td></tr> <tr><td>6</td><td>Don't know</td></tr> <tr><td>7</td><td>Refused to answer</td></tr> </table>	1	Very happy	2	Happy	3	Neither happy nor unhappy	4	Unhappy	5	Very unhappy	6	Don't know	7	Refused to answer				
1	Very happy																			
2	Happy																			
3	Neither happy nor unhappy																			
4	Unhappy																			
5	Very unhappy																			
6	Don't know																			
7	Refused to answer																			
fore_var4_2	What do you predict your expenditure to be over the next 7 days (in rupees)?																			
fore_var_note2	Now we are going to ask you a few questions about the day to day variability in your income, expenditures and happiness over the the last 7 days?																			
fore_var5 (required)	How variable has your level of expenditure been from day to day over the last 7 days?*	<table border="1"> <tr><td>1</td><td>Almost the same everyday</td></tr> <tr><td>2</td><td>Small changes from day to day</td></tr> <tr><td>3</td><td>Moderate changes from day to day</td></tr> <tr><td>4</td><td>Large changes from day to day</td></tr> <tr><td>5</td><td>Very Large changes from day to day</td></tr> <tr><td>6</td><td>Don't know</td></tr> <tr><td>7</td><td>Did not answer</td></tr> </table>	1	Almost the same everyday	2	Small changes from day to day	3	Moderate changes from day to day	4	Large changes from day to day	5	Very Large changes from day to day	6	Don't know	7	Did not answer				
1	Almost the same everyday																			
2	Small changes from day to day																			
3	Moderate changes from day to day																			
4	Large changes from day to day																			
5	Very Large changes from day to day																			
6	Don't know																			
7	Did not answer																			
fore_var6 (required)	How variable has your level of happiness been from day to day over the last 7 days?*	<table border="1"> <tr><td>1</td><td>Almost the same everyday</td></tr> <tr><td>2</td><td>Small changes from day to day</td></tr> <tr><td>3</td><td>Moderate changes from day to day</td></tr> <tr><td>4</td><td>Large changes from day to day</td></tr> <tr><td>5</td><td>Very Large changes from day to day</td></tr> <tr><td>6</td><td>Don't know</td></tr> <tr><td>7</td><td>Did not answer</td></tr> </table>	1	Almost the same everyday	2	Small changes from day to day	3	Moderate changes from day to day	4	Large changes from day to day	5	Very Large changes from day to day	6	Don't know	7	Did not answer				
1	Almost the same everyday																			
2	Small changes from day to day																			
3	Moderate changes from day to day																			
4	Large changes from day to day																			
5	Very Large changes from day to day																			
6	Don't know																			
7	Did not answer																			
fore_var7 (required)	How variable has your level of income been from day to day over the last 7 days?*	<table border="1"> <tr><td>1</td><td>Almost the same everyday</td></tr> <tr><td>2</td><td>Small changes from day to day</td></tr> <tr><td>3</td><td>Moderate changes from day to day</td></tr> <tr><td>4</td><td>Large changes from day to day</td></tr> <tr><td>5</td><td>Very Large changes from day to day</td></tr> <tr><td>6</td><td>Don't know</td></tr> <tr><td>7</td><td>Did not answer</td></tr> </table>	1	Almost the same everyday	2	Small changes from day to day	3	Moderate changes from day to day	4	Large changes from day to day	5	Very Large changes from day to day	6	Don't know	7	Did not answer				
1	Almost the same everyday																			
2	Small changes from day to day																			
3	Moderate changes from day to day																			
4	Large changes from day to day																			
5	Very Large changes from day to day																			
6	Don't know																			
7	Did not answer																			
fore_var_note3	Now we are going to ask you a few questions about the week to week variability in your income, expenditures and happiness over the the last month?																			

