The Spatial Mismatch of Unemployment and Job Vacancies in Ramsey County

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The contents of this report represent the views of the authors, and do not necessarily reflect those of RCP, CURA, the Regents of the University of Minnesota, or Ramsey County.

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Introduction

This project will center around the idea of the Spatial Mismatch Hypothesis. This concept refers to the spatial discrepancy between the homes of the unemployed and suitable employment opportunities, measured in not only physical distance but also temporal distance.

The scope of our project is Ramsey County. We will be analyzing unemployment patterns within county and where Ramsey County residents typically work, either in or outside the county.

Background Information

The suburbanization of postwar American cities occurred as middle- and upper-class Americans, usually white, moved out of core cities. At the same time that people were leaving the city, jobs were too. Meanwhile, those left in the inner city generally did not have the resources to move and/or were discriminated against racially. As core cities lost more and more of their economic hegemony over metropolitan areas, it began to be difficult for the urban, low-income residents to find employment. While more distant jobs in the suburbs are less attractive and less accessible to residents of core cities, it is also true that distant workers in the inner city are less attractive to suburban employers, who often prefer local workers for a variety of reasons.[1] The spatial mismatch phenomenon was probably first described in the scholarly literature by John F Kain, a Harvard economist, in a 1968 article titled “Housing segregation, Negro unemployment, and metropolitan decentralization.”[2] The article used the idea of spatial mismatch to explain the Watts riots of 1965. Over the span of the next few decades, a series of empirical studies generally found proof of spatial mismatch, with this research generally following Kain’s lead, focusing on the distance between “entry-level” job openings and “unskilled,” unemployed black residents of the inner city.[3] However, throughout the 1980s and 90s the field became a sort of theoretical battleground between those who believed in the crucial importance of spatial mismatch and opponents who argued that the distance away from job openings was a minor detail in the plight of the unemployed black worker. These theorists tend to focus on continuing patterns of segregation, discrimination, and gaps in educational quality between wealthy suburbs and poor urban neighborhoods, which some have termed “racial mismatch.”[4] More recently, some on either side of the debate have apparently coalesced under the compromise that spatial mismatch is a real phenomenon, even if it is far from the only reason for the continued poverty of inner cities in America.[5]

Background Information

Spatial Mismatch Evidence:

1. Starting in the 1950s, most American cities have seen a net transfer of workplaces from the core towards the suburbs.

2. Large numbers of the workforce remain living in core cities, especially those with the lowest mobility.

Conclusion:

The growing distance between job openings and available housing has been a factor in the consistently high unemployment rates experienced in inner-city neighborhoods.

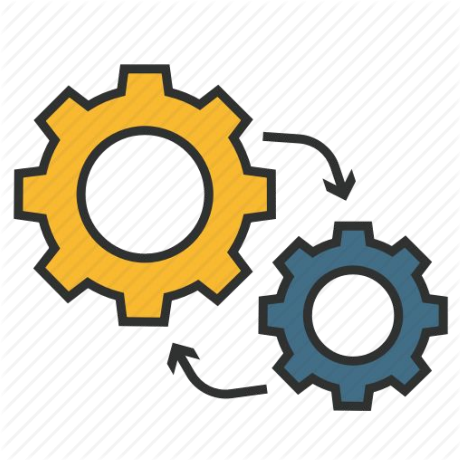
Research Questions

To assist Ramsey County Workforce Solutions with their mission of eliminating transportation barriers for low-income workers, we asked the following questions:

- What are the relationships between neighborhood characteristics and areas of high unemployment?
- Do low-income populations work further from home?
- Do certain job sectors require additional travel?
- What is the relationship between job vacancy and unemployment in Ramsey County?

Methods

We use ArcMap and ArcGIS Pro to analyze the relationships between employment data, travel time data, and demographic data in Ramsey County.



