Public Opinion of Bike Lanes: New York City

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Overview

- Motivation and Purpose
- Literature and Background
- Data and Methods
- Results and Discussion
Motivation and Purpose

- Relevance for policymakers
- Available ICPSR dataset
- **No literature** on this topic; first multivariate analysis
- Contentious nature of the issue in NYC
- Research questions:
  - Which characteristics relate to support of bike lanes?
  - Do characteristics associated with bicycle ridership also predict support of bike lanes?
Video
The Case of New York

- About 600 miles of bike lanes
- 58% increase in cycling since 2008
- Progressive for U.S.
- But, notoriously dangerous
Presenting the Literature

- Unstudied topic ➔ Many plausible variables
- Impact and relevance of bike lanes
  - Environmental policy
  - “Last mile” trips
  - Safety
- Characteristics that affect cycling
Amount of space required to transport the same number of passengers by car, bus, or bicycle.

(Des Moines, Iowa - August 2010)
Ridership Demographics

- Cycle more to commute:
  - Men (e.g. Garrard et al. 2006)
  - Young people (e.g. Moudon et al. 2005)
  - Lower income (Plaut 2005)
  - Hispanic (U.S. DOT 2008)
  - Students (Buehler & Pucher 2012)
  - High density, mixed-use zoning (Buehler & Pucher 2012)
  - Temporarily unemployed, part-time workers (Ryley 2006)
- Safety considerations (Tin Tin et al. 2010)
Data and Methods

- 2012 CBS and NY Times Survey
- 1,026 variables, 97 questions
- Demographic, socioeconomic, attitudinal data
- Bike lanes: good or bad idea?
  - 65% good; 28% bad; 7% don’t know or N/A
- Multiple logistic regression (STATA)
  - 19 variables + 3 interaction terms
Eight demographic variables significant at $\alpha = .05$ (out of 19)

- Income (-)
- Black (+)
- Bicycle Access (+)
- Young (+)
- Brooklyn (-)
- Queens (-)
- Staten Island (-)
- Time in NYC (-)

Three significant interaction terms

- Hispanic × Brooklyn (+)
- Young × Married (-)
- Education × Black (-)
Example: Elizabeth (78%)

- White, college-educated female
- Earns $45,000 yearly, and is 48 years old.
- Single, employed, lives in Manhattan,
- Has lived in NYC for five years
- Does not own a bike.

Changes (cp)

- 24 years instead* +14% 92%
- Black instead** +1% 79%
- Makes $25,000 instead +2% 80%
- Makes $110,000 instead -8% 70%
- Owns a bicycle +6% 84%
- Lived in NYC for 30 years -5% 73%

*24 years old and not married (avoid interaction)
**Black variable interacts with education; higher education level decreases magnitude of this change
Example Case: Borough

- Default = Manhattan
- Follows trends in density and car ownership
- Staten Island also more conservative

Source: Wikimedia; *Lives in Brooklyn and is not Hispanic (interaction)
Non-Causal, Associated Variables

- Correlation, not necessarily causation
- Magnitudes determined using “Elizabeth”
  - Approval of Mayor Bloomberg vs. disapproval: +17%
  - Liberal vs. conservative: +12%
  - Read “a lot” about bike share vs. “not much”: -6%
  - “Very likely” to use bike share vs. “not likely”: +29%
  - Cycled in the last month vs. not: +10%
Change in Support (Default Value in Parentheses; Interactions*)

- Staten (Manhattan)
- Brooklyn (Manhattan)
- Conservative (Liberal)
- Queens (Manhattan)
- Makes $110,000 ($45,000)
- Crit Bik: Read a lot” (not much)
- 24 & married (48 & single)
- Lived in NYC for 30 yrs. (5 yrs.)
- Black (white)
- Makes $25,000 ($45,000)
- Acquires a bicycle
- "Somewhat likely" bike share (not likely)
- Black (White) & only H.S. (college)
- 24 years old (48)
- Approved of Bloomberg (Did not approve)
- Brooklyn (Manhattan) & Hispanic (white)
- "Very likely" bike share (not likely)
What increases support?

- Traits that increase support:
  - Young (not married)
  - Lower income
  - Denser neighborhood
  - Neighborhood with fewer cars
  - Having a bicycle
  - Living in NYC for less time
  - Black (if black, less educated)
  - Hispanic and living in Brooklyn

- Associated traits that do not predict:
  - Liberal
  - Supporting Bloomberg
  - Planning to use bike share
  - Having read less about bike share
Predictive Ability of Ridership

- Support of Bike Lanes

- Age, density, income, access predict ridership and support of bike lanes
- Education, being male, employment status, being Hispanic predict ridership but not support
- Time lived in New York, being black, and interaction terms predict support but not ridership
- Other factors not measured in this study that predict support
- Being liberal, supporting Bloomberg, and using bike share correlate but don’t necessarily predict support
Ridership does not predict support of bike lanes (only 4 of 11)

Bike lane supporters not necessarily cyclists

People can support policies without benefitting

- Political altruism (Anthony Downs, 1957)

Practical results for policymakers and planners

- Which groups have concerns to be addressed?
- Next: How should policy be altered to fit concerns?

Merits future research – larger scope, cross-sectional comparison


