

***Neighborhood
Segregation
Transport
Unemployment***

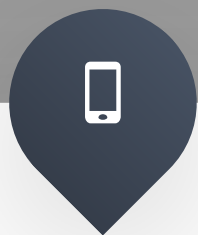
***URBS 435
Mid-Term Report
Yuxi Xiong***



Research Question

- *Understanding the Moderating Effect of Job Accessibility on the Relationship Between Segregation and Unemployment:*
- *An Application of Structural Equation Modelling in Philadelphia*

Content



Research Significance

- Theoretical Base
- City Context
- Conceptual Models



Past Research

- Related Literature
- Main Takeout
- Models and Research Design



Progress and Findings

- Choosing Variables
- Descriptive Statistics
- Policy Implications



Future Research

- Further Thoughts
- Timeline

1.

RESEARCH SIGNIFICANCE

The spatial deprivation for racial minorities in Philadelphia had been a serious problem since the 1850s.



Kain, 1968

Racial segregation affects the distribution of African American's unemployment, reduces job opportunities for inner city dwellers, and the post war segregation aggravates this problem.



Wilson, 1987

The wrenching shifts in the economy from manufacturing to service industries and the large exodus of manufacturing jobs from Northern cities proved especially deleterious for black men.



Grengs, 2010

The car's advantages in job accessibility are so extreme, and the prospects for serving the most disadvantaged people with public transit are so limited.



RESEARCH SIGNIFICANCE

SPATIAL MISMATCH



From spatial mismatch and the truly disadvantaged to model mismatch, how the theory evolves through decades...

Background Info

WHY PHILADELPHIA

Philadelphia is ranked one of the most distressed central cities in the U.S due to the severe rate of unemployment and neighborhood abandonment. Estimation shows that 37.9% of Hispanic population and 30.8% of Black population are struggling in poverty in 2017.

Transport System

The SEPTA (Southeastern Pennsylvania Transportation Authority) provides a generally high transit access rate for Philly dwellers. However, the average car ownership (0.51) is significantly lower than national average (0.85).

High Segregation Rate

The Brown S4 research shows that Philadelphia has the second highest segregation rate among 30 biggest US cities. The geographic indicates that the city is distinguished by 'black counties' and white zones.

Block Group Level Population of Black People in City of Philadelphia, 2020

Data from America Community Survey, Boundary data from OpenDataPhilly, Map created by Yuxi Xiong

