Walkability in Northeast Philadelphia: Investigating how Walkability Influences Transportation Habits of Residents

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Introduction/Problem

• Walkability: describes an environment that is traversable, compact, physically enticing, and safe (Forsyth, 2015)
  - proxy for better design in urban design
  - more walkable urban environments tend to have less travel related fatalities
• Communities near Roosevelt Boulevard (See Figure 1) are low in walkability in comparison to the rest of Philadelphia
  - In 2013-2019, there were 2,846 crashes, 62 killed, and 81 injured (City of Philadelphia, 2015)
  - carries 39,000 to 90,000 vehicles per day
  - residents on average use public transportation 5% less than the rest of the city

Research Question

How does the walkability of Roosevelt Boulevard in Philadelphia influence the transportation habits of residents in Northeast Philadelphia in 2021?

Operationalizing Terms

Walkability
- EPA Walkability Index and Walk Score
- Rising Sun Ave to Bristol Road along Roosevelt Boulevard
- Transportation habits
  - mean transportation time to work
  - % of residents that use public transportation
  - mean number of cars per household
  - distance from home to nearest public transportation stop

Hypotheses

A higher walkability index will be correlated with a shorter travel time to work.
A higher walkability index will be correlated with greater use of public transportation.
A higher walkability index will be correlated with lesser number of vehicles per household.
A higher walkability index will be correlated with higher population density.

Literature Review

• New Urbanism
  - Advocates for cities with walkable houses and blocks, mixed-use zoning, and easily accessible public spaces (Congress for New Urbanism, 2022).
  - Broadacre City
  - Because of the innovations in technology, people can disperse and live farther from one another while still using modern technology, like phones and cars, to maintain communication (Watson, 2019).
• Benefits of walkability
  - Reduces the impact of cars on the environment, promotes social interaction promotes personal health and wellbeing (Jaekiewicz et. al, 2014).

Research Process and Methodology

Gathering and Cleaning Data from Policy Map

Linear Regression

ArcGIS Pro

Results

Walkability is not significantly correlated with Northeast Philadelphia residents’ transportation to work time (r’s < .09). See Figure 2.

Walkability is significantly correlated with Northeast Philadelphia residents’ use of public transportation to commute to work (r’s < .88). See Figure 3.

Walkability is moderately correlated with Northeast Philadelphia residents’ car ownership per household (r’s < .46). See Figure 4.

Walkability is moderately correlated with Northeast Philadelphia residents’ distance to public transportation (r’s < .38). See Figure 5.

Implications

Policymakers
• Influence policy makers decisions in transportation funding
• Long term: Open up the Roosevelt Boulevard Subway Line
• Short term: Open more bus routes. Increase the frequency of bus routes along Roosevelt Boulevard in the Far Northeast

Community organizers
• Garnering community support for transportation funding
• Influence individuals’ choices

References


