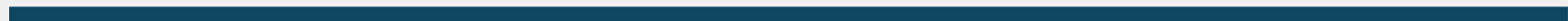




Post-Industrial Zoning Law and its Effect on Prevalence of Third Places in Seattle

Charles Cain

Advised by Dr. Heather Fitz Gibbon





Introduction

Zoning

Post-Industrial Changes

Comprehensive Zoning

Seattle

Geography

Development of Economy

Public Data

Third Places

Not home or work

Conversational, friendly atmosphere

Foster weak-tie connections





Literature and Theory

Social Space

Henri Lefebvre

Marxist view of capitalist
definition of space

Spaces are built for
production

The Conditions for City Diversity


Jane Jacobs

Mixed Primary Uses
Short Blocks
Aged Buildings
Concentration

Third Place Theory

Ray Oldenburg

Accessibility & Accommodation
A Leveler
A Low Profile
On Neutral Ground





Methods

**Zoning
Hypotheses**

Social Space

**Structural
Hypotheses**

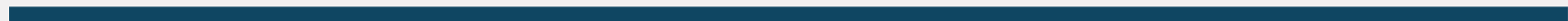
The Conditions
for City Diversity

**Economic
Hypotheses**

Third Place
Theory

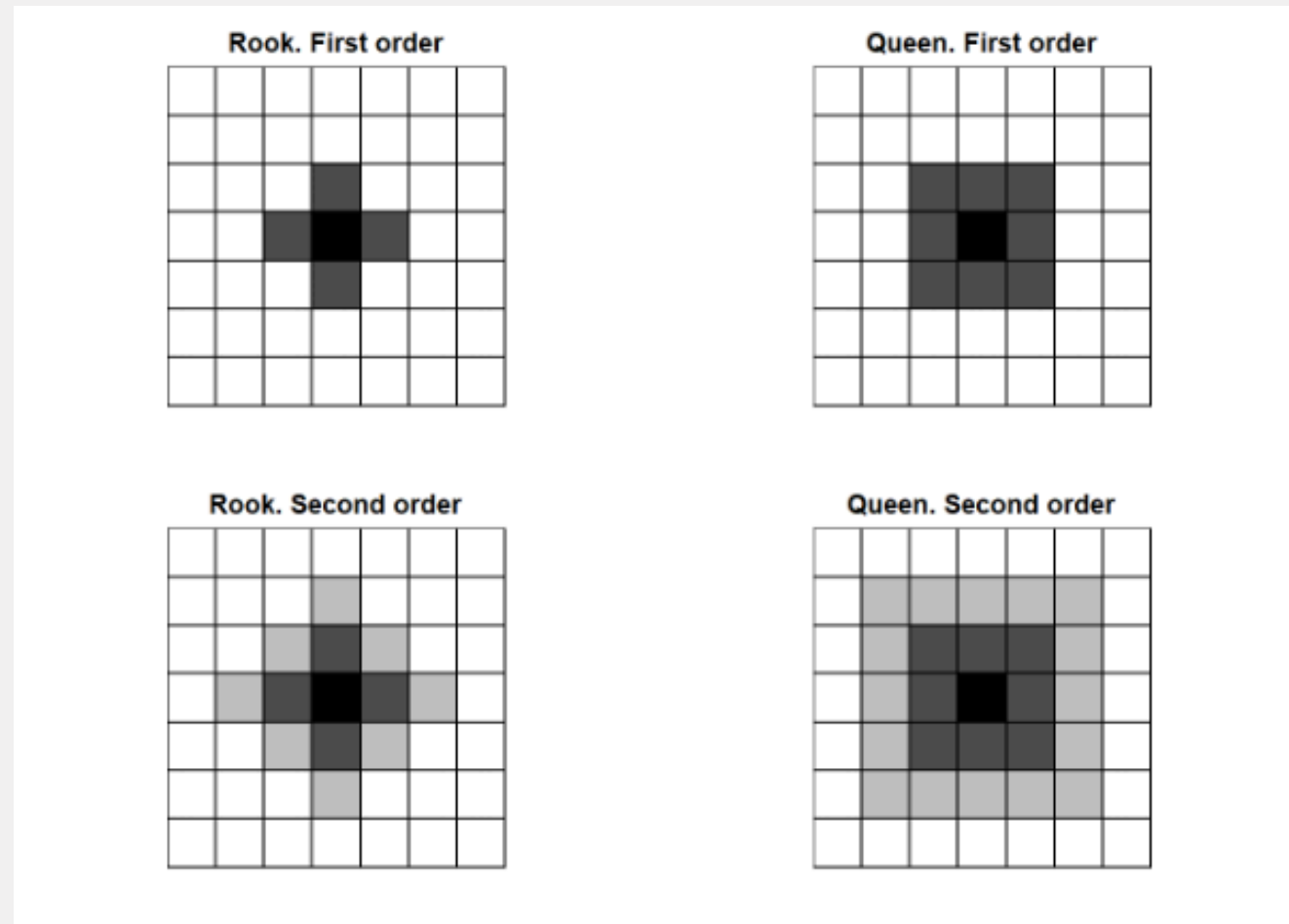
**Final
Hypothesis**

All Variables

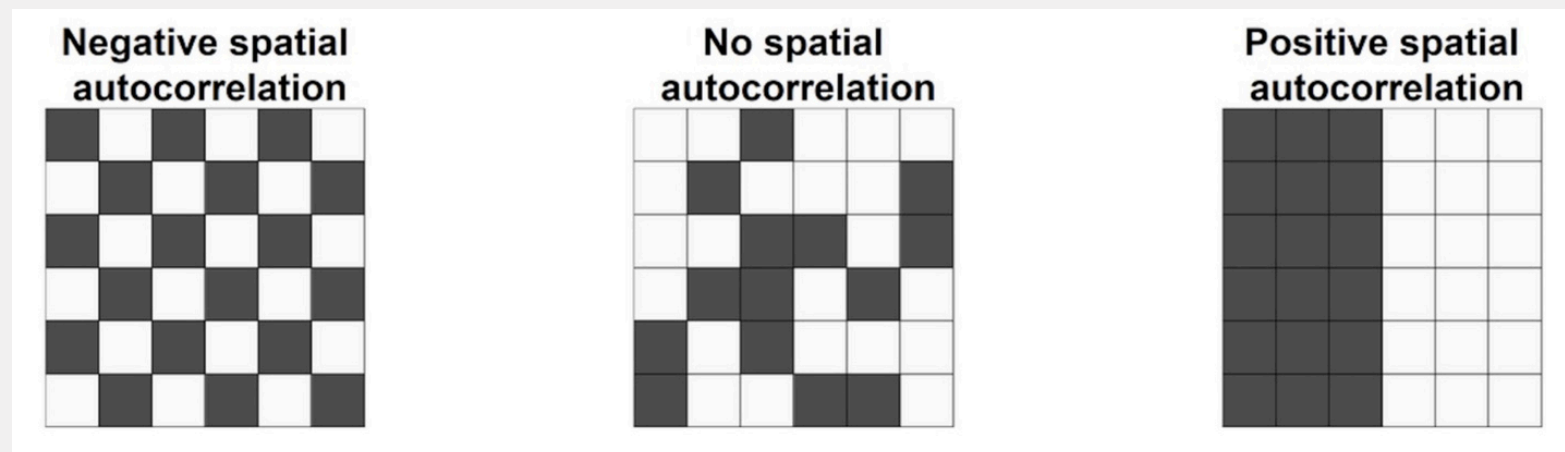




Spatial Statistics



Source: (Moraga, 2023)



Source: (Moraga, 2023)

Spatial Regression

$$y = X\beta + \tau + \epsilon$$

- Does not assume independence of data
- X is a spatial weights matrix
- τ is calculated for dependent (spatial) error
- ϵ is independent error

Global Moran's I

- Determines the amount of spatial autocorrelation
- H_0 = No spatial autocorrelation
- Ranges from -1 to 1