GIS ANALYSIS

CENSUS VISUALIZED



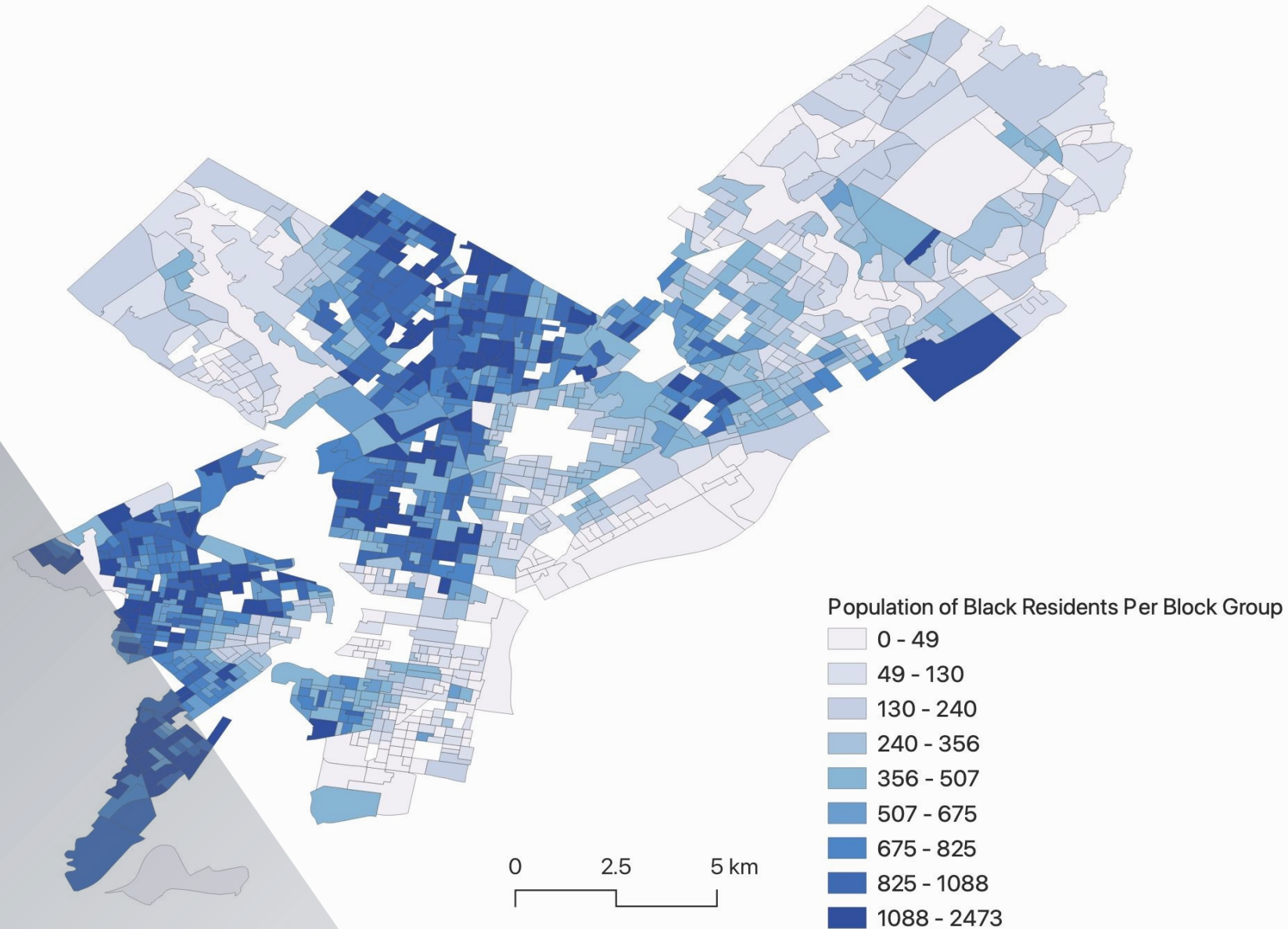
Total Population

The latest 2022 census indicates the total population of Black residents being 42.13% of the total population.



Segregation

The northwest and southwest regions are mostly Black neighborhoods. There's also a block group lying in the east with high density.



Block Group Level Population of Hispanic People in City of Philadelphia, 2020

Data from America Community Survey, Boundary Data from OpenDataPhilly, Map created by Yuxi Xiong

