

Poster Guidance

Please use the template below for arranging your poster. How sections are arranged within the poster is up to the PI's discretion. However, your post must address the following:

a)Project Challenge - *describe the challenge/issue being addressed by this project*

b)Intellectual Merit – *describe the vision of the project to address the identified challenges and the technical and social advancements resulting from its research and the impact on specific application domains (e.g., transportation, community planning, and health and wellbeing etc.)*

c)Major Outcomes/Progress - *describe project activities and research outcomes to date*

d)Broader Impact – *describe the immediate, as well as long-term impact on society – who will care and who benefits from the outcomes?*

e)Future Goals - *planned activities and expected outcomes in the coming year*

This scale of this template is adjusted for a 48”(W) x 36” (H) poster size.

Text should be easy to read and follow. Be mindful of margins.

Use of images/graphics is strongly encouraged. Use high-resolution images.

Please use the fonts and colors used within the template for headers and text.

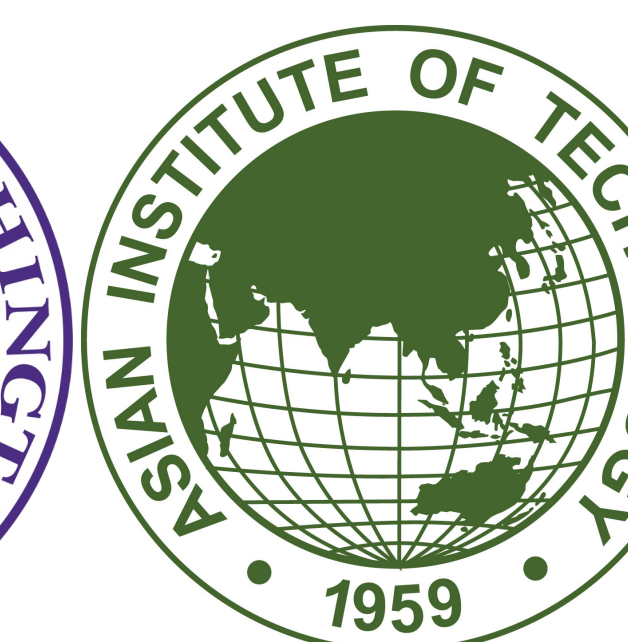
PI's should print and bring their posters to the PI meeting. **[A digital version of the poster should be submitted at this link by Tuesday, February 6th.](#)**

Reach out to vsharma@nsf.gov and jkravetz@nsf.gov if you have questions.

Building a Partnership with Grab for Cross-ASEAN Regional

Urban Insights Kurtis Heimerl, University of Washington

ASEAN-EAGER FY 2020 #2025022



Overview

This project kickstarted a new collaborative research agenda to explore key development, data science, smart cities, and human wellness agendas in ASEAN through the lens of motorcycle taxi (MT) drivers. Partnered with AIT and CMRU, we conducted a quantitative study with a local MT company and follow-up qualitative work to understand driver concerns.

Background

Motorcycle Taxis are the preeminent transportation method in South-East Asia, with Thailand being a country with among the highest rates of motorcycle ownership in the world.

Concurrently, Thailand has some of the worst air quality in the world. As such, MT Drivers are one of the most at-risk “front-line” populations in the ongoing climate crisis.