Field	Question	Answer
fore_var8 (required)	How variable has your level of expenditure been from week to week over the last month?	1 Almost the same every week 2 Small changes from week to week 3 Moderate changes from week to week 4 Large changes from week to week 5 Very Large changes from week to week 6 Don't know 7 Did not answer
fore_var9 (required)	How variable has your level of happiness been from week to week over the last month?	1 Almost the same every week 2 Small changes from week to week 3 Moderate changes from week to week 4 Large changes from week to week 5 Very Large changes from week to week 6 Don't know 7 Did not answer
fore_var10 (required)	How variable has your level of income been from week to week over the last month?	1 Almost the same every week 2 Small changes from week to week 3 Moderate changes from week to week 4 Large changes from week to week 5 Very Large changes from week to week 6 Don't know 7 Did not answer
Survey of respondent? > Risk Aversion		
s8_q1 (required)	How do you see yourself: Are you in general a person who takes health risk or do you try to evade health risks?	1 completely unwilling to take health risk 2 somewhat unwilling to take health risk 3 neither willing nor unwilling to take health risk 4 somewhat willing to take health risk 5 fully willing to take health risk 888 Don't know 999 Refused
note_risk	Now we are going to play another game. You will be presented with 11 different questions. Each question is associated with a payment. In each question, you have to choose an option. Once you have chosen your options for these 11 questions, a ball will be drawn out of your 11 choices and pay you whatever payment is associated with it. The first and last questions have already been answered for your benefit. We will explain why we have done so in a moment. Please note that this game is a little different from what we played with you earlier a few months ago and has a different payment mechanism.	
Survey of respondent? > Risk Aversion > Please imagine the following situation: You can choose between a sure payment of a particular amount of money, or a lottery, where you would have an equal chance of getting Rs. 100 or getting nothing. We will present to you 11 different situations.		
s8_2	First option is "50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing" vs second option is "100% chance of receiving nothing". Therefore, we have selected first option for you. We would like to remind you that you will be making a decision between a sure payment and a 50/50 lottery (50% chance of winning nothing, 50% chance of winning PKR 150). Please note that the lottery never changes and the sure payments increase in increments of PKR 15 from 0 to 150. Another important thing to keep in mind is that if a person prefers 30 for sure over a 50/50 at 0 and 150, that person will probably also prefer 45 over the same 50/50 lottery. <i>Show risk aversion sheet to the respondent.</i>	
s8_22 (required)	Selection 2	1 50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing 2 A hundred percent chance of getting Rs. 15 right now?

Field	Question	Answer																						
s8_3 (required)	Selection 3	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 30 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 30 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 30 right now?																							
s8_4 (required)	Selection 4	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 45 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 45 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 45 right now?																							
s8_5 (required)	Selection 5	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 60 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 60 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 60 right now?																							
s8_6 (required)	Selection 6	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 75 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 75 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 75 right now?																							
s8_7 (required)	Selection 7	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 90 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 90 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 90 right now?																							
s8_8 (required)	Selection 8	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 105 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 105 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 105 right now?																							
s8_9 (required)	Selection 9	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 120 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 120 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 120 right now?																							
s8_10 (required)	Selection 10	<table border="1"> <tr> <td>1</td> <td>50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing</td> </tr> <tr> <td>2</td> <td>A hundred percent chance of getting Rs. 135 right now?</td> </tr> </table>	1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing	2	A hundred percent chance of getting Rs. 135 right now?																		
1	50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing																							
2	A hundred percent chance of getting Rs. 135 right now?																							
s8_11	Last option is "50 percent chance of receiving 150 rupees or 50 percent chance of receiving nothing" vs second option is "100% chance of receiving 150". Therefore, we have selected second option for you.																							
remind_risk	Take a brief moment to look over your 11 choices. Is there something you want to change or are these your final 11 choices?																							
s8_q7 (required)	Now you will get payment according to the selection you made in earlier questions. I am going to show you 11 different colors, one color represent 1 selection and we are not sure which color is associated with which particular selection. It's going to be completely random. Depending on the color you select, that selection will be shown which you made earlier and on that particular selection you will get payment. Please select a color?	<table border="1"> <tr><td>1</td><td>Pink Color <input type="checkbox"/></td></tr> <tr><td>2</td><td>Green Color <input type="checkbox"/></td></tr> <tr><td>3</td><td>Purple Color <input type="checkbox"/></td></tr> <tr><td>4</td><td>Blue Color <input type="checkbox"/></td></tr> <tr><td>5</td><td>Yellow Color <input type="checkbox"/></td></tr> <tr><td>6</td><td>Black Color <input type="checkbox"/></td></tr> <tr><td>7</td><td>Red Color <input type="checkbox"/></td></tr> <tr><td>8</td><td>Brown Color <input type="checkbox"/></td></tr> <tr><td>9</td><td>Orange Color <input type="checkbox"/></td></tr> <tr><td>10</td><td>Gray Color <input type="checkbox"/></td></tr> <tr><td>11</td><td>Light Blue <input type="checkbox"/></td></tr> </table>	1	Pink Color <input type="checkbox"/>	2	Green Color <input type="checkbox"/>	3	Purple Color <input type="checkbox"/>	4	Blue Color <input type="checkbox"/>	5	Yellow Color <input type="checkbox"/>	6	Black Color <input type="checkbox"/>	7	Red Color <input type="checkbox"/>	8	Brown Color <input type="checkbox"/>	9	Orange Color <input type="checkbox"/>	10	Gray Color <input type="checkbox"/>	11	Light Blue <input type="checkbox"/>
1	Pink Color <input type="checkbox"/>																							
2	Green Color <input type="checkbox"/>																							
3	Purple Color <input type="checkbox"/>																							
4	Blue Color <input type="checkbox"/>																							
5	Yellow Color <input type="checkbox"/>																							
6	Black Color <input type="checkbox"/>																							
7	Red Color <input type="checkbox"/>																							
8	Brown Color <input type="checkbox"/>																							
9	Orange Color <input type="checkbox"/>																							
10	Gray Color <input type="checkbox"/>																							
11	Light Blue <input type="checkbox"/>																							
g1_dec1	[forum1]																							
g1_dec2	[forum2]																							
g1_dec3	[forum3]																							
g1_dec4	[forum4]																							
g1_dec5	150																							
g1_dec6	[forum6]																							
g1_dec7	[forum7]																							
g1_dec8	[forum8]																							
g1_dec9	[forum9]																							
g1_dec10	50% chance of getting 150 and 50% chance of getting nothing																							
g1_dec11	[forum11]																							
g2_d1_1_a	You have won 150 Rupees																							
g2_d1_1_b	You have won 0 Rupees																							