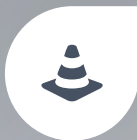
GIS ANALYSIS

CENSUS VISUALIZED



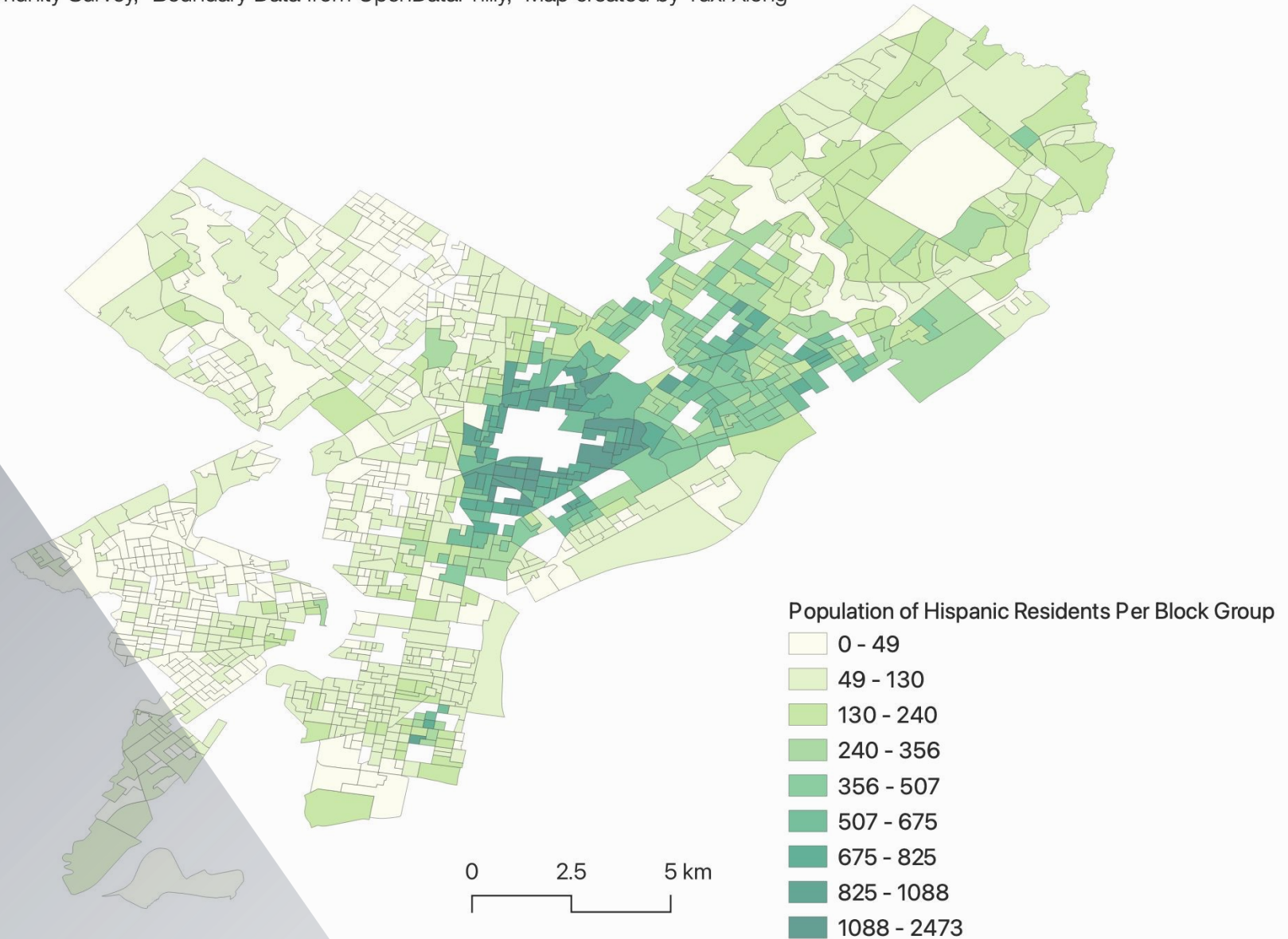
Total Population

The latest 2022 census indicates the total population of Hispanic residents being 14.1% of the total population.