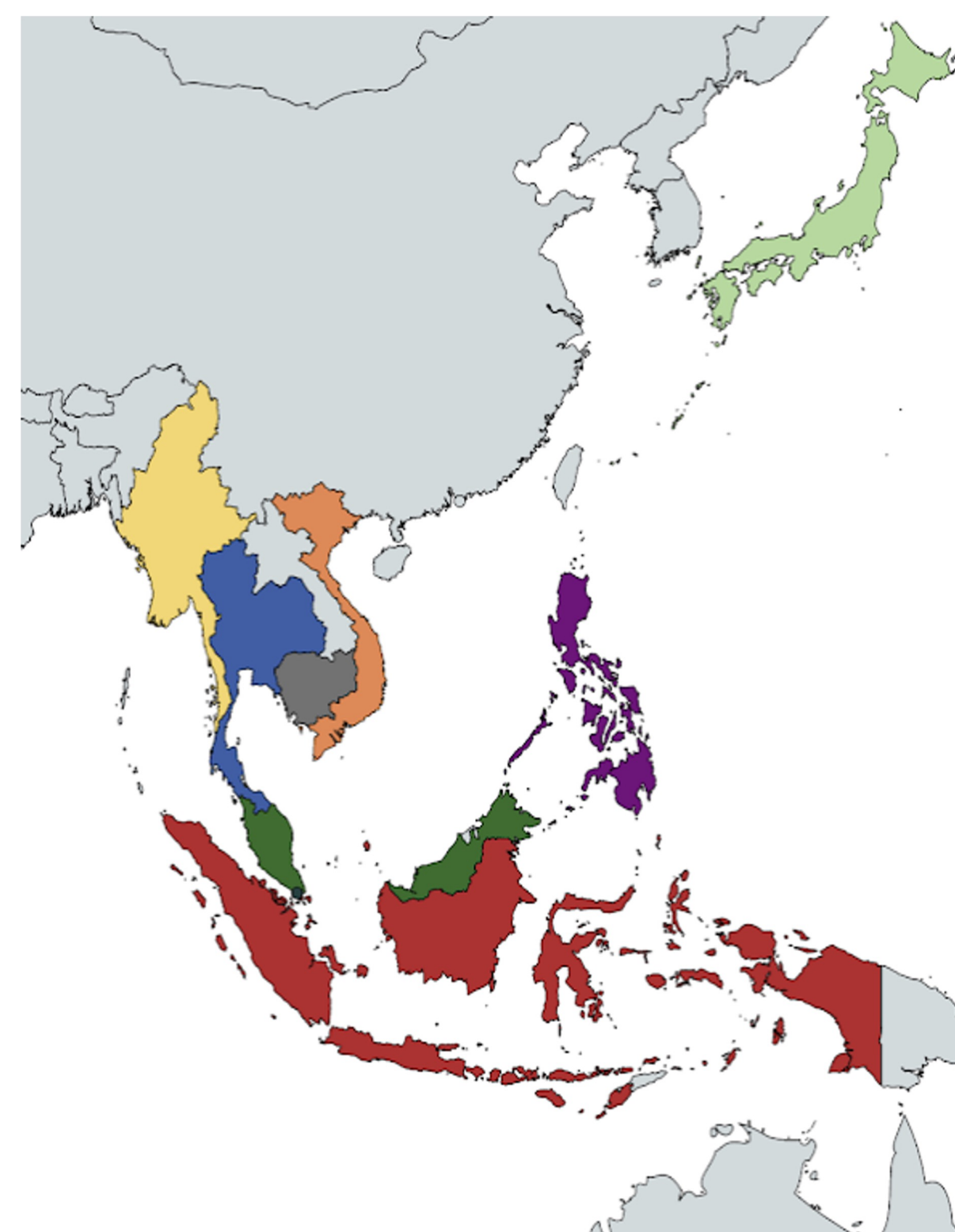
How are Thai motorcycle taxi drivers and passengers affected by air pollution?

Intellectual Merit:

How does air quality affect platform drivers?