Field	Question	Answer
g2_d1_1_c	You have won 135 Rupees	
g2_d1_11_b	You have won 0 Rupees	
g2_d1_11_c	You have won 105 Rupees	
g2_d1_11_a	You have won 150 Rupees	
g2_d1_2_a	You have won 150 Rupees	
g2_d1_2_b	You have won 0 Rupees	
g2_d1_2_c	You have won 120 Rupees	
g2_d2_9_a	You have won 150 Rupees	
g2_d2_9_b	You have won 0 Rupees	
g2_d2_9_c	You have won 90 Rupees	
g2_d2_5_c	You have won 150 Rupees	
g2_d1_3_a	You have won 150 Rupees	
g2_d1_3_b	You have won 0 Rupees	
g2_d1_3_c	You have won 75 Rupees	
g2_d1_8_b	You have won 0 Rupees	
g2_d1_8_c	You have won 45 Rupees	
g2_d1_8_a	You have won 150 Rupees	
g2_d1_4_a	You have won 150 Rupees	
g2_d1_4_b	You have won 0 Rupees	
g2_d1_4_c	You have won 60 Rupees	
g2_d2_7_a	You have won 150 Rupees	
g2_d2_7_b	You have won 0 Rupees	
g2_d2_7_c	You have won 30 Rupees	
g2_d1_6_a	You have won 150 Rupees	
g2_d1_6_b	You have won 0 Rupees	
g2_d2_10_a	You have won 150 Rupees	
g2_d2_10_b	You have won 0 Rupees	
g2_d2_10_c	You have won 15 Rupees	
enum (required)	ENUM Only. Please note the amount you have given to respondent in this game: 0,15,30,45,60,75,90,105,120,135,150	0 0 15 15 30 30 45 45 60 60 75 75 90 90 105 105 120 120 135 135 150 150
Survey of respondent? > Intervention recall		
recall_q1 (required)	True or false: People tend to round their numbers too much when making forecasts. For example, saying half an hour rather than 27 minutes.	1 TRUE 2 FALSE 3 Don't know
recall_q2 (required)	Imagine you have access to the history of daily temperatures going back for one year. How much of this history should you use if you are trying to predict the temperature exactly 20 days from now? <i>Please answer in days. If 3 months then enter 180 days.
Write 888 if don't know</i>	
recall_q3 (required)	Imagine you are trying to forecast whether your 24-year-old cousin will get married this year. If we assume 15% of average Pakistan's get married at the age of 24. Say you also, through personal experience, believe your cousin to be successful, intelligent, and charming. Which of these two facts—information on average Pakistan's getting married or your personal experience with your cousin—should be the starting point for your forecast?	1 15 percent of pakistanis get married at 24 years of age 2 your personal experience with your cousin 888 Don't know
recall_q4 (required)	Is the statement that 15% of Pakistanis get married at the age of 24 an inside view or an outside view? <i>Enumerator: no need to explain what inside and outside view are. If they do not know, they should select do not know as their response. نپادی اور مخصوص حصہ کی رضاحت کرنا کی ضرورت نہ ہے اگر وہ اندر یا باہر جانے کے جواب پر طرز پر "جانتا" منتخب کریں</i>	2 Outside 1 Inside 888 Don't know
Survey of respondent? > Social Desirability Scale		
sdscale_note	I am now going to read out some statements, I'd like to know whether you feel these accurately describe your personality or not. There is no right or wrong answer. Please just respond however you think is best.	
sdscale_1 (required)	It is sometimes hard for me to go on with my work if I am not encouraged.	1 Yes 2 No
sdscale_2 (required)	I sometimes have negative feelings towards people when I don't get my way.	1 Yes 2 No
sdscale_3 (required)	On a few occasions, I have given up doing something because I thought too little of my ability.	1 Yes 2 No
sdscale_4 (required)	There have been times when I felt like rebelling against people in authority even though I knew they were right.	1 Yes 2 No