Data Sources

- Minnesota GeoSpatial Commons
- U.S. Census Bureau (ACS 2017)
    - American Fact Finder
    - IPUMS NHGIS
    - CES OnTheMap (2015)

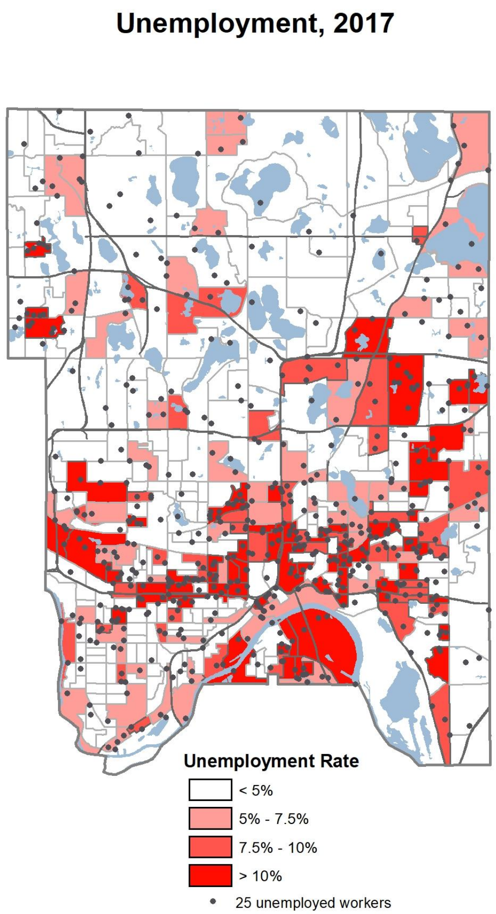
Tools Used

- Dot densities
- Choropleth maps
- Preliminary statistical investigation in R

Which neighborhoods have high unemployment?

Results

Which neighborhoods have high unemployment?



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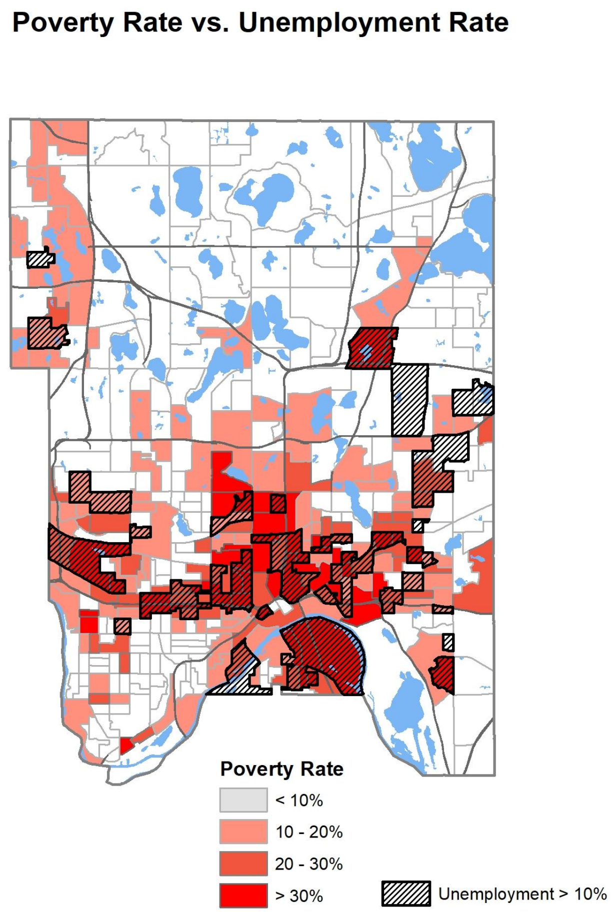