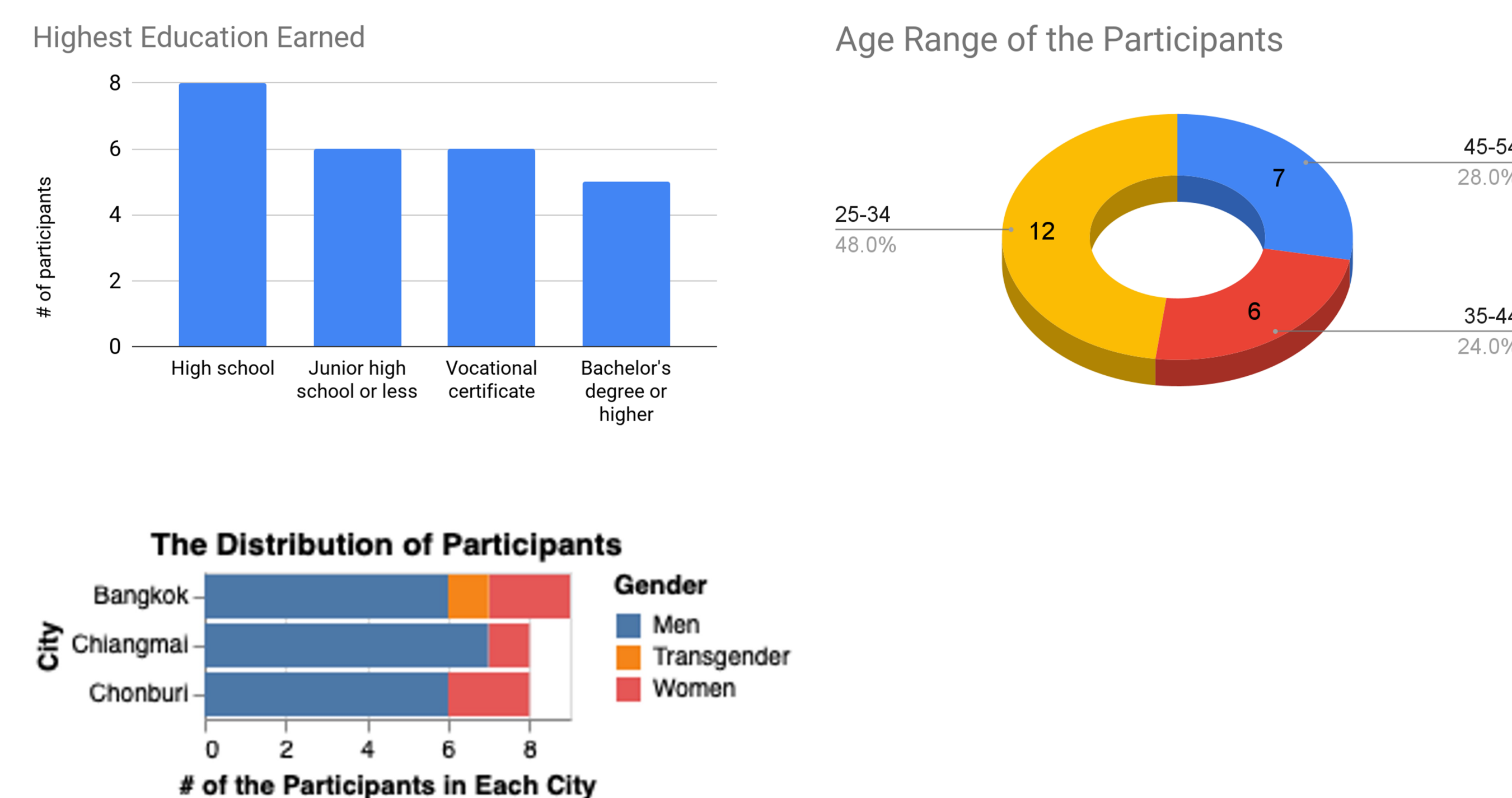
How can we improve drivers’ resilience to air pollution?

What factors most influence driver behavior (and how can we leverage those to improve outcomes?)?



