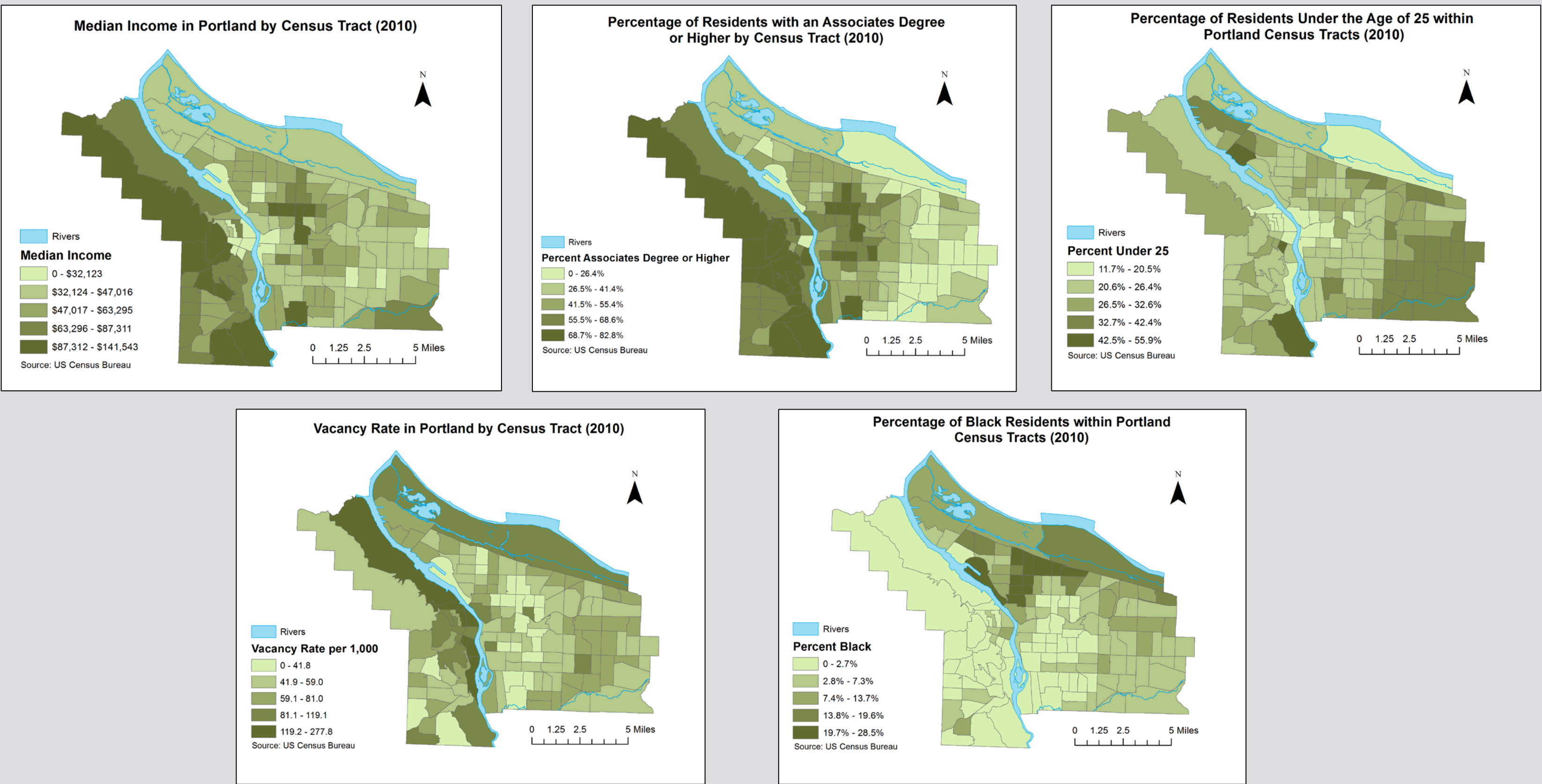# Examining the Influence of Social Disorganization Factors on Citizens' Calls for Service to Police

Aaron Skinner   Katelyn Bonn   Portland State University – Criminology & Criminal Justice