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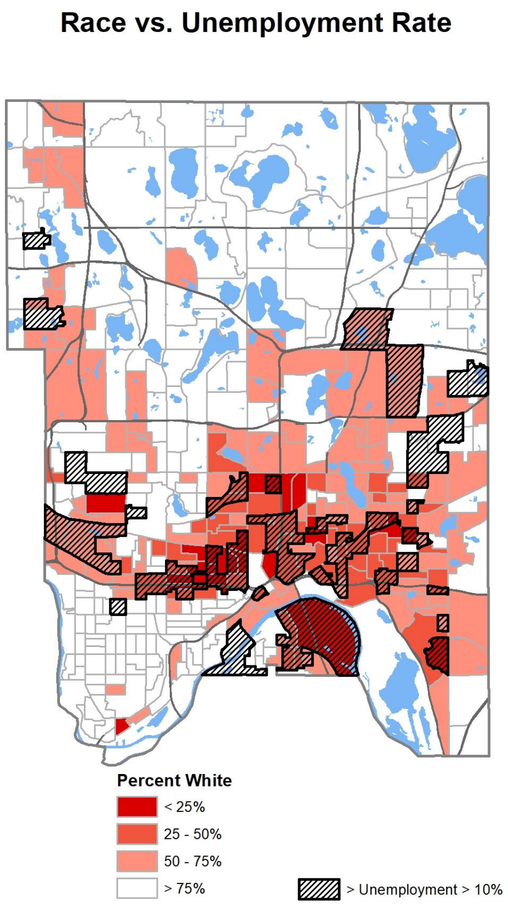
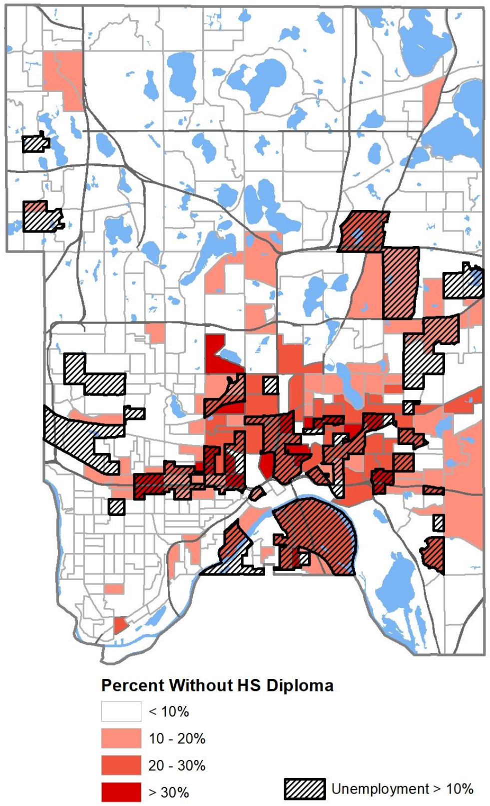


Results

Which neighborhoods have high unemployment?

HS Diploma Rate vs. Unemployment Rate



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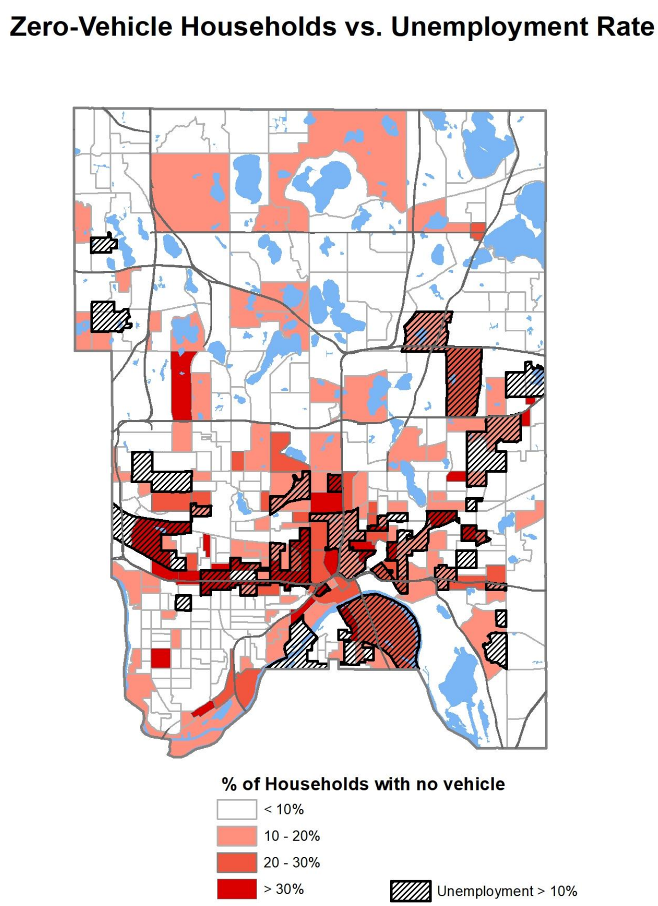