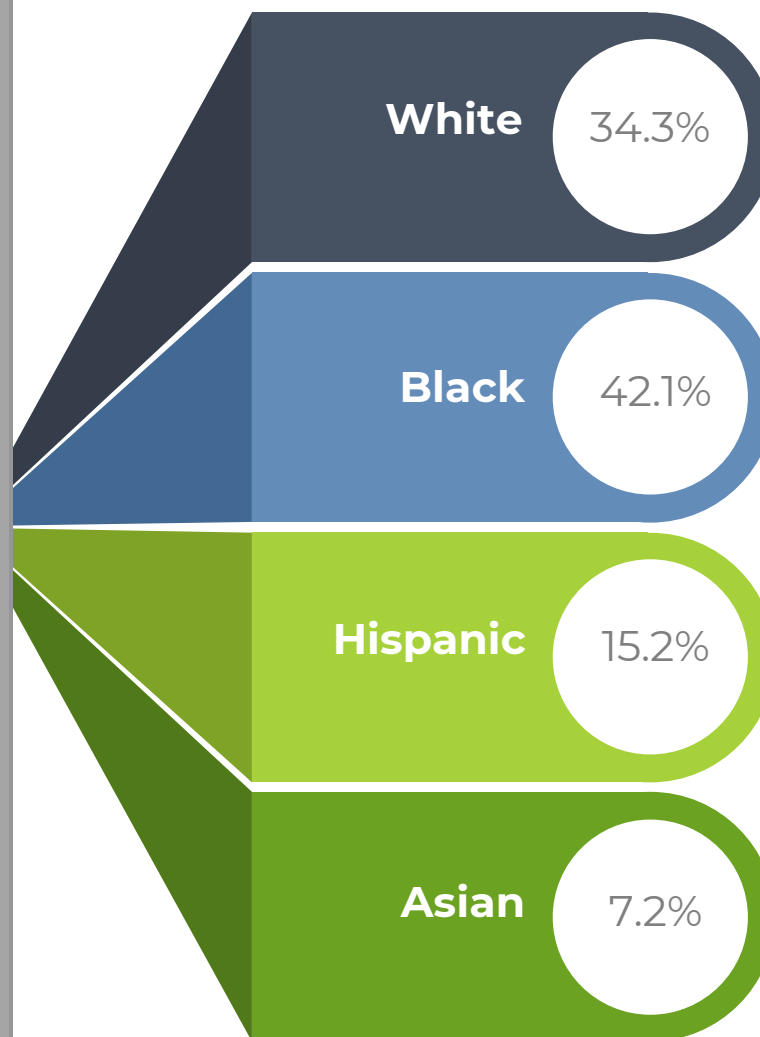


Segregation

Hispanic neighborhoods are concentrated in northern inner city.



DEMOGRAPHICS

POPULATION
AND SOCIO-
ECONOMICAL
OUTCOMES**Best Socio-Economical Status**

Only 12.7% of white population in Philly is living in poverty, nearly 1/2 of the city's average rate.

Most Unemployed

The unemployment rate of Black people in 2020 is 14.6%, which is continuously worsened by the COVID-19.

Most Poverty

The 'North Philly' with highest concentration of poverty overlaps with the segregated Hispanic residential zone.

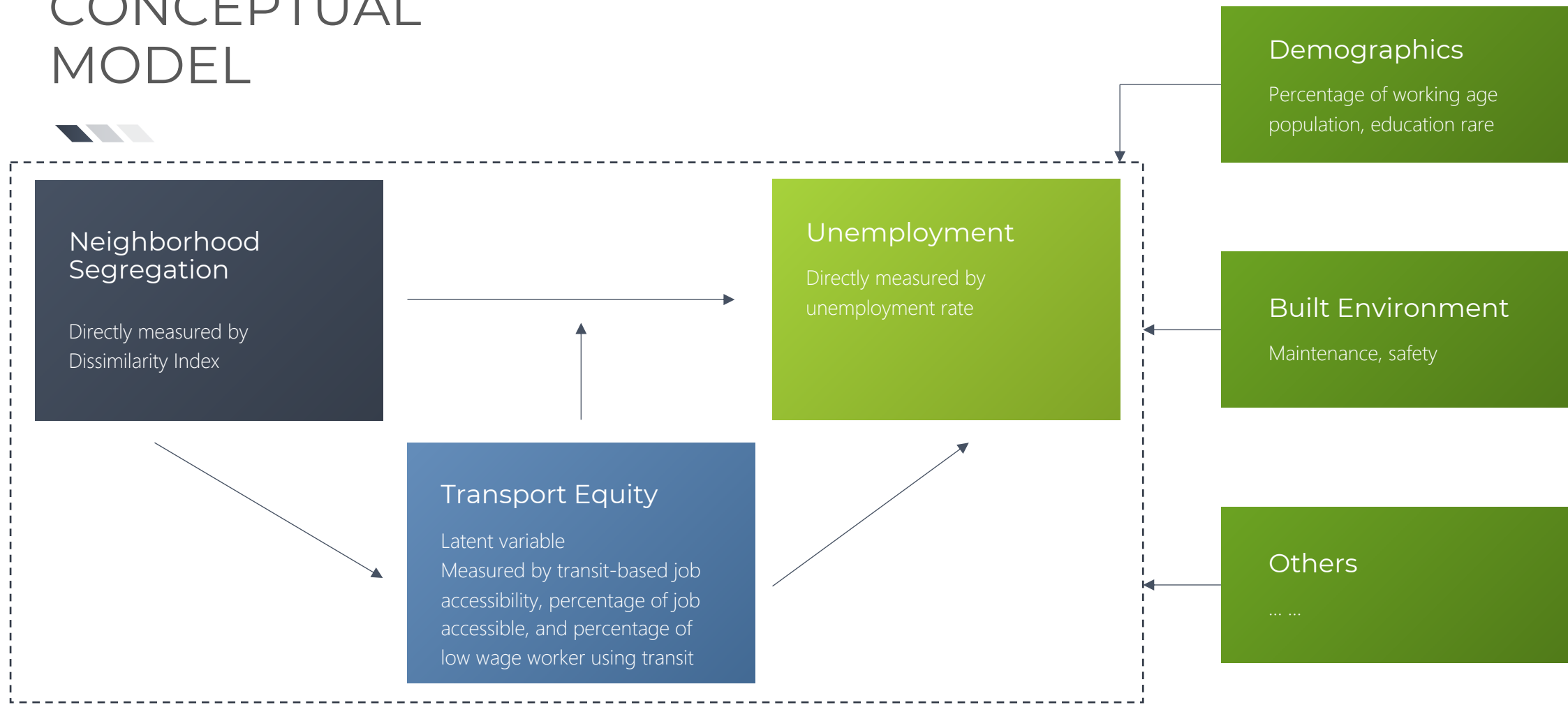
Increased Poverty

23.1% of Asian in Philly struggles with poverty. The rate is slightly lower than the city average of 23.3%. There's notable increase during the past decades.