Field	Question	Answer
sdscale_5 (required)	No matter who I'm talking to, I'm always a good listener.	1 Yes 2 No
sdscale_6 (required)	There have been occasions when I took advantage of someone.	1 Yes 2 No
sdscale_7 (required)	I'm always willing to admit it when I make a mistake.	1 Yes 2 No
sdscale_8 (required)	I sometimes try to get even rather than forgive and forget.	1 Yes 2 No
sdscale_9 (required)	I am always courteous, even to people who are disagreeable.	1 Yes 2 No
sdscale_10 (required)	I have never been irked when people expressed ideas very different from my own.	1 Yes, I have been irked 2 No, I have never been irked
sdscale_11 (required)	There have times when I was quite jealous of the good fortune of others.	1 Yes 2 No
sdscale_12 (required)	I am sometimes irritated by people who ask favors of me.	1 Yes 2 No
sdscale_13 (required)	I have deliberately said something that hurt someone's feelings.	1 Yes 2 No
Survey of respondent? > Policy Preferences		
policy_note	In this part of the survey, we will elicit your preferences for policies that the Punjab government should implement for the city of Lahore. We will then use the aggregated data from this survey to present relevant officials and policy makers with your preferences.	
note_1	Random value is 0.9906511624795794	
ready (required)	Are you ready to randomize?	1 Yes 2 No
note_2	You have been assigned to route 3	
start_go_to_a	Go to Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore. Policy B: The government has decided to invest in health care programs in Lahore.	
start_go_to_b	Go to Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore. Policy B: The government has decided to invest in programs aimed at improving education in Lahore.	
start_go_to_c	Go to Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore Policy B: The government has decided to invest in waste management programs in Lahore	
Survey of respondent? > Policy Preferences > Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore. Policy B: The government has decided to invest in health care programs in Lahore.		
policy_1_c (required)	Which policy will you prefer?	1 Air Quality Improvement 2 Health Care 3 Indifferent between both policies 4 Refuse to answer
policy_1_1 (required)	What share of provincial government spending should go to programs aimed at improving air quality? <i>Enumerator Note: Answer in percentage. فیصد میں جواب دو۔</i>	
policy_1_2 (required)	What share of provincial government spending should go to health care programs? <i>Enumerator Note: Answer in percentage. فیصد میں جواب دو۔</i>	
from_a_go_to_b	You have finished Section A. Please go to Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore. Policy B: The government has decided to invest in programs aimed at improving education in Lahore.	
from_a_go_to_end	You have finished Section A. Please go to the [grp_end]	
Survey of respondent? > Policy Preferences > Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore. Policy B: The government has decided to invest in programs aimed at improving education in Lahore.		