Annual Pay

	< $15,000	$15,000 - $40,000	> $40,000
High Unemployment Areas	22.0%	39.4%	38.5%
All Ramsey County Workers	17.8%	30.8%	51.4%
All Twin Cities Workers	24.6%	27.7%	55.2%

Commute Characteristics of Neighborhoods With > 10% Unemployment

Distance to Work	< 10 miles	10 - 25	25 - 50	50+
High Unemployment Areas	66.8%	28.0%	1.7%	3.6%
All of Ramsey County	65.3%	29.5%	1.8%	3.4%

Time to Work	< 10 minutes	10 - 20	20 - 30	30 - 45	45 - 60	60+
High Unemployment Areas	7.7%	30.2%	24.9%	19.4%	5.5%	7.5%
All of Ramsey County	8.7%	30.2%	25.6%	20.3%	5.6%	4.2%

Do low-income populations work further from home?

Results

Do low-income populations work further from home?

Commute Distance

Annual Pay

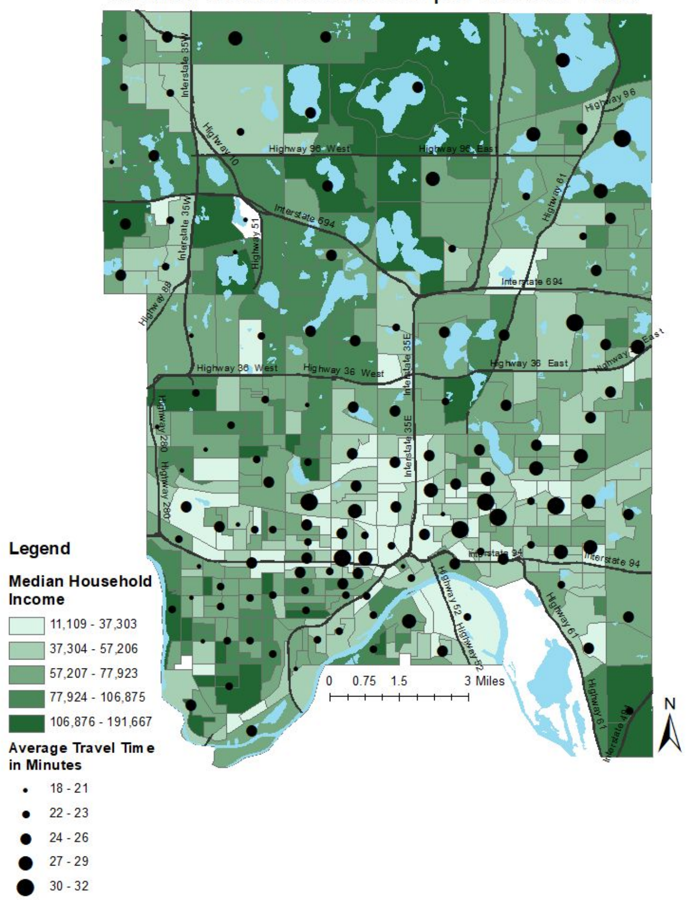
	<10 mi.	10-24 mi.	25-50 mi.	>50 mi.
< $15,000	66.7%	26.1%	2.0%	5.2%
$15,000 - $40,000	65.8%	28.6%	1.9%	3.8%
> $40,000	64.9%	30.8%	1.7%	2.6%

Workers earning less than $15,000 are only 18% of the workforce, but they make up 28% of those working more than 50 miles away.

