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The University of Texas at Austin

THE GEOGRAPHY AND EQUITY OF CROWDSOURCED PUBLIC PARTICIPATION FOR ACTIVE TRANSPORTATION PLANNING

Transportation Research Board Event 1322, What Crowdsourcing and Social Media Tell Us About Public Engagement: Recent Research

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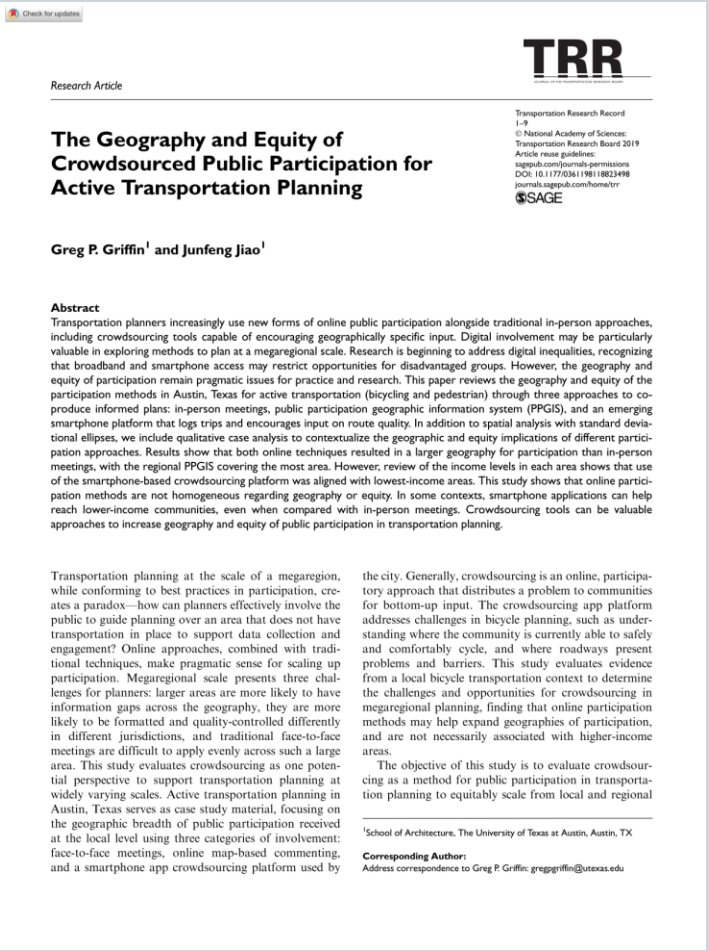

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The Geography and Equity of Crowdsourced Public Participation for Active Transportation Planning

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Abstract

Transportation planners increasingly use new forms of online public participation alongside traditional in-person approaches, including crowdsourcing tools capable of encouraging geographically specific input. Digital involvement may be particularly valuable in exploring methods to plan at a megaregional scale. Research is beginning to address digital inequalities, recognizing that broadband and smartphone access may restrict opportunities for disadvantaged groups. However, the geography and equity of participation remain pragmatic issues for practice and research. This paper reviews the geography and equity of the participation methods in Austin, Texas for active transportation (bicycling and pedestrian) through three approaches to co-produce informed plans: in-person meetings, public participation geographic information system (PPGIS), and an emerging smartphone platform that logs trips and encourages input on route quality. In addition to spatial analysis with standard deviational ellipses, we include qualitative case analysis to contextualize the geographic and equity implications of different participation approaches. Results show that both online techniques resulted in a larger geography for participation than in-person meetings, with the regional PPGIS covering the most area. However, review of the income levels in each area shows that use of the smartphone-based crowdsourcing platform was aligned with lowest-income areas. This study shows that online participation methods are not homogeneous regarding geography or equity. In some contexts, smartphone applications can help reach lower-income communities, even when compared with in-person meetings. Crowdsourcing tools can be valuable approaches to increase geography and equity of public participation in transportation planning.