Structural Equation Modelling

CONCEPTUAL MODEL

WWW.WEBSITE.COM



2.

PAST RESEARCH

Study indicates both the moderating and mediating effect of transport on the relationship between residential segregation and socio-economical outcomes.

Barri et al.
**CAR OWNERSHIP AND
TRANSIT ACCESSIBILITY**

Lyons & Ewing
**TRANSIT
MODERATING
SPATIAL MISMATCH**

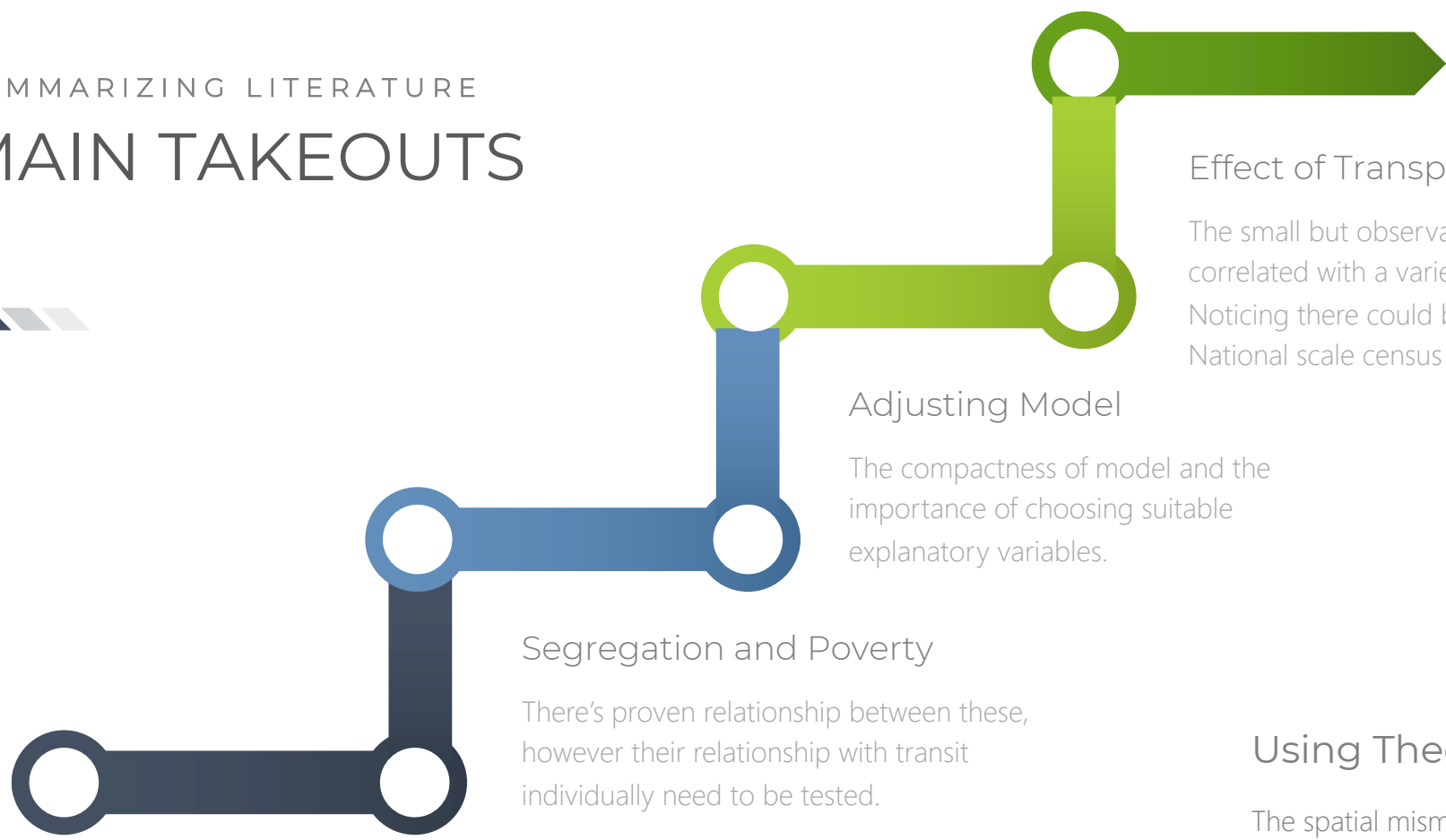
Anderson and Galaskiewicz
**RACE, INEQUALITY AND
JOB ACCESSIBILITY**