Results

Do low-income populations work further from home?

Median Household Income per Census Tract



Do certain job sectors require additional travel?

Results

Do certain job sectors require additional travel?

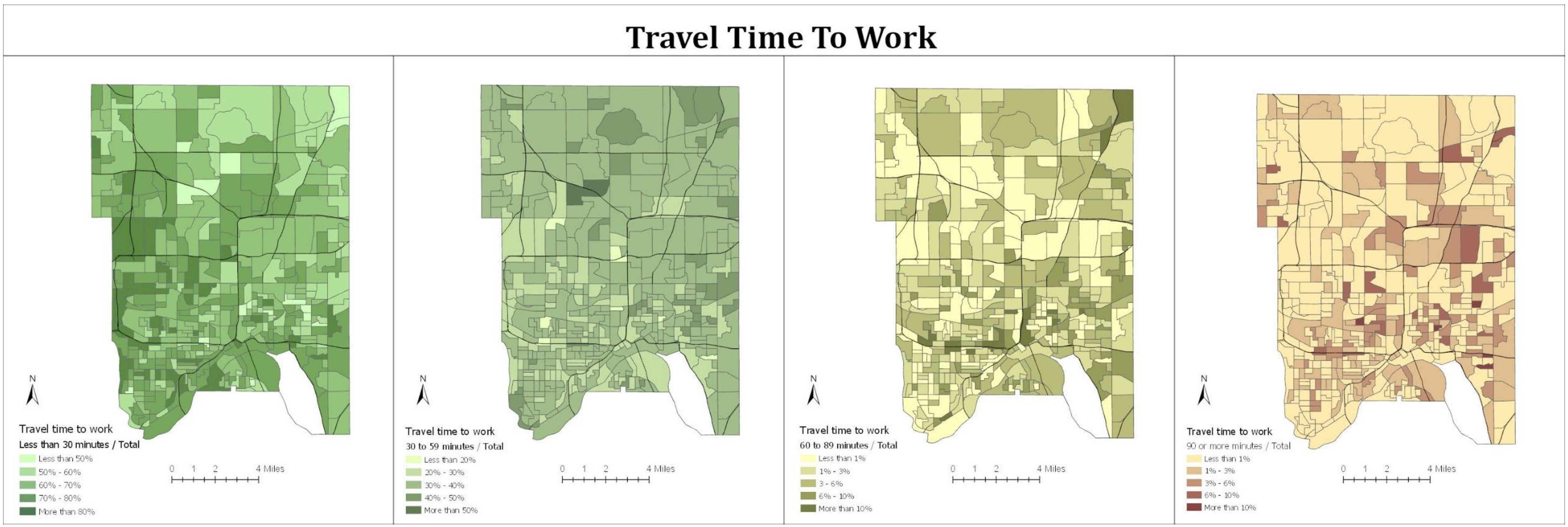
Commute Distance

Sector		<10 mi.	10-24 mi.	25-50 mi.	>50 mi.
	Goods Production	53.5%	37.5%	3.6%	5.4%
	Trade, Transport, Utilities	58.9%	33.5%	2.1%	5.5%
	All Others	69.1%	26.8%	1.4%	2.7%

- Workers in goods production, trade, transport, or utilities make up only 29% of the workforce, but make up 45% of those commuting more than 50 miles.