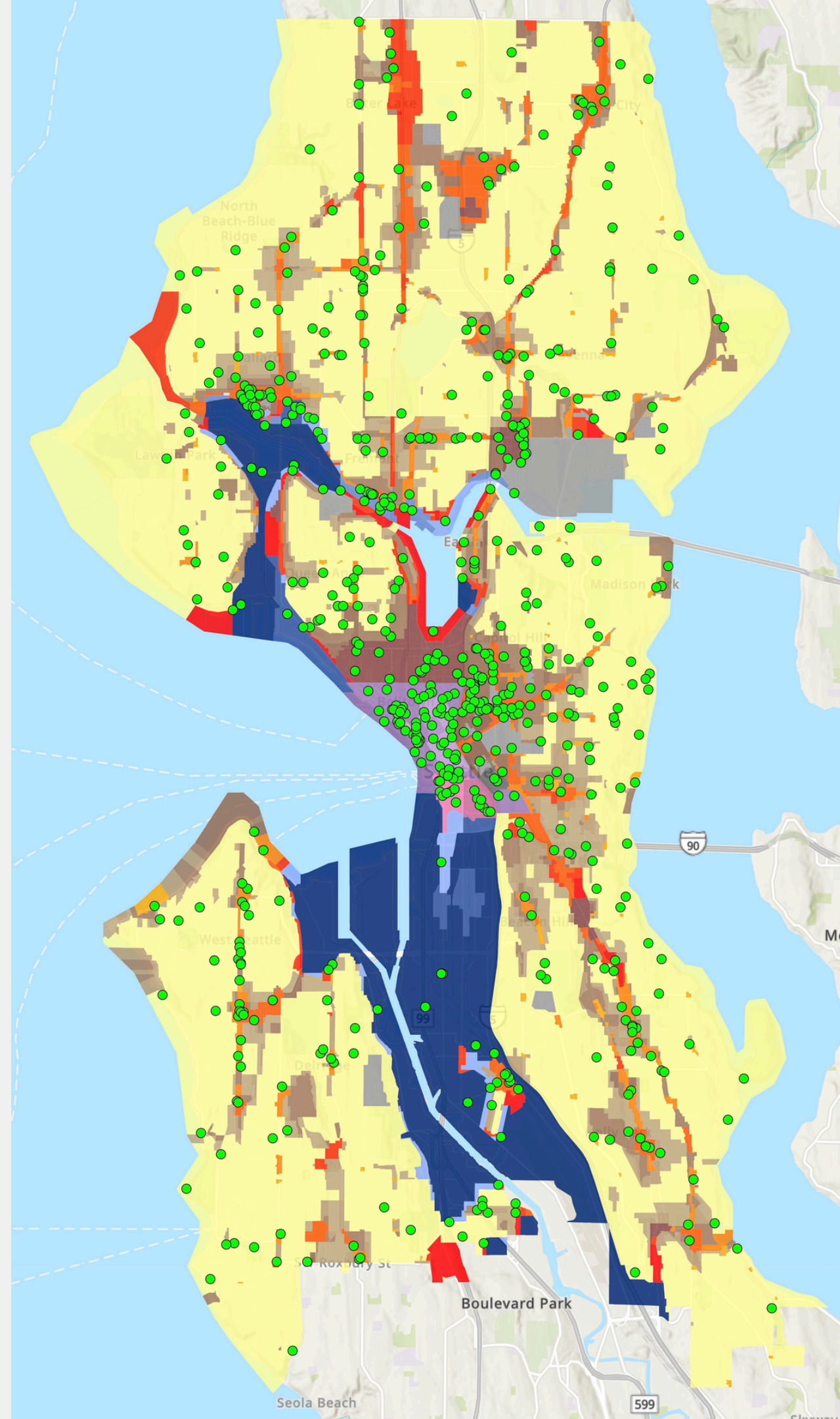
Geographically Weighted Regression

- Standard linear regression in each census block group
- Allows for visual representation of model fit and significance



Seattle Zoning Districts and Third Place Locations

- Third Places
 - 644 locations (in green)
 - Categories: Park, Community Center, Library, Bookstore, Barbershop, Food or Drink
- Zoning
 - Downtown area: higher density, more places
 - Residential areas: lower density, more public third places



Source: (Cain & City of Seattle Office of Planning and Community Development, 2026)



Results

Zoning Hypotheses

Count of Land Use
by Mixed-Use
classification (p N/A)

**Population Density
by Zoning (p < 0.001)**

**Commercial
Intensity by Zoning
(p < 0.001)**

Structural Hypotheses

Commercial Sq Ft
by Length of Blocks
(p 0.21)

Third Place Count by
Dwelling density (p
0.65)

**Third Place Count by
Neutral Ground
Cover (p < 0.001)**


Economic and Final Hypotheses

Dissimilarity of
Income on Third
Place Count (p 0.14)