Transportation planning at the scale of a megaregion, while conforming to best practices in participation, creates a paradox—how can planners effectively involve the public to guide planning over an area that does not have transportation in place to support data collection and engagement? Online approaches, combined with traditional techniques, make pragmatic sense for scaling up participation. Megaregional scale presents three challenges for planners: larger areas are more likely to have information gaps across the geography, they are more likely to be formatted and quality-controlled differently in different jurisdictions, and traditional face-to-face meetings are difficult to apply evenly across such a large area. This study evaluates crowdsourcing as one potential perspective to support transportation planning at widely varying scales. Active transportation planning in Austin, Texas serves as case study material, focusing on the geographic breadth of public participation received at the local level using three categories of involvement: face-to-face meetings, online map-based commenting, and a smartphone app crowdsourcing platform used by the city. Generally, crowdsourcing is an online, participatory approach that distributes a problem to communities for bottom-up input. The crowdsourcing app platform addresses challenges in bicycle planning, such as understanding where the community is currently able to safely and comfortably cycle, and where roadways present problems and barriers. This study evaluates evidence from a local bicycle transportation context to determine the challenges and opportunities for crowdsourcing in megaregional planning, finding that online participation methods may help expand geographies of participation, and are not necessarily associated with higher-income areas.

The objective of this study is to evaluate crowdsourcing as a method for public participation in transportation planning to equitably scale from local and regional

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Overview

1. Research Questions
2. Participation Data
3. Spatial Analysis
4. Interview Results
5. Implications for Megaregional Planning

Research Questions

1. What are the geographic differences between 3 types of engagement in Austin (TX)?
2. Were there equity differences by residential geography?

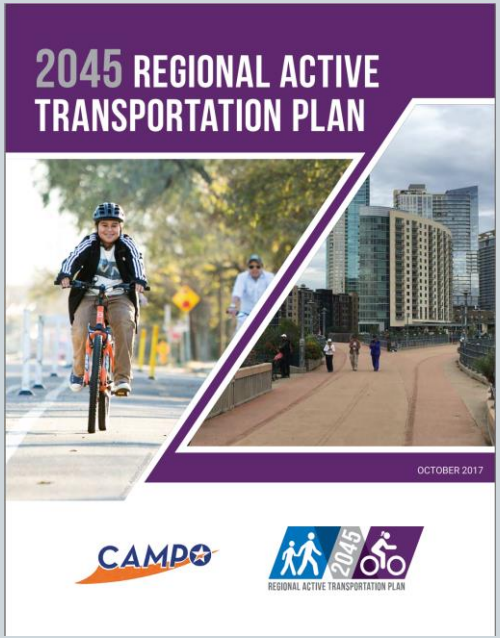
Participation Data: In-Person Meetings

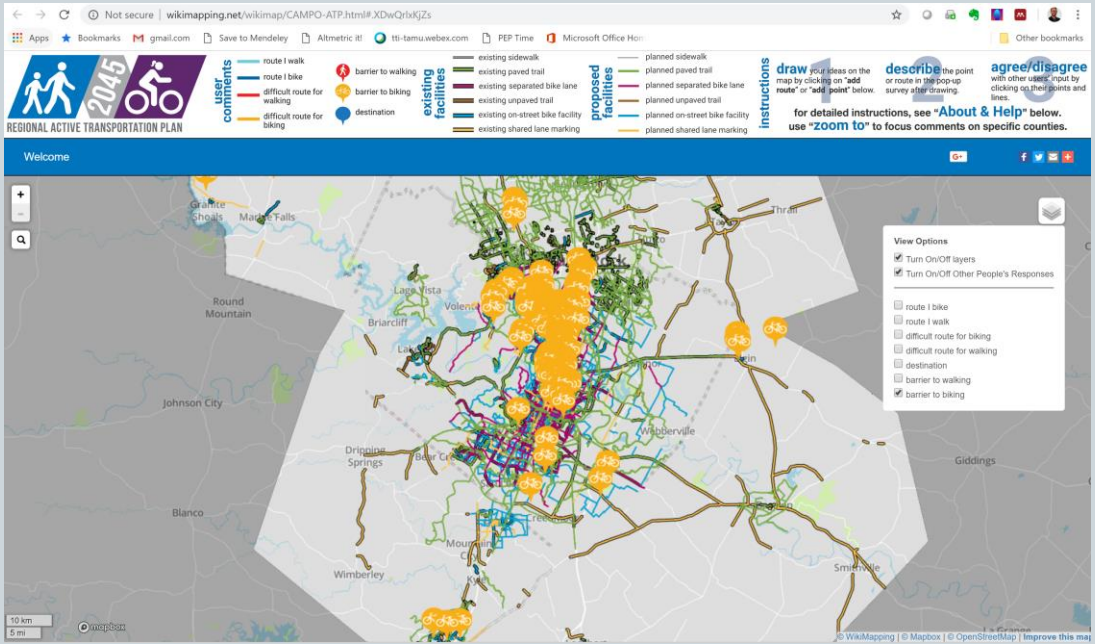
Public Meetings for the Development of the 2014 Bicycle Master Plan