Power
**POVERTY IN
RESIDENTIAL AREAS
AND TRANSIT EQUITY**

Yeganeh et al.
**SOCIAL EQUITY AND
JOB ACCESSIBILITY**

SUMMARIZING LITERATURE MAIN TAKEOUTS

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How to do Case Study

Look closer to the historical background of the city for analyzing in depth.

Segregation and Poverty

There's proven relationship between these, however their relationship with transit individually need to be tested.

Adjusting Model

The compactness of model and the importance of choosing suitable explanatory variables.

Effect of Transport

The small but observable effect is correlated with a variety of control factors. Noticing there could be a difference in the National scale census and case study.

Using Theoretical Models

The spatial mismatch theory generally fits the segregation pattern in Philly. However it requires further testing after the accessibility data is generated.

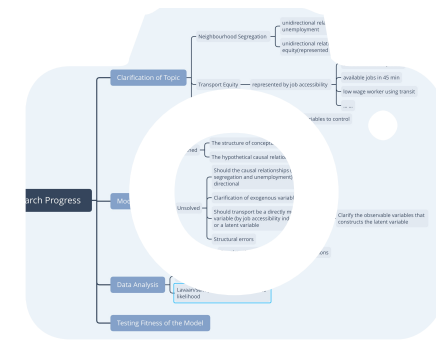
PAST RESEARCH

SUMMARY OF MODELS AND RESULTS



We concluded past related studies for summarizing the most common approach in segregation, unemployment and transport accessibility related studies.

- Models: The most used models for data analysis are hierarchical linear model and structural equation modelling.
- Data Source: American Community Survey and Brown S4 are shared data source among most studies.
- Results: Most national scale studies concludes positive relationship between segregation and job inaccessibility. The mediating effect of transport on eliminating such relationship is also shown in some studies.



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3.

CURRENT PROGRESS

Structural Equation Modelling in this research allows the study of mediating variable and complex relationship between factors.

TITLE HERE
CHOICE OF
VARIABLES



Dissimilarity Index
Calculated from block group
level population data.



Transit Equity
This category includes transit
accessibility index, auto
mobile accessibility index and
automobile ownership.



Unemployment
Direct measure.



Socio-Economical
Educational rate, income
level and percentage of low
wage workers are included.



Neighborhood
Vacancy rate and annual age
of buildings used to measure
the neighborhood quality.

CURRENT PROGRESS

TESTING MODEL RESULTS

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Transit Access Index

No statically significant correlation with segregation.



Percentage of Low Wage

More related to Hispanic residential segregation rather than African American segregation.



Percentage of Unemployment

No statically significant correlation with segregation, however there's strong correlation with transit access index.