INTRODUCTION

Crime is a complex issue impacting most societies across the globe, however research has shown that the level to which crime occurs in an area is dependent on a host of other phenomena (Sampson & Groves, 1989). Because all human behavior is situated in place, environmental conditions and community characteristics have the potential to influence individuals' criminal behavior in many ways. Income and wealth inequality, poverty, education, and employment have all been found to impact levels of crime, and the specific types of crime that occur in an area (Kennedy et al., 1998, Hsieh & Pugh, 1993, Lochner & Moretti, 2001, Raphael & Winter-Ebmer, 2001). Based on the principles of Social Disorganization Theory, these variables can also demonstrate how socially-organized or disorganized a community is, which in turn influences how citizens in that community will respond to crime or disturbances in their area. Recognizing this, the current study sought to determine how Social Disorganization factors influence calls to the police in Portland, Oregon. Regression analyses were performed to determine how variables such as race, age, education, income, and vacancy levels correlate with Calls for Service to the Portland Police Bureau when compared across US Census Tracts.

While a large portion of the prior research in Social Disorganization Theory has looked at the impact of disorganization-factors on specific crime types (such as violent crimes or property crimes), some researchers have hypothesized that relying on reported crimes hinders the analyses (Warner & Pierce, 1993). It is speculated that the most disorganized communities may be reluctant to report crimes that occur, whether due to pressure from other community members or an overall distrust in police practices. To account for this, researchers have suggested using Calls for Service in place of a specific-crime variable, under the assumption that citizens who are reluctant to file a police report documenting a criminal incident may still be willing to call the police in an emergency situation. Based on this suggestion, the current analysis uses the rate of Calls for Service for violent incidents as a dependent variable, regressed against community factors such as Percent Black, Percent Younger than 25, Percent with an Associate's Degree or Higher, Vacancy Rate, and Median Income.

2010 Violent Crime Calls for Service
Portland, Oregon

Figure 1
Calls for service for violent crimes, Portland, OR, 2010.
Sources: Portland Police Bureau and U.S. Census Bureau

Median Income in Portland by Census Tract (2010)

Percentage of Residents with an Associates Degree or Higher by Census Tract (2010)

Percentage of Residents Under the Age of 25 within Portland Census Tracts (2010)

Vacancy Rate in Portland by Census Tract (2010)

