

HOW DOES PUBLIC SUPPORT FOR SUSTAINABLE TRANSPORTATION POLICIES VARY ACROSS COUNTRY

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Motivation

As the world shapes a global agenda to mitigate climate change, national governments are looking to define and build support for sustainable development strategies for the transportation sector. In this international landscape, countries will look to learn from one another, but identifying peer countries for this learning can prove a challenge. In this study, we measure public support for transportation policies from an international survey and present a clustering framework that uses similarity of public support as a new measure of cultural distance that goes beyond development status and geographical adjacency to help identify peer countries for sustainable transportation policy learning.

Data

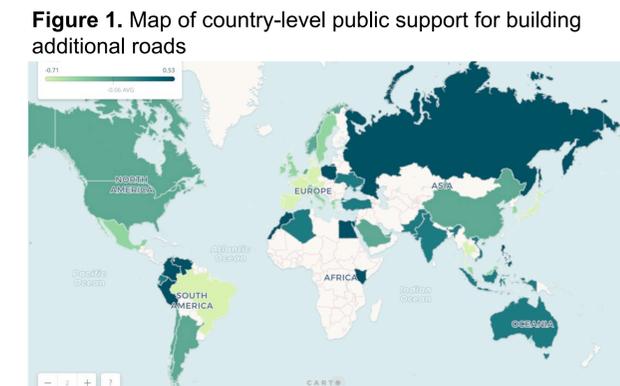
- Mobile-phone-based international mobility survey of 41,932 individuals in 51 countries deployed by Dalia Research from December 2016 to February 2017
- “If the government decides to improve overall transportation conditions in your location, which of the following policies would you support? Please select up to three” from:
 1. Build additional roads
 2. Discourage the use of private automobiles in the city center
 3. Expanding bike lanes
 4. Expand public transportation services (bus/train)
 5. Improve pedestrian facilities (sidewalks, street crossings etc.)
 6. Introduce car-free pedestrian zones in the city center
 7. Lower public transportation (PT) fares
 8. Prioritize public bus lanes and/or BRT
 9. Provide clean energy-based public transportation options
 10. Provide more parking spaces
 11. Subsidize clean energy vehicles

Method

- Estimated single-level hybrid discrete choice models of public support for 11 different transportation policies (0/1)
 - Controlled for individual socio-demographics, city size, and primary travel mode
 - Included binary indicators for each country where the respondents live
- Unlike raw averages, our estimated country coefficients capture country-level differences of policy support after controlling for individual-level factors, such as differences in the sociodemographic composition of countries
- Country coefficients (country ranking scores) were mapped, correlated with national indicators of economic activity and motorization, and clustered to identify groups of countries that have similar patterns of public support for transportation policies

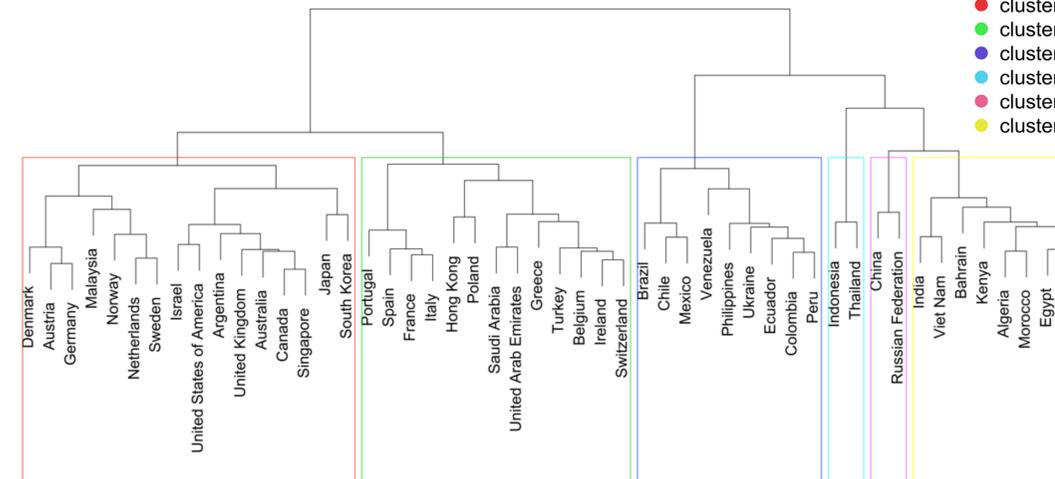
Results: Descriptive

- Studying correlations of country coefficients with national indicators of economic and urban development as well as motorization, we find that our policy support variables capture something different from (but related to) traditional development indicators
- The highest levels of public support for a given policy appears to come in countries that have not yet seen significant investment in the target infrastructure or service:
 - Developed countries that already have abundant road networks as well as relatively high levels of national car ownership show moderate- to low-support for building additional roads
 - Developing countries with the lowest GDP per capita show very high public support for additional roads, likely tied to the fact that some areas in these countries still lack basic road infrastructure



Results: Clustering of Country-level Public Policy Support

Figure 2. Agglomerative hierarchical clustering dendrogram of 50 countries based on public support of 11 different transportation policies; 6 clusters highlighted



Conclusions and Policy Implications

- We demonstrate that people in different countries prioritize different transportation policies. This understanding could help policymakers looking to shape a national sustainable transportation strategy that reflects the will of the country and is likely to garner general public support.
- We find that country-level support of transportation policies correlates with national indicators of motorization and economic and urban development, but are distinct from current levels of transportation service or investment. This suggests that considering public support of transportation policies gives a different perspective than considering traditional indicators, helping policymakers understand what the public wants and how they might build public support for new transportation policies.
- Clustering countries based on policy support, we find that countries that are geographically adjacent share similar support across the 11 policies; but pairings far away geographically can be clustered together. This suggests that public opinion may be a new framework of cultural distance for identifying peer countries for collaborative sustainable transportation policy learning.

Figure 3. Radar plot of average policy support by country clusters

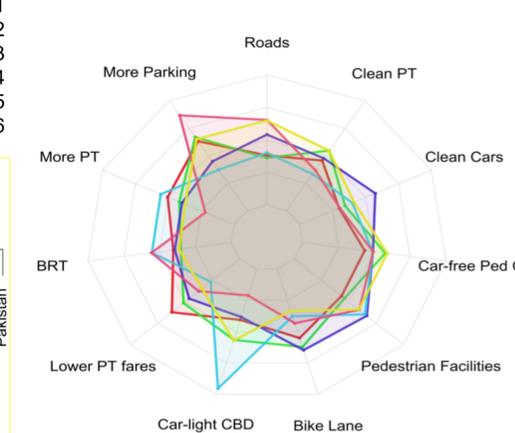


Table 1: Summary of results for the 6 country clusters identified

Countries Included (Figure 2)	Characteristics of Public Policy Support (Figure 3)
1 Northern Europe, U.S., Canada, Australia, Israel, Argentina, Japan, S. Korea, Singapore, and Malaysia	More public prioritization of PT and less prioritization of roads and pedestrian policies
2 Southern Europe, the Middle East, and Hong Kong	Prioritizing the provision of bike lanes and car-light and car-free city centers
3 Most Latin American countries, Philippines, and Ukraine	Promoting non-motorized transport and subsidizing clean-energy vehicles
4 Indonesia and Thailand	High support for policies that discourage the use of personal cars in the city center
5 China and Russia	Very high public support for additional parking and roads
6 Other countries in Southeast Asia and in Africa	Moderate-to-high support for more parking and roads; relatively high support for both car-restrictions and car-free zones in the city center