Let the Data Speak for Itself: Developing a New Data Dashboard for a Hanoi Transport Survey

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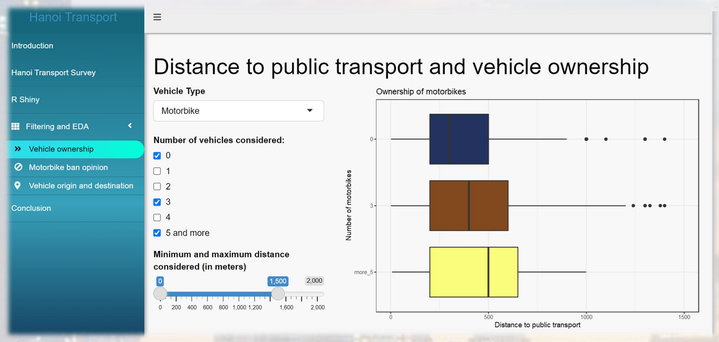
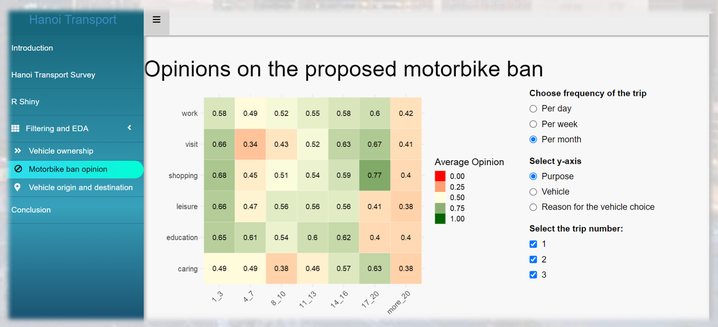
Hanoi Transport Survey

- Hanoi : 8 million people, 89% of household own at least one motorbike.
- Main problems are traffic congestion, air pollution and noise pollution.
- **Urban Transport Modelling for Sustainable Well-Being in Hanoi** project team developed a bespoke survey with responses from **26,000** households.
- The survey questions consist of three parts:
  - Demographics: age, gender, residency status, occupation.
  - Trip data: origin/destination, purpose, vehicle, frequency.
  - Attitudes and opinions: transport modes, motorbike ban, vehicle alternative.
- The dashboard is a front-end tool that will be used to communicate findings of the survey to the policy makers.

Filtering and Exploratory Data Analysis

- Distance to the nearest stop of public transport is positively correlated with the number of motorbikes owned per household.
- This relationship wanes for larger distances to public transport (roughly above 1.5 km).
- The contingency table is used to explore the opinions on the motorbike ban for purpose/vehicle /reason and different trip frequencies.
- Preliminary results:
  - Short-frequency trip makers tend to agree to the motorbike ban and vice versa.
  - A growing number of car users agrees to the ban.



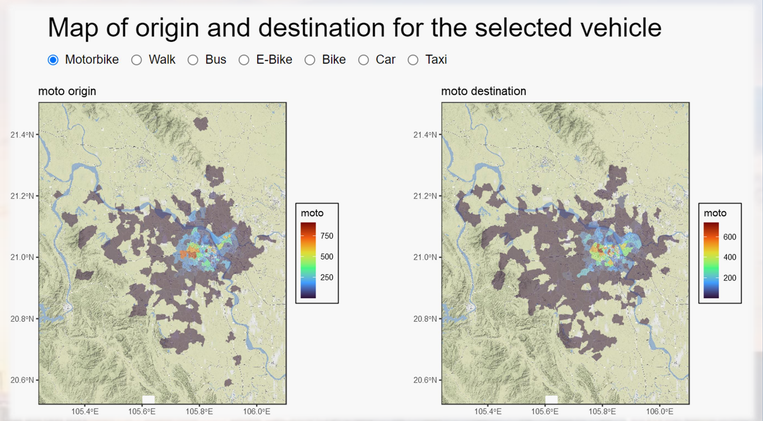


Methods: Shiny

- Shiny and related R packages provide a framework for creating web applications that use reactive programming.
- Reactivity means that interactive widgets such as radio buttons, checkboxes, action buttons and drop-down menus update the app output in real time.
- The Shiny application code consists of two fundamental parts: user interface (what the user sees) and server (how the app works).

Geospatial Data

- A similar filtering approach is used for mapping counts of origins and destinations per polygon commune.
- This framework will be used to apply a transport model to investigate the impact of potential policies such as the motorbike ban on the traffic distribution among different modes of transport.



Next steps

- Include input from the project team.
- Provide documentation of the app package structure.
- Bring the dashboard to production and share with policy makers in Vietnam.

Acknowledgments

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