DATE	LOCATION	TIME
11/12/13	St. David's Episcopal Church, 301 E. 8th Street	5:30-8:30 p.m.
11/13/13	Lanier High School, 1201 Payton Gin Road	5:30-8:30 p.m.
11/14/13	First Evangelical Free Church, 4220 Monterey Oaks Boulevard	5:30-8:30 p.m.
2/1/14	Millennium Youth Complex, 1156 Hargrave Street	1:30-3:30 p.m.
2/22/14	Rosewood Recreation Center, 2300 Rosewood Avenue	10:00 a.m.-12:00 p.m.
2/22/14	African American Cultural Heritage Festival, Huston-Tillotson, 900 Chicon Street	12:30-4:00 p.m.
4/2/14	One Texas Center, 505 Barton Springs Road	5:30-7:30 p.m.

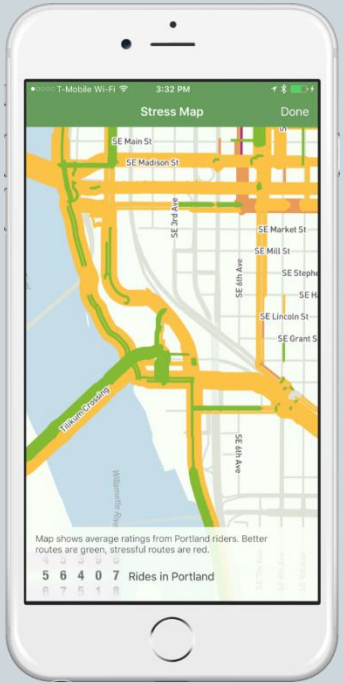
Participation Data: PPGIS

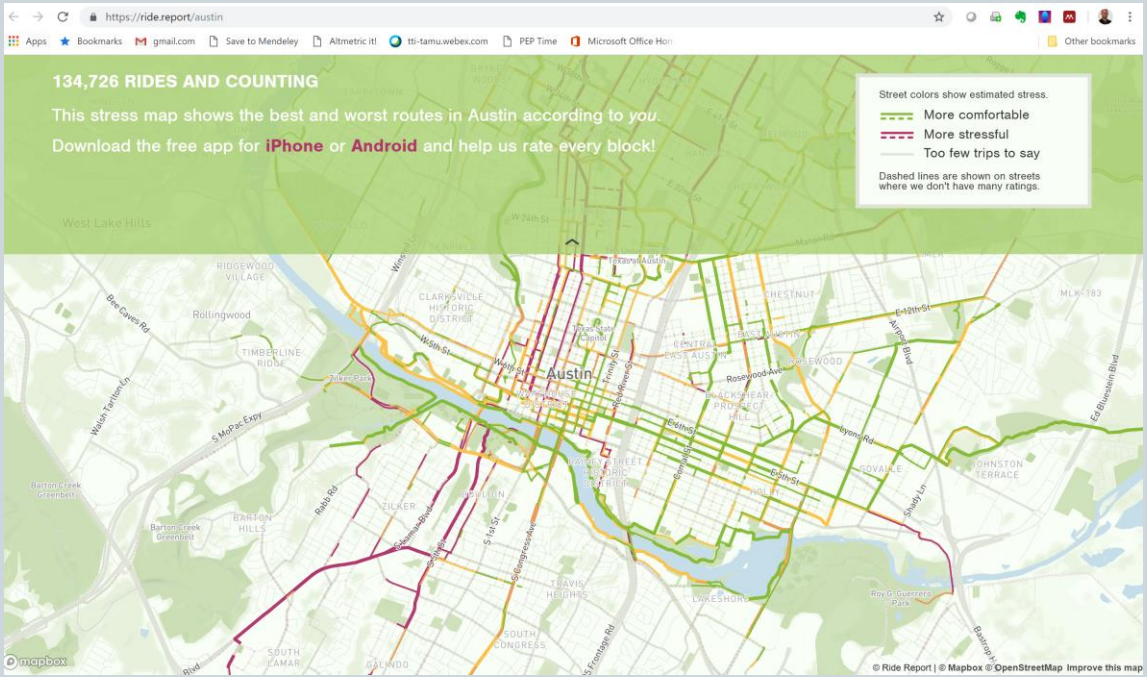
(public participation geographic information system)