Percentage of Black Residents within Portland Census Tracts (2010)
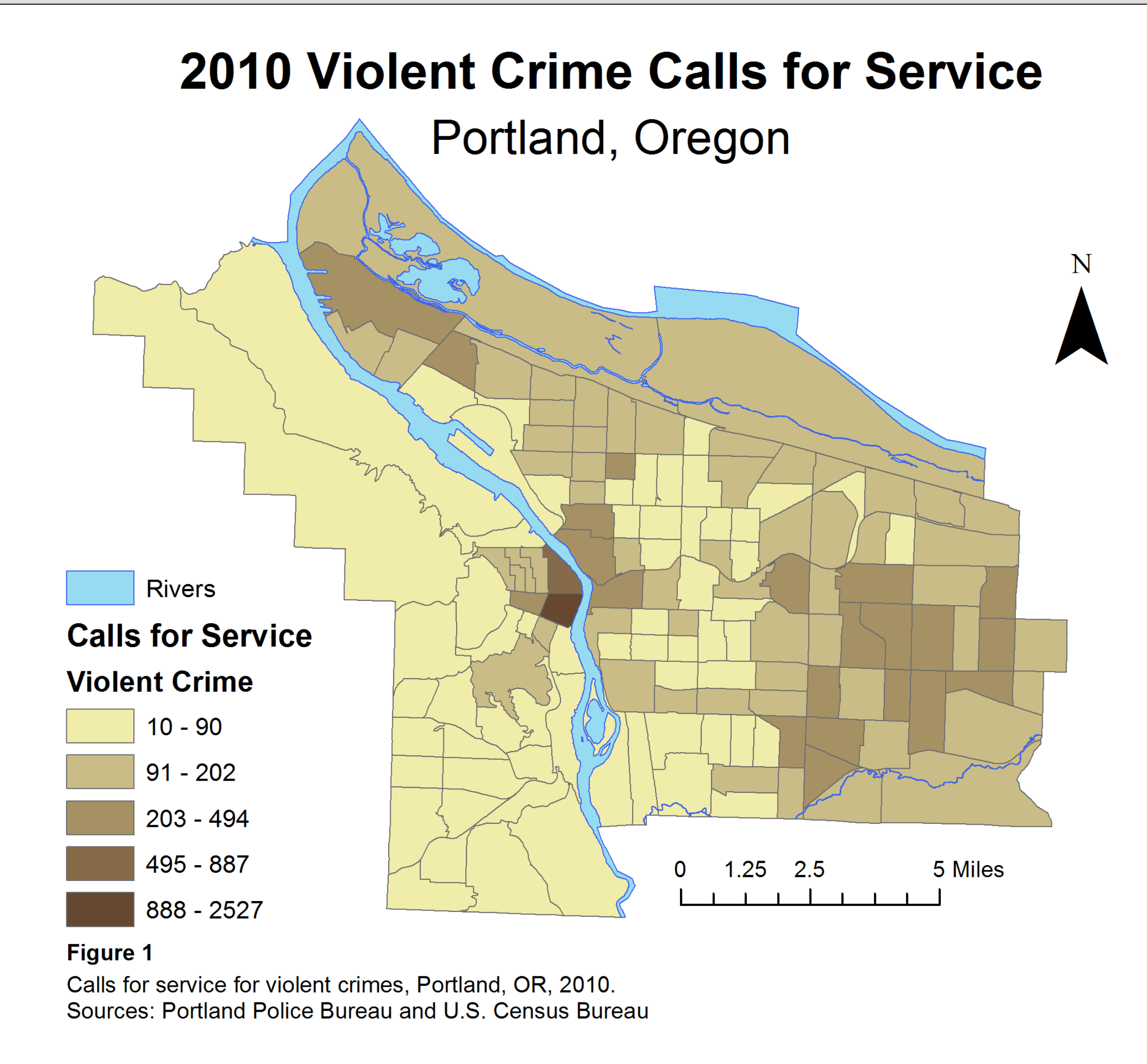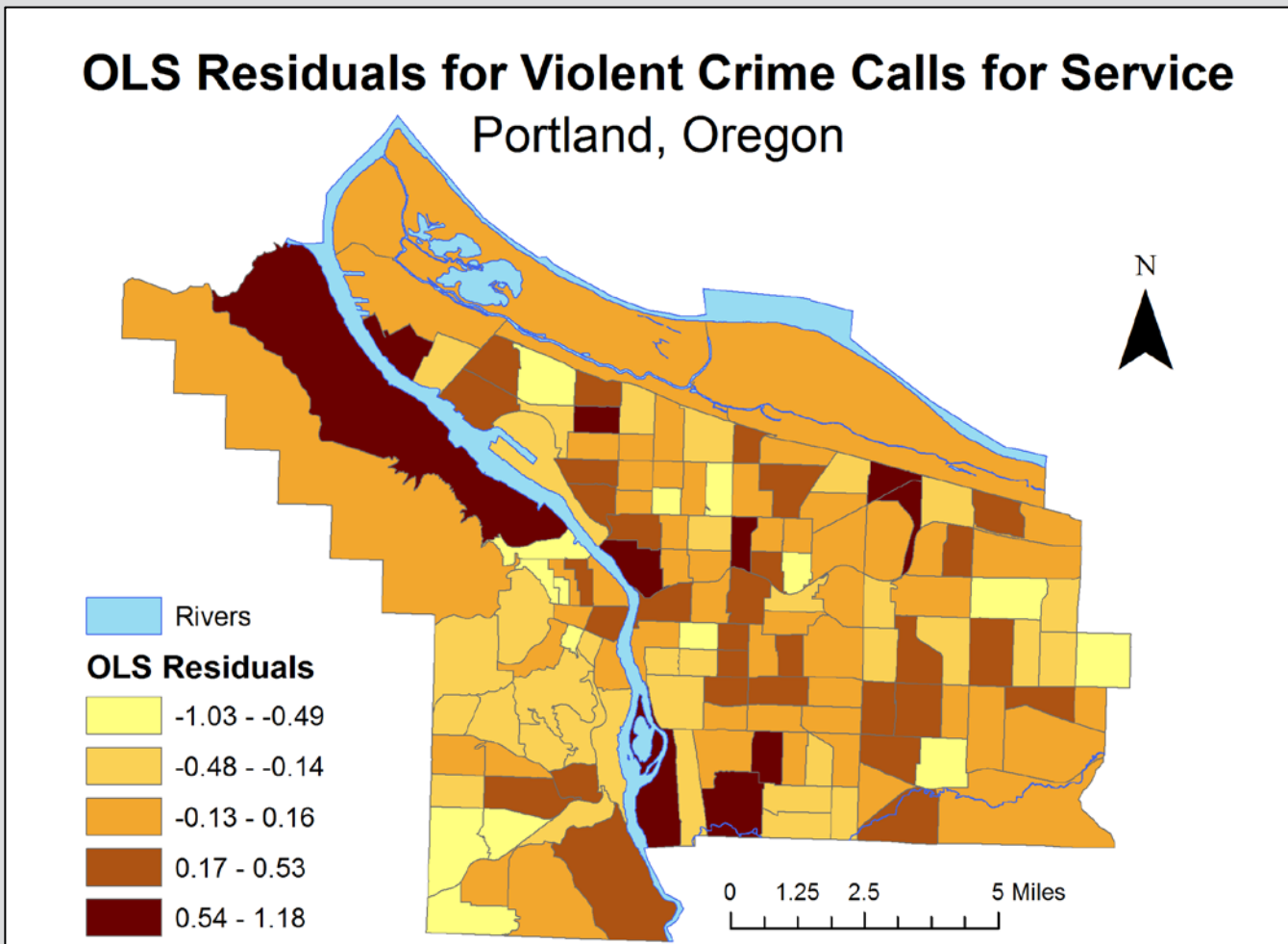
METHODS