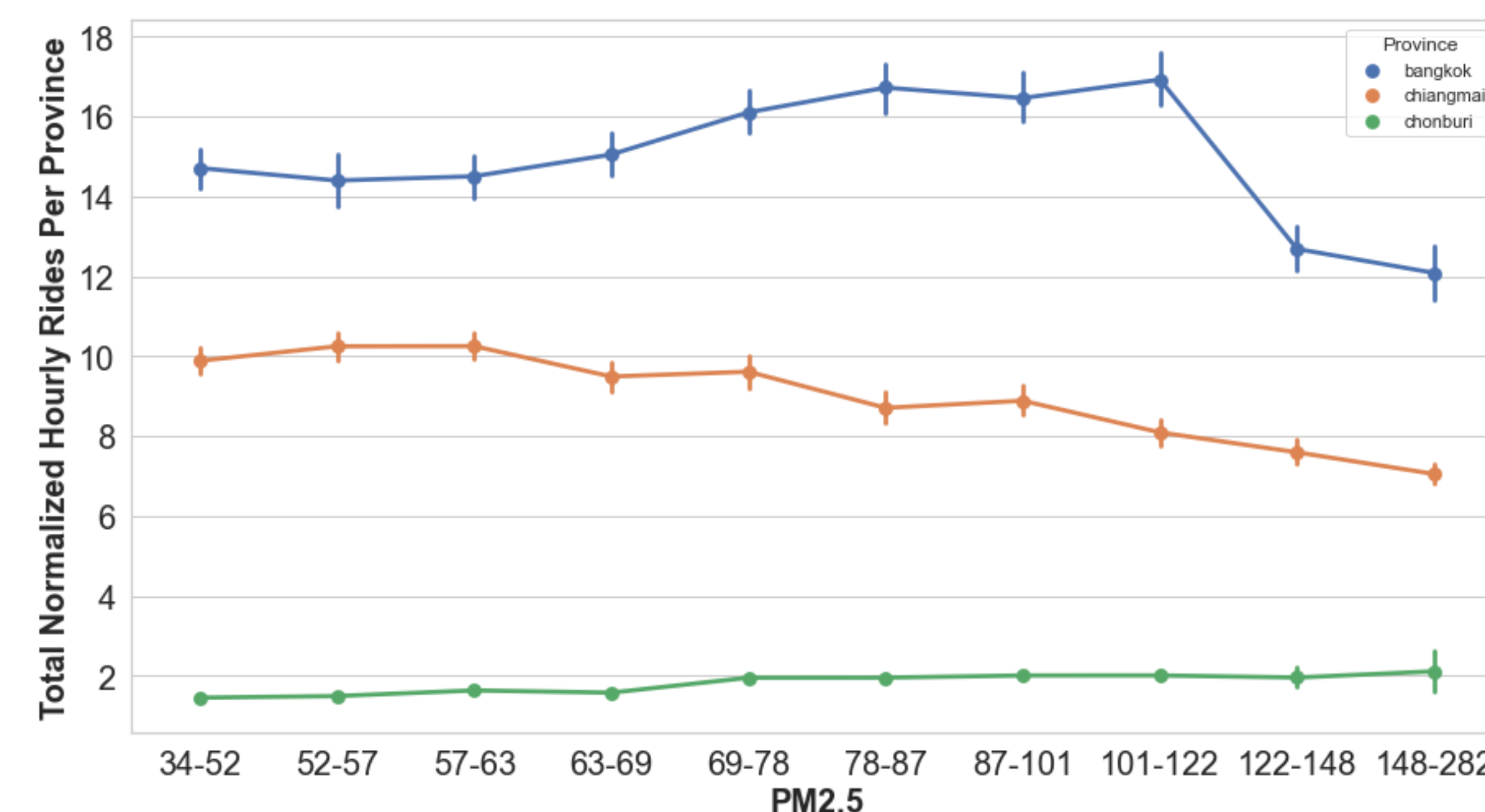
2022 Study

Design: Mixed methods with data from local ridesharing company as well as 25 interviews of local drivers and passengers in three high-traffic, high-pollution cities: Bangkok, Chiang-Mai, Chonburi.



Results: Drivers **do not** change their behavior when pollution increases (quantitative) and they have many reasons for this, despite ostensibly having the agency to choose when to work

- Concern about the algorithm deprioritizing them
- Dependency on income
- Customer complaints
- **Many others, see CSCW 2024 Paper**



Follow Up:

Design: Working with AIT/CMRU to measure long-term individual exposure among drivers with novel helmet-mounted air quality sensor. Deployed in Bangkok and Chiang-Mai among 10 drivers over one year (Nov '23 to Nov '24).



Initial Results: Sensors have been deployed and are being operated by AIT with CMRU supporting.

- Drivers drive a lot: We see a few with over 12 hour days and no days off. The pressure is real.
- There is significant exposure and its worse than the regional sensors.
- A lot more to come!

	BKK					CMI				
	Hazemon-5019	Hazemon-5044	Hazemon-5081	Hazemon-5101	Hazemon-5112	Hazemon-5082	Hazemon-5085	Hazemon-5097	Hazemon-5104	Hazemon-5105
Total UP time	17465.55948	7018.447906	13609.43607	12835.57451	20682.82264	15822.41879	6680.594014	14960.94576	11845.73733	8873.822437
Average Up time/day	623.7699813	542.3812841	523.4398487	534.8156048	738.6722372	659.2674496	247.4294079	650.4759026	473.8294931	341.300863
Max	742.1856896	768.5011971	810.0120044	910.1392958	929.5895293	762.2057407	673.7044023	796.6314357	747.7168641	731.0029957
Min	220.4376755	403.7417546	48.38191092	24.58398495	416.5582548	327.0497475	3.656301233	255.1118322	282.3611816	14.6164591
Working Days	28	12	26	24	28	24	27	23	25	26
Day Off	0	2	2	4	0	4	1	5	3	2
Down Count	6	14	75	43	182	7	62	8	4	91