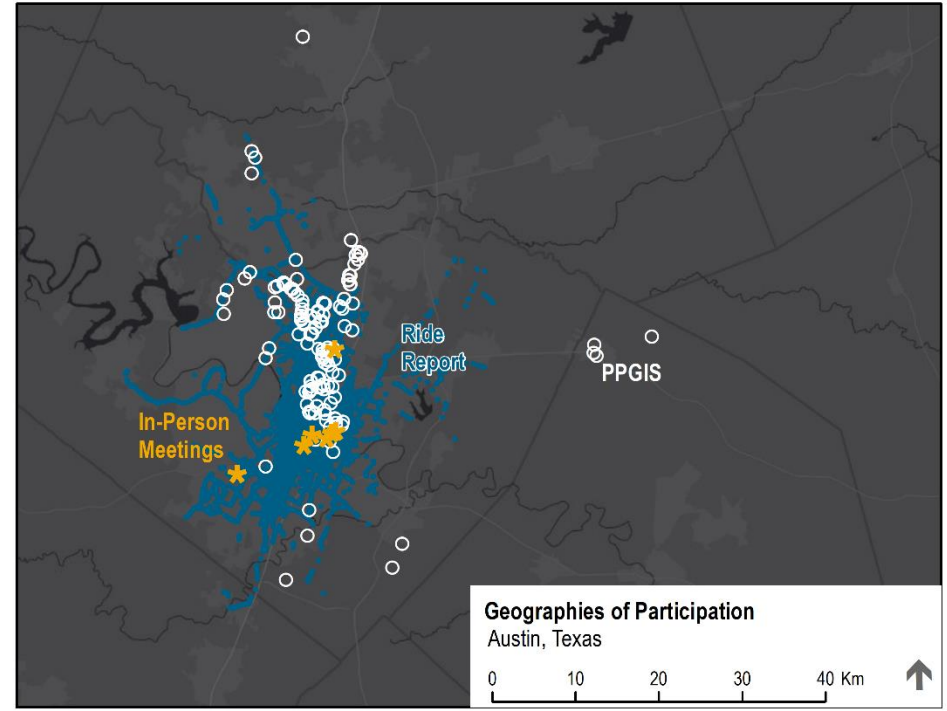


Participation Data:
Bicycling Smartphone App in Austin



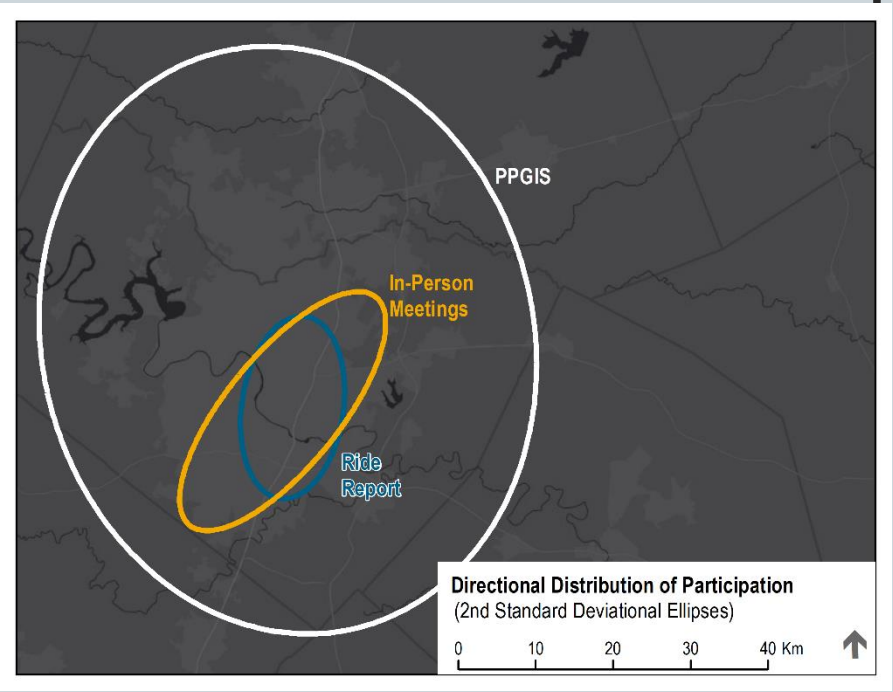


Participation Data: Geographies



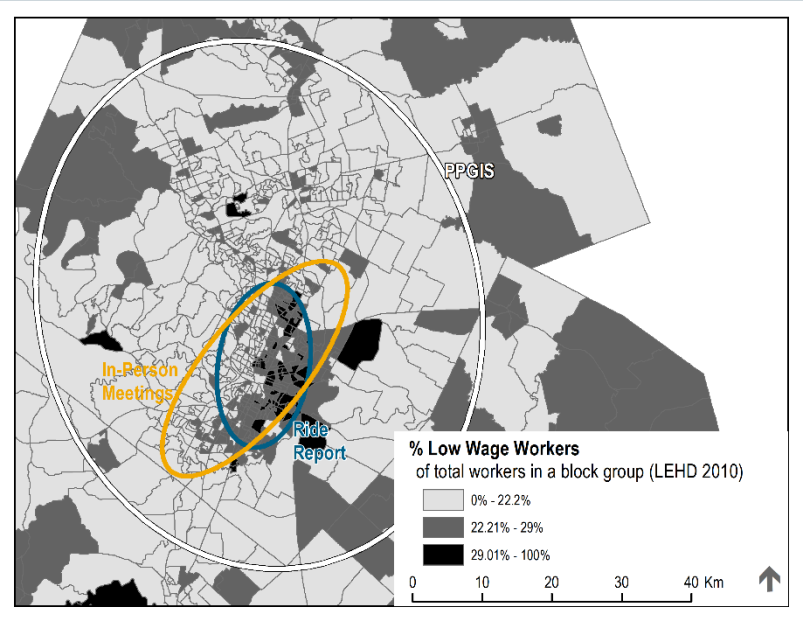
	Count	Participants
In-person	7	133
PPGIS	143	358
Bicycle App	23,693	1,234

Spatial Analysis: Standard Deviational Ellipse



	Sq. Km.	Rotation
In-person	435	40
PPGIS	3,802	168
Bicycle App	244	9

Equity of Participation: Low-wage workers as % of total workers in a block group (home location)



	Mean %
In-person	24
PPGIS	22
Bicycle App	25
MSA	23

Interview Results

- “Bias should be assumed until proven otherwise.”
- Representation requires access + knowledge + willingness
- Austin staff take tablets to in-person meetings, bridging methods.