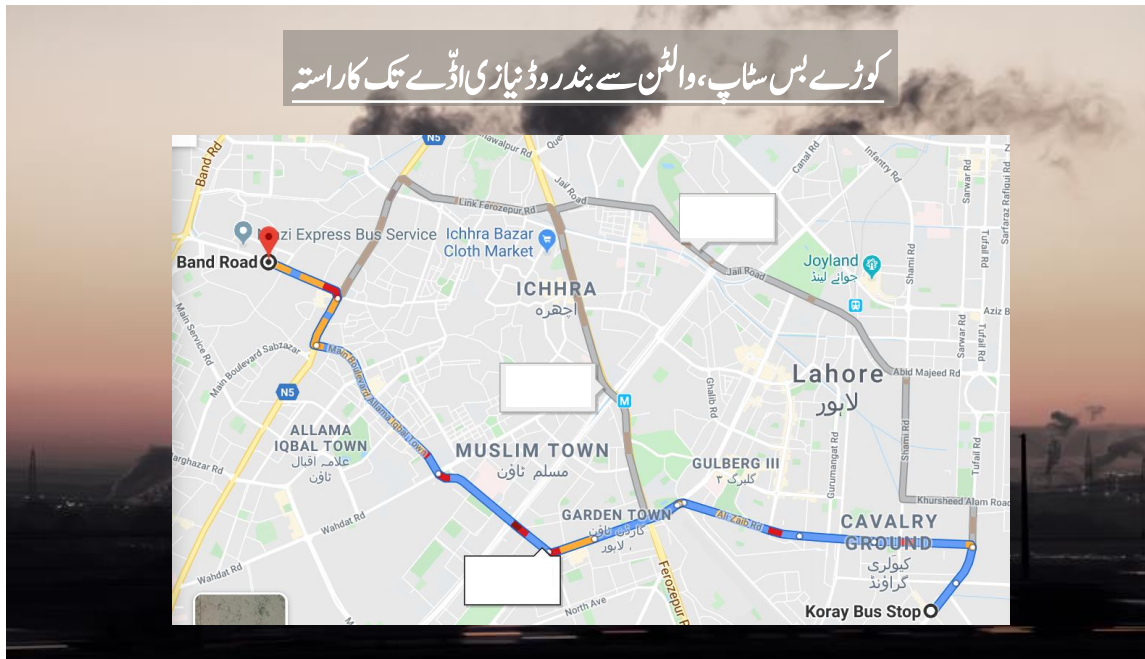
Field	Question	Answer
policy_2_c (required)	Which policy will you prefer?	1 Air Quality Improvement 2 Education 3 Indifferent between both policies 4 Refuse to answer
policy_2_1 (required)	What share of provincial government spending should go to programs aimed at improving air quality? <i>Enumerator Note: Answer in percentage. جواب سز: فیصد</i>	
policy_2_2 (required)	What share of provincial government spending should go to programs aimed at improving education? <i>Enumerator Note: Answer in percentage. جواب سز: فیصد</i>	
from_b_go_to_c	You have finished Section B. Please go to Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore Policy B: The government has decided to invest in waste management programs in Lahore	
from_b_go_to_end	You have finished Section B. Please go to the [grp_end]	
Survey of respondent? > Policy Preferences > Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore Policy B: The government has decided to invest in waste management programs in Lahore		
policy_3_c (required)	Which policy will you prefer?	1 Air Quality Improvement 2 Waste Management 3 Indifferent between both policies 4 Refuse to answer
policy_3_1 (required)	What share of provincial government spending should go to programs aimed at improving air quality? <i>Enumerator Note: Answer in percentage. جواب سز: فیصد</i>	
policy_3_2 (required)	What share of provincial government spending should go to waste management programs? <i>Enumerator Note: Answer in percentage. جواب سز: فیصد</i>	
from_c_go_to_end	You have finished Section C. Please go to the [grp_end]	
from_c_go_to_a	You have finished Section C. Please go to Assume that the Punjab government has recently received 1 crore (100 lakhs) in funds and it faces the choice to invest these funds into two different policies. Policy A: The government has decided to invest in programs aimed at improving air quality in Lahore. Policy B: The government has decided to invest in health care programs in Lahore.	
Survey of respondent? > Policy Preferences > grp_end		
continue	You have reached the end. Thanks for your time.	1 Continue
Survey of respondent? > Spillover		
spill_1 (required)	Did you receive any LUMS air pollution text messages similar to these from someone else? <i>Show SMS template to the respondent. جواب ڏانهن: ڪو موبائيل پيغام ڪي ٽيڪسٽون ٺڪ ٿيون.</i>	1 Yes 2 No
spill_2 (required)	If yes, how frequently did this happen?	1 1-10 times 2 10-25 times 3 25-50 times 4 50+ times
spill_3 (required)	If yes, can you let us know what number did you receive these from?	
spill_4 (required)	Did you see any other air pollution forecasts apart from the ones we mentioned?	1 Yes 2 No
spill_5 (required)	If yes, how frequently did this happen?	1 1-10 times 2 10-25 times 3 25-50 times 4 50+ times
spill_6 (required)	Did you see any other (non-LUMS) air pollution information?	1 Yes 2 No
spill_7 (required)	If yes, how frequently did this happen?	1 1-10 times 2 10-25 times 3 25-50 times 4 50+ times
spill_8 (required)	Did you receive any forecasting advice from someone else?	1 Yes 2 No
spill_8a	If yes, what forecasting advice did you receive?	
spill_9 (required)	Did you share our air pollution messages with others?	1 Yes 2 No
spill_10 (required)	If yes, how frequently did this happen?	1 1-10 times 2 10-25 times 3 25-50 times 4 50+ times
spill_11 (required)	Did you share our forecasting advice with others?	1 Yes 2 No

