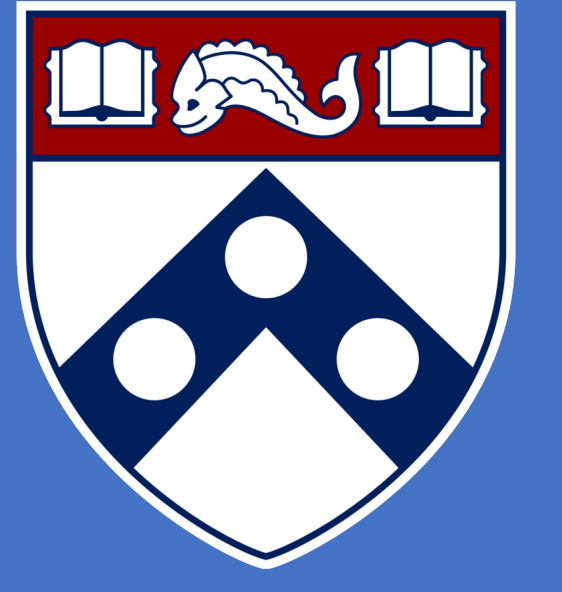
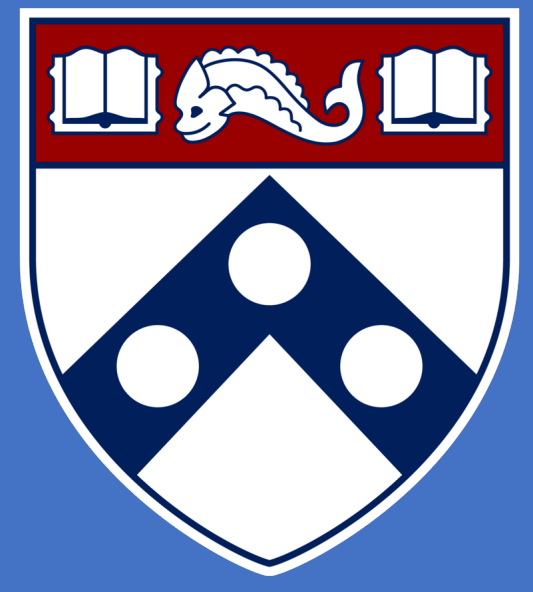


# Walkability in Northeast Philadelphia: Investigating how Walkability Influences Transportation Habits of Residents



Penn IUR 2023 Urban Undergraduate Research Colloquium

Researcher: Talyah Pierce, Undergraduate of the College of Arts and Sciences

Advisor: Jay Arzu, PhD Candidate, City and Regional Planning

## 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
- Northeast Philadelphia**
  - 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 (Jaskiewicz 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

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