Results

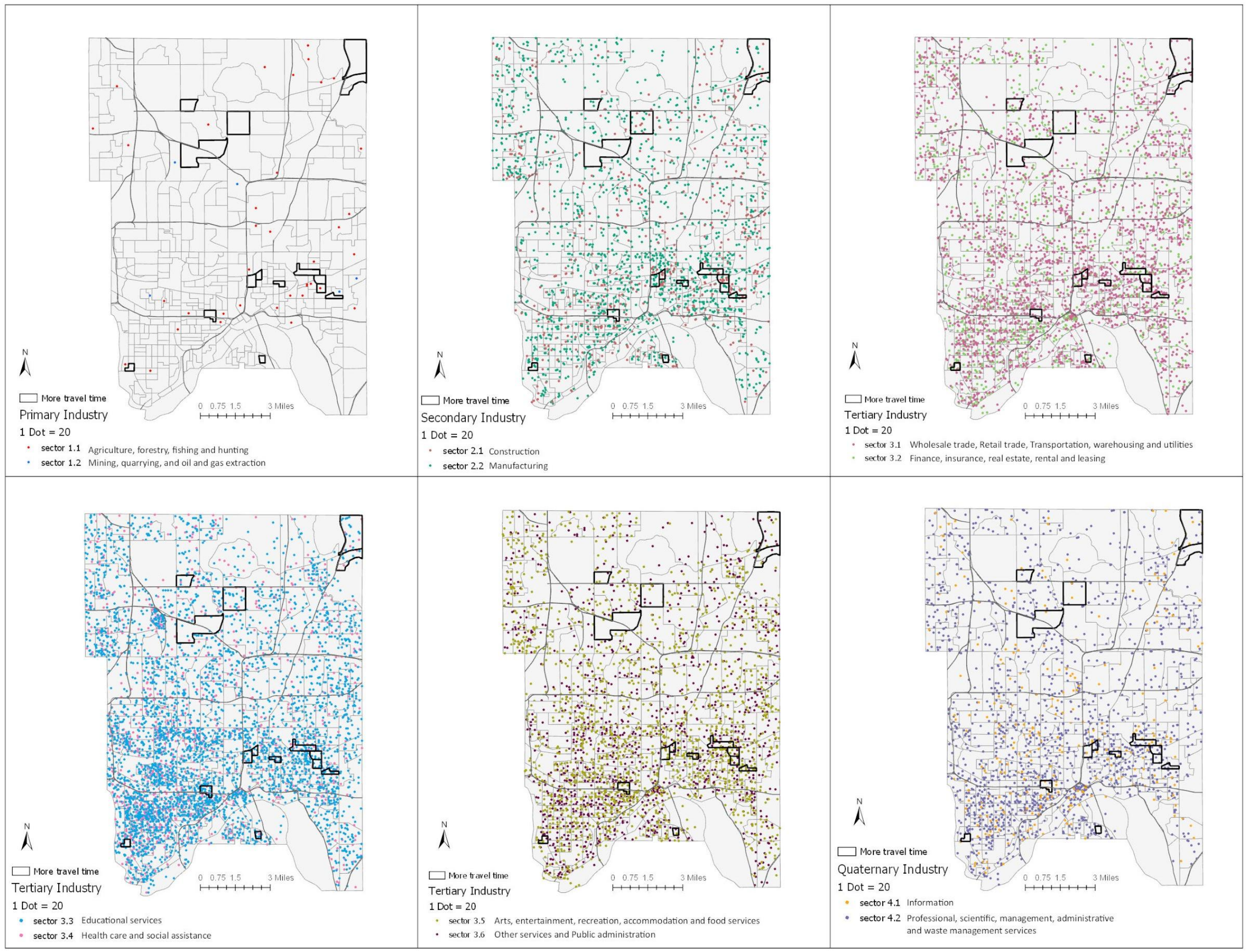
Do certain job sectors require additional travel?



Results

Do certain job sectors require additional travel?