Field	Question	Answer
Survey of respondent? > SMS		
sms_3 (required)	How many of our last 7 pollution forecast messages did you read?	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 Illiterate 999 Refuse to answer 888 Did not get a message
sms_4 (required)	On average, in your view, how accurate was the forecast we provided for today?	1 Very inaccurate 2 Somewhat inaccurate 3 Somewhat accurate 4 Very accurate 5 Not sure 6 Didn't read your message 7 Didn't receive your message
sms_5 (required)	During the past few months, on average how many times in a week did you see our forecasts messages?	
Survey of respondent? > GPS		
Survey of respondent? > amounts_given		
amounts_a1	[a_1] in pen game	
amounts_a2	20 in pengame	
amounts_a3	[a_2] in mask game	
amounts_a4	200 in mask game	
amounts_a5	[a_3] in SMS game	
amounts_a6	200 in SMS game	
amounts_a7	[enum] in risk game	

10.3.1 SMS Service Forecast Text Message - Endline (Inclusion of Health Status)



10.3.2 Map for Travel Time Forecasting - Endline



10.3.3 Historical Travel Time Data - Endline

کوڑے بس سٹاپ، والٹن سے بندر وڈ تک کے سفر کے وقت کے بارے میں پچھلے 3 مہینوں کی معلومات
(موٹر سائیکل کے ذریعے)

<u>پچھلے 3 مہینوں میں 4 کم ٹریفک والے دنوں کا زیادہ سے زیادہ سفر کا</u> <u>وقت</u> <u>(منٹ میں)</u>	<u>پچھلے 3 مہینوں کا اوسط سفر کا وقت</u> <u>(منٹ میں)</u>	<u>پچھلے 3 مہینوں میں سب سے زیادہ ٹریفک والے 3 دنوں کا کم</u> <u>از کم سفر کا وقت</u> <u>(منٹ میں)</u>
26	30	33













10.3.4 Historical Pollution Data - Endline

آپ کے علاقہ کا پچھلے 8 مہینوں میں فضا کا معیار

پچھلے 8 مہینوں کے صاف ترین 10 دنوں کی زیادہ سے زیادہ سطح آلودگی (ذرات مائیکرو گرام فی میٹر کیوب)	پچھلے 8 مہینوں کی اوسط سطح آلودگی (ذرات مائیکرو گرام فی میٹر کیوب)	پچھلے 8 مہینوں کے آلودہ ترین 9 دنوں کی کم از کم سطح آلودگی (ذرات مائیکرو گرام فی میٹر کیوب)
37	127	334

10.3.5 Risk Aversion Supplement 1a - Endline

قیمتی انعام		چیتنے کا برابر موقع		#
0	Rs.0	Rs.0	Rs.150	1
15		Rs.0	Rs.150	2
30		Rs.0	Rs.150	3
45		Rs.0	Rs.150	4
60		Rs.0	Rs.150	5
75		Rs.0	Rs.150	6
90		Rs.0	Rs.150	7
105		Rs.0	Rs.150	8
120		Rs.0	Rs.150	9
135		Rs.0	Rs.150	10
150		Rs.0	Rs.150	11

10.3.6 Risk Aversion Supplement 1b - Endline

