SUPPLEMENTARY MATERIAL

Profiles of Participating PUJ Drivers

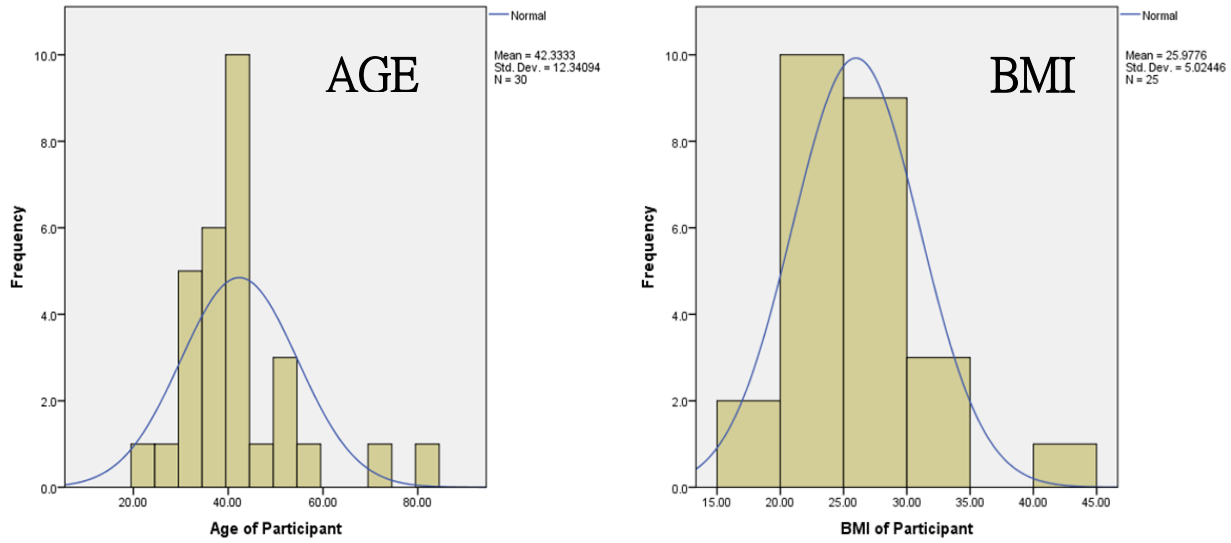

Figure S1. Driver profiles of participating drivers for the mobile campaign showing histograms of their age (left) and BMI (right).

Colocation Experiment

The AS-LUNG devices were calibrated against a reference instrument during three separate periods: a two-day colocation experiment from 15-16 January 2019, a 16-day colocation experiment at the Manila Observatory from 27 March to 12 April 2019, and a third from 31 Dec 2019 to 4 Jan 2020. Since ambient $PM_{2.5}$ concentrations in Metro Manila drastically increase to unhealthy levels during New Year's Eve celebrations, the final colocation experiment was performed during this period to validate the detection limit of the AS-LUNG samplers for high $PM_{2.5}$ concentrations. $PM_{2.5}$ measurements from the AS-LUNG sensors were referenced against values measured by a Met One Instruments BAM 1020 beta attenuation mass monitor, which measures ambient particulate mass concentration levels using beta ray attenuation. Two of the AS-LUNG samplers came factory-calibrated (sensors 1 and 5), while the rest were not calibrated. The experimental setup is shown in Fig. S2.

Since the BAM records hourly concentrations, 15-s data from the AS-LUNG sensors were interpolated into hourly averages for the regression. Using values computed from the regression, simple linear adjustments were applied to the raw $PM_{2.5}$ data measured by each sensor following Eq S1:

$$y = mx + b \qquad \text{(Eq. S1)}$$

where y is the corrected $PM_{2.5}$ value, x is the value measured by the corresponding AS-LUNG sensor, and m and b are coefficients from the linear regression. Fig. S3 shows the results of the collocation experiment for AS-LUNG sensor 1 (x-axis) referenced against measurements by the BAM (y-axis). Regression values used to calibrate each sensor are provided in Table S1. In general, the AS-LUNG devices overestimated the $PM_{2.5}$ concentrations obtained by the BAM by about 40%.

Figure S2. Collocation experiment of the AS-LUNG sensors (on table) at the Manila Observatory, with the beta-attenuation monitor (BAM) behind.

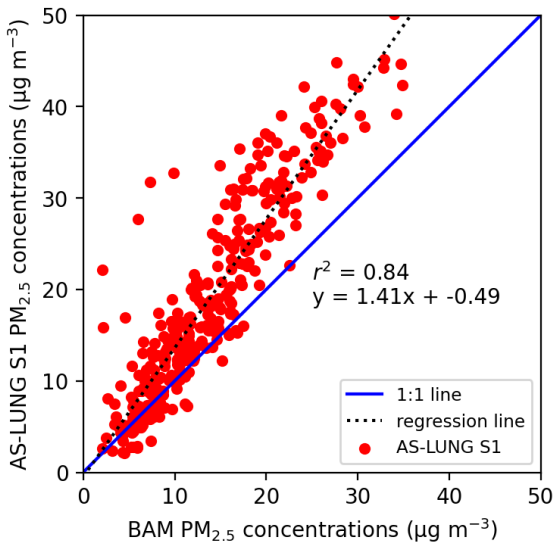

Figure S3. Scatter plot shows the observed relationship between an AS-LUNG sensor (Sensor 1) measurements against those from the Beta Attenuation Monitor (BAM) during the 16-day collocation experiments at the Manila Observatory site from 27 March to 12 April 2019.

Table S1. Summary of calibration equations for seven AS-LUNG sensors obtained from the MO collocation experiment.

Sensor #	Regression Statistics					N (number of samples)
	Slope (m)	±Δm	Intercept (b)	±Δb	Correlation (R^2)	
1	1.41	0.03	-0.49	0.53	0.84	361
2	1.43	0.03	-0.26	0.54	0.84	379
3	1.47	0.04	0.99	0.55	0.84	358
4	1.49	0.04	0.44	0.55	0.84	365
5	1.40	0.03	-0.43	0.52	0.84	373
6	1.47	0.04	0.46	0.55	0.84	372
7	1.5	0.03	0.66	0.54	0.85	368