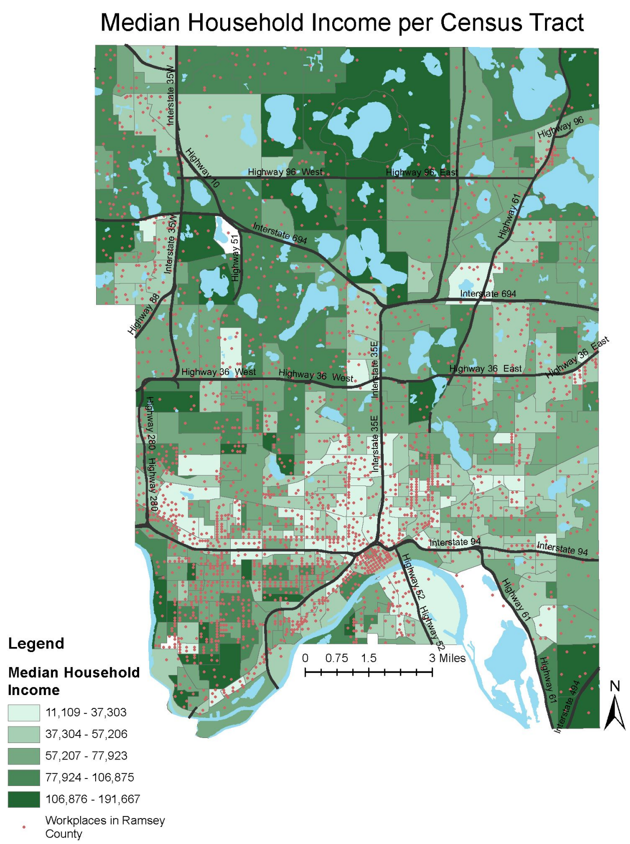
Employment Sectors



What is the relationship between job vacancy and unemployment in Ramsey County?

Results

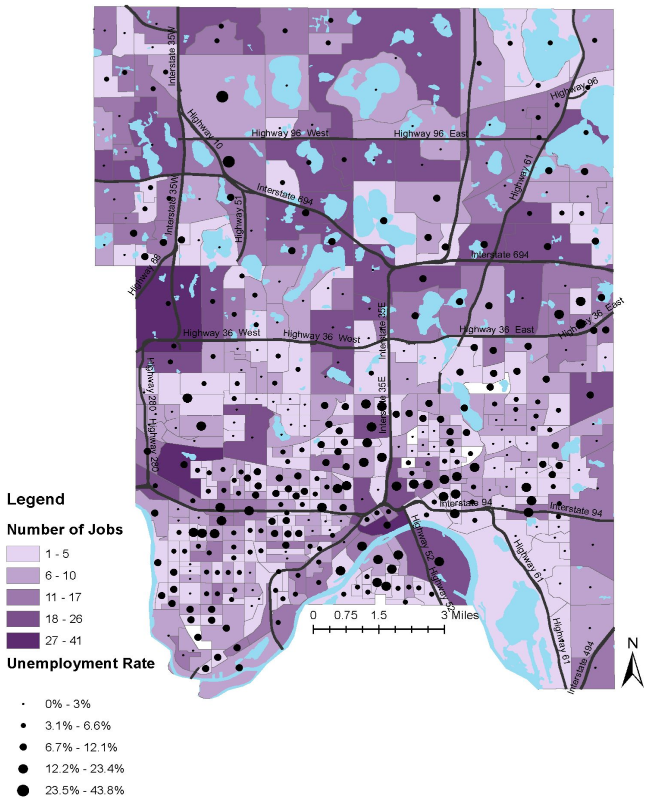
What is the relationship between job vacancy and unemployment in Ramsey County?



Results

What is the relationship between job vacancy and unemployment in Ramsey County?

Number of Jobs in Block Group
vs. Unemployment Rate



Conclusions

1. Unemployment is spatially correlated with higher rates of poverty and racial minorities, and lower rates of high school graduation and vehicle ownership.
2. Low-income workers, are more likely to be employed more than 50 miles from home and have longer average commute times.
3. Workers in manufacturing, education, trade, transport, and utilities are more likely to work further from home.
4. People who need more travel time to work also include those engaged in Educational Services, Recreation Services, Food Services, and Finance.

Discussion

Data Limitations

- Lack of job vacancy data
- Employment sectors classification
- Workforce Solutions data
    - Addresses of unemployed population were not given due to privacy concerns

Future Research

- Ramsey County should complete similar analysis using workforce solutions address data and job vacancy data.