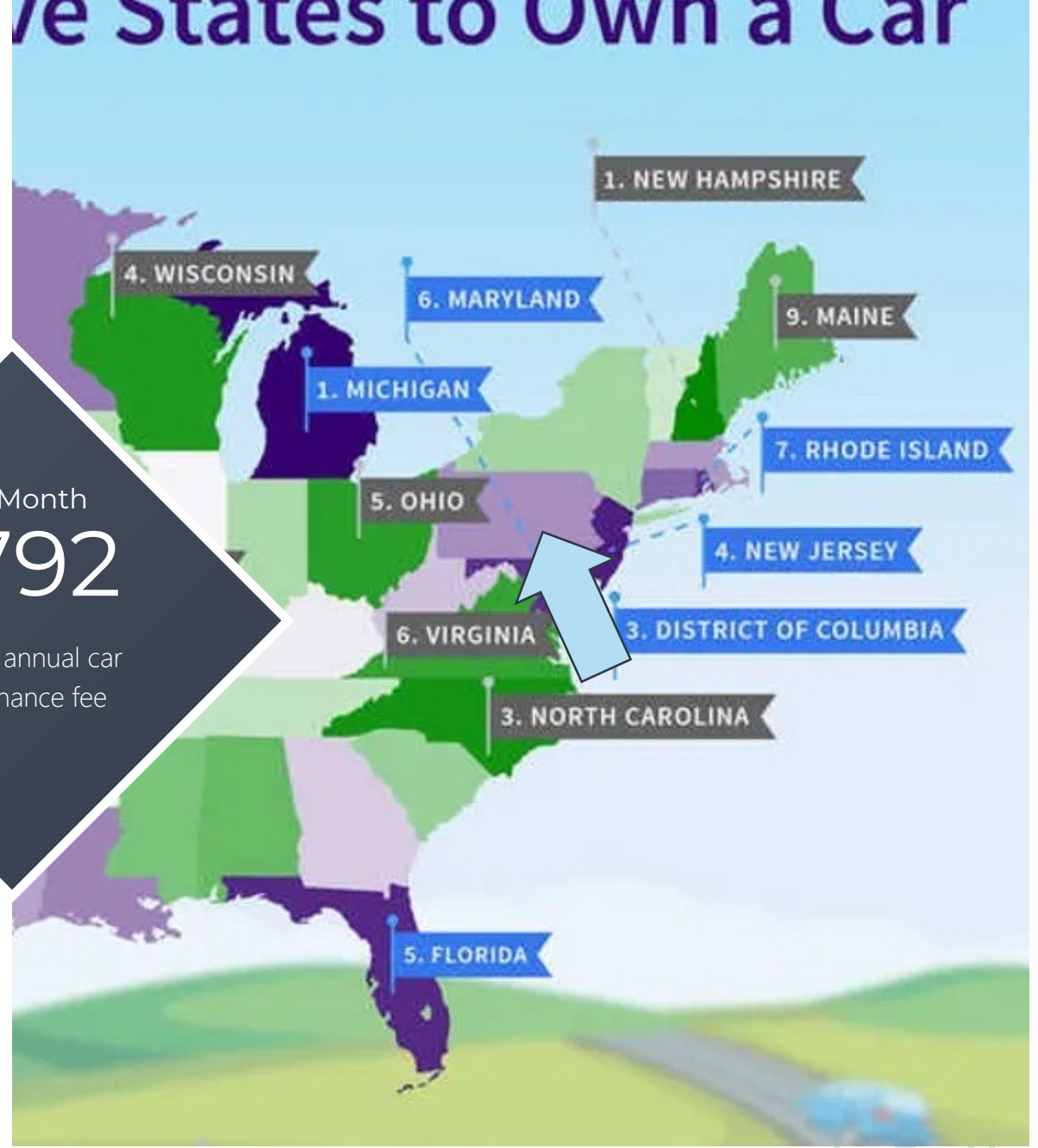
CURRENT PROGRESS

POLICY IMPLICATION



Based on the importance of automobile in adjusting the transport equity for segregated neighborhoods, we suggest for the increase in governmental subsidy on supporting household automobile purchase.

\$66/Month
\$792
Average annual car maintenance fee



4.

FUTURE RESEARCH

What we are seeing and expecting beyond our current research...

FUTURE RESEARCH

DIRECTIONS OF FURTHER RESEARCH



S
B

Rust Belt

Transit Equity in Rust Belt Cities

Expanding the geographical scope of study

East VS West

Comparison Between Cities

Automobile oriented California VS Public transport in East Coast

US&UK

When SEPTA Meets TFL

Cross national case studies on public transport and unemployment

FUTURE RESEARCH TIMELINE

May

Writing/Regression Model Fitting

Finishing the final report and managing our codebook

JUL/AUG

Data Analyzing

Paper writing for data analysis part along with model adjustment

JUN

Regression Model Fitting

Finalizing the choice of variables and data cleaning, work out the draft of hierarchical linear regression

SEPT

Paper Writing

Start to merge all writing pieces together and form the draft research paper



With My Sincere Appreciation to:

Alex(Sheng Xiao)Li and Stephanie
Fenniri for their excellent teaching;

Richard Patti for his great tutorship
and our collaboration.



THANK YOU!

FOR YOUR ATTENTION