Interview Results

Crowdsourcing is “overall positive”, but “requires transportation professional[s to] have a **strong understanding of the limitations as to the crowd they are sourcing** to make sure that those populations that lack access to tools that crowdsourcing relies on are **not underrepresented** in the decisions.”

Implications for Megaregions: Geographic Scale

- Crowdsourcing methods may be needed to reach vast areas

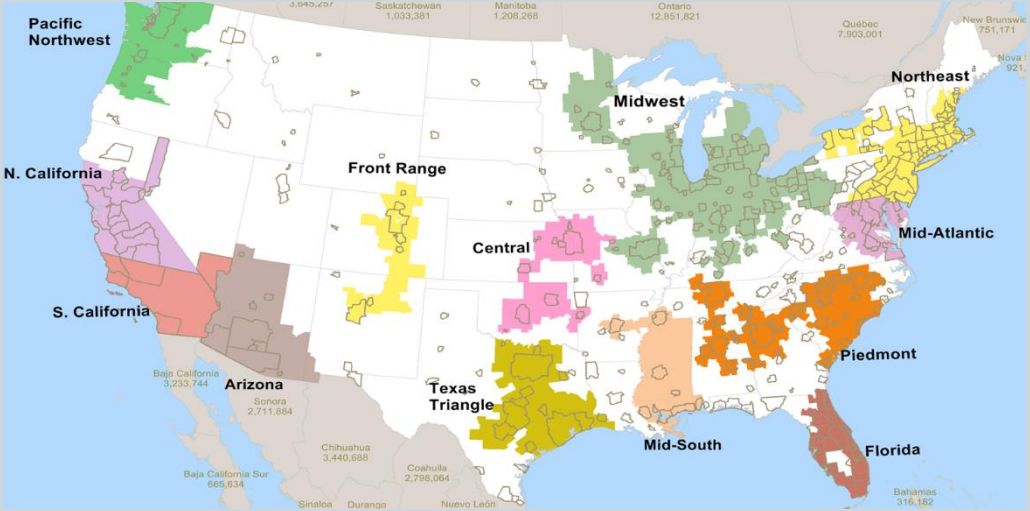
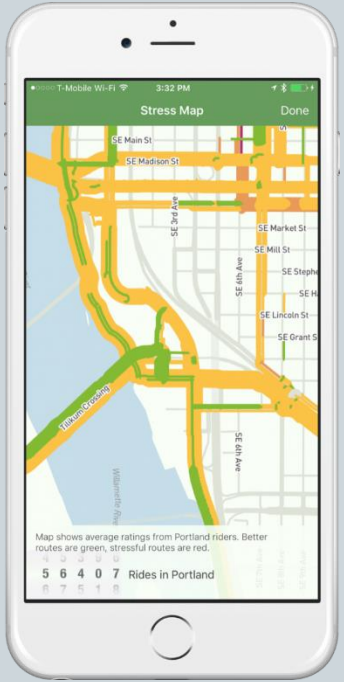


Image: FHWA

Implications for Megaregions: Co-production

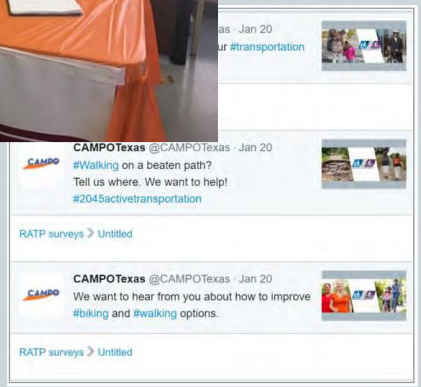
- people can contribute knowledge about specific topics, doing some of the *planning* work



Implications for Megaregions: Multi-method participation

- All-of-the-above approach requires real resources
- Plan, budget, and advocate…then implement!

Image: CAMPO



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