**Third Place Count
by Std Dev Year
Built of Structures
(p < 0.001)**

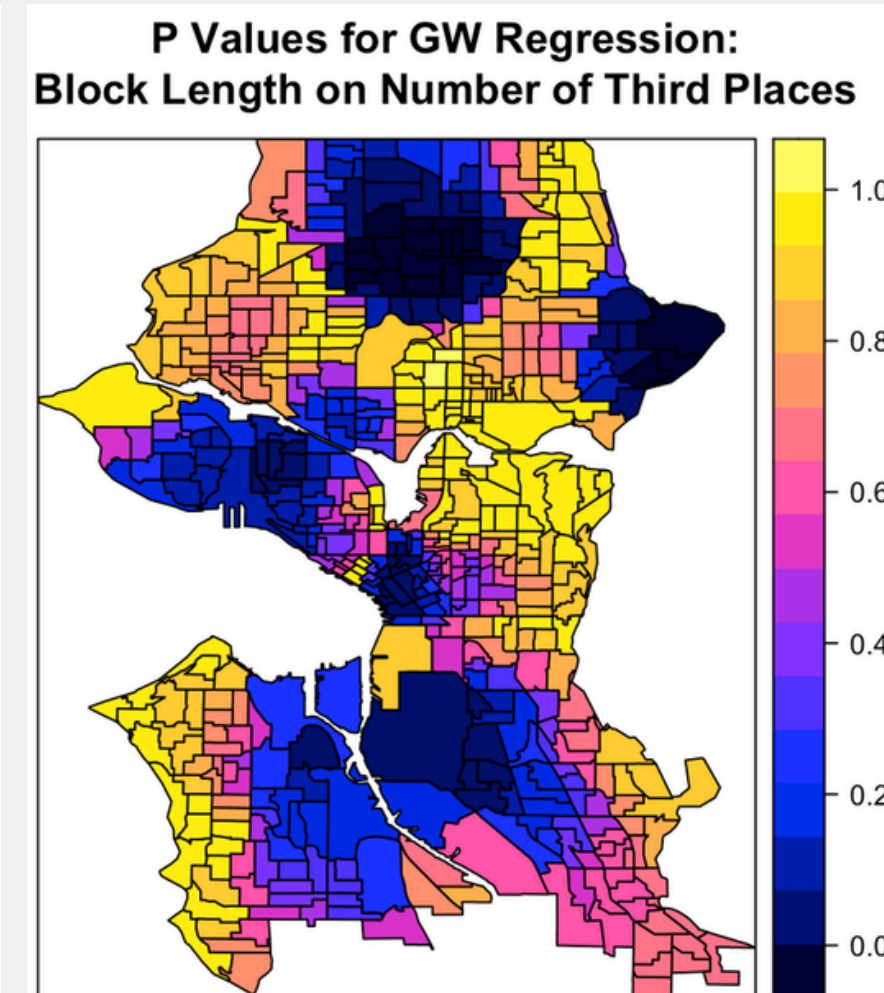
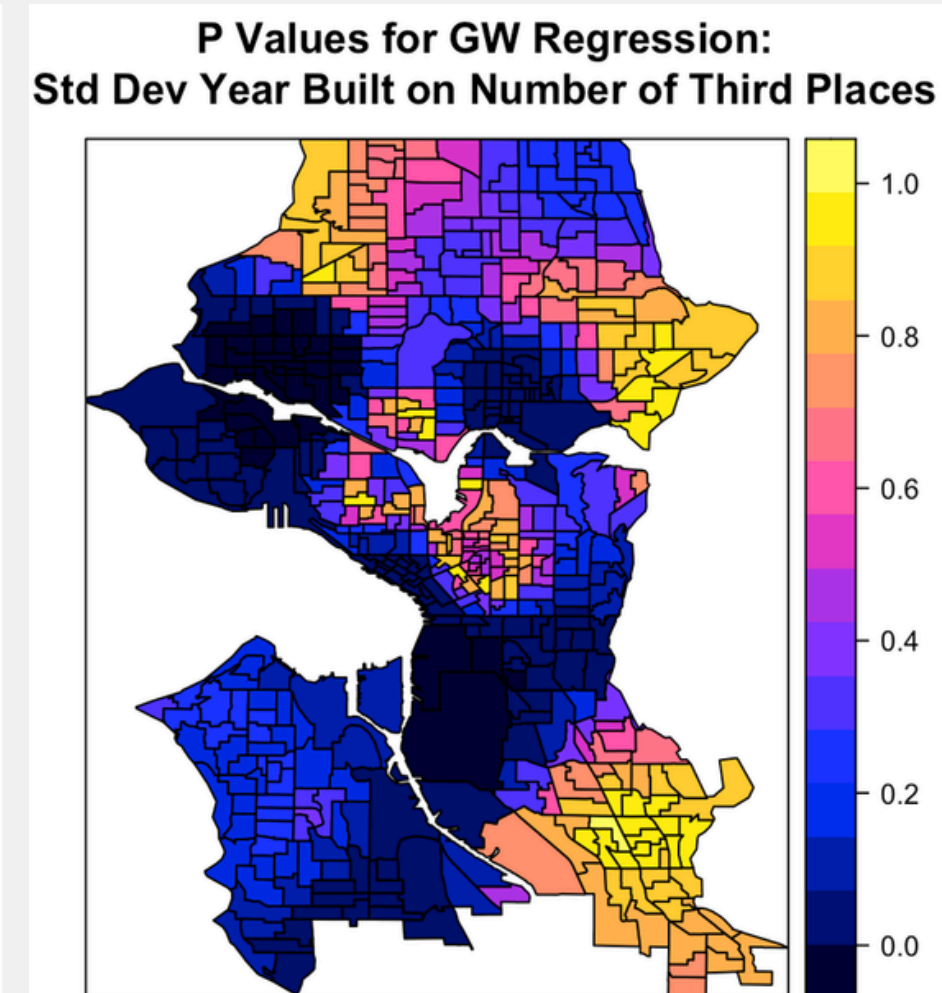
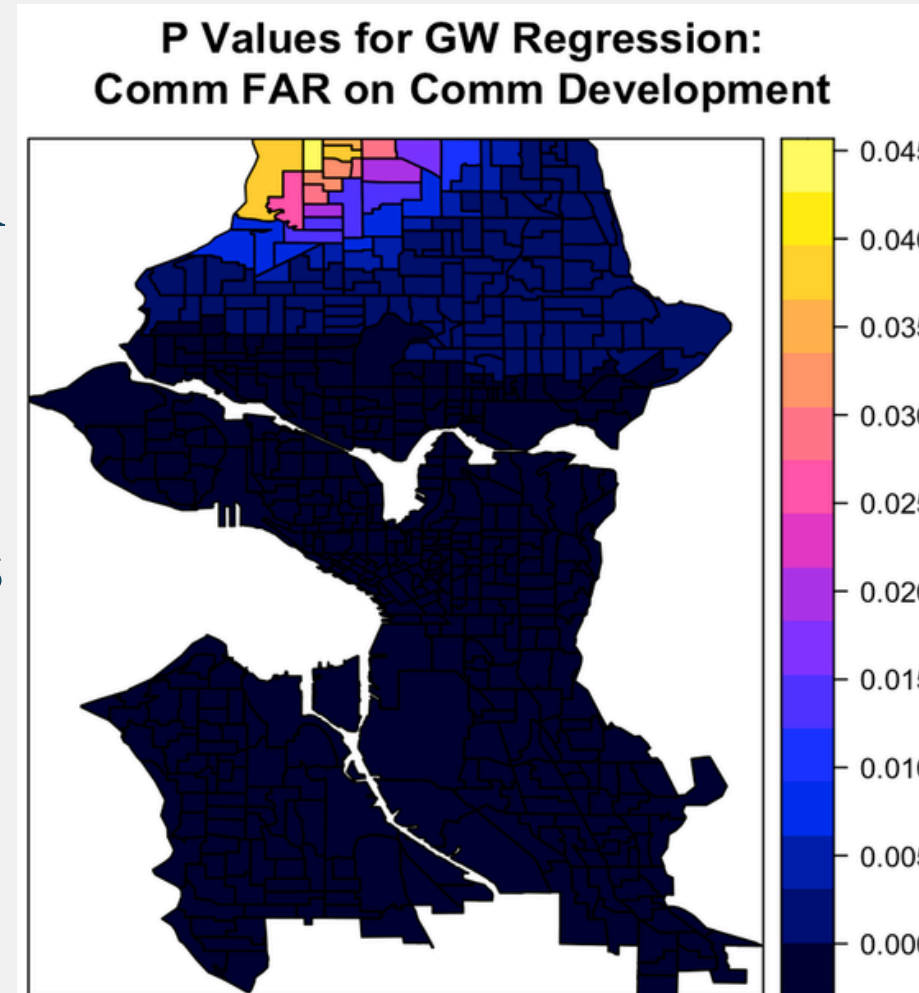
**Third Place Count
by Select Variables
(ps < 0.01)**

Conclusions

- Zoning restrictions strongly influenced intensity of development
 - Uneven performance of third place counts
 - Final Test: Neutral Ground, StDev Year Built, commercial limits, and population density.
- 

Geographically Weighted Regression Results

- Each region in the graphs to the right are census block groups in Seattle.
- Individual regressions run only in that area, so the p values can be compared.
- Darker colors indicate higher significance.





Conclusion

01

Hypotheses

- Multiple theories or perspectives are necessary to predict where third places are.
- The informal nature of third places means statistical analysis will always be challenging.


02

Limitations

- The selection of third places may not be representative of all Seattleites' third places.
- Aspects of third places like 'a Home Away From Home' cannot be quantified.

03

Future Directions

- There are public policy implications due to the scale of the study.
 - The statistical tests in this project can be reproduced, so other cities can be studied or compared.
- 
-



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