To perform the regression analysis, some initial exploratory analyses needed to be conducted. First, normality tests on all of the variables were performed. After running Shapiro-Wilk tests, it was determined that all but two variables needed to be transformed. The dependent variable, rate of violent crime calls for service per 1,000 people, was square rooted; whereas the three independent variables (vacancy rate, percent Black and percent with an Associate's Degree or Higher) were all logged. A correlation matrix was then conducted to assess any multicollinearity in the independent variables. The results of the correlation matrix revealed that there were statistically significant relationships between the independent variables, but none exceeded the commonly used threshold of 0.60 (Andreson, 2006), so all were retained for the analysis.

Next, a Global Moran's I test was run on the rate of violent crime calls for service to assess if there was any spatial autocorrelation present in the data (Table 1). The Moran's I value was statistically significant, indicating the presence of spatial autocorrelation. To further investigate this, an Ordinary Least Squares (OLS) regression was conducted in GeoDa and the error residuals were saved as an attribute in the shapefile. Figure 2 displays the error residuals from the OLS regression using Natural Jenks classification. Another Global Moran's I test was conducted to determine if there was spatial autocorrelation present in the errors of the model (Table 1). The results showed that there was no spatial autocorrelation present in the residuals indicating that the initial OLS regression analysis was the most appropriate for this dataset.

Table 1:
Moran's I Analysis Results for Calls for Service and OLS Residuals

	2010		
	Moran's I	Z-Score	Pseudo p-value
Calls for Service	0.296	6.315	0.001
OLS Residuals	0.027	0.779	0.204

OLS Residuals for Violent Crime Calls for Service
Portland, Oregon

Figure 2
OLS Residuals mapped using Natural Jenks classification, Portland, OR, 2010.
Sources: Portland Police Bureau and U.S. Census Bureau

RESULTS

The most significant explanatory variables included in the analysis were Percent Black, Vacancy Rate, and Median Household Income. Findings suggest that areas with higher percentages of minorities, higher vacancy rates, and lower household incomes are more likely to require the service of the police, supporting the premise of Social Disorganization Theory. Percent Younger than 25 and Percent with an Associate's Degree or higher did not yield significant results, however results were just barely beyond the p = .05 threshold. This suggests that these variables may still be important factors to consider, despite not being significant in the current analysis. The overall Adjusted R^2 value of the model was .489, which is highly significant for social-science research where quantifying human behavior is a difficult task. These results indicate that Social Disorganization Factors are significantly related to the Calls for Service made to the police by citizens in Portland Census Tracts.

Table 2:
Regression Results for 2010 Call for Service (Violent Crimes) in Portland, Oregon

Explanatory Variables	2010		
	Coefficient		
	Estimate	Standard Error	p-value
CONSTANT	2.576	1.136	0.025
Percent Black	1.137	0.320	0.000
Percent Younger than 25	-3.996	2.044	0.052
Percent with Associates Degree or Higher	-1.578	0.838	0.062
Vacancy Rate	1.148	0.234	0.000
Median Household Income	-2.40E-05	6.06E-06	0.000

Note: Adjusted R^2 = 0.489; AIC = 505.553, F-statistic = 27.991

CONCLUSION

Results of this analysis largely support the premise of Social Disorganization Theory, in that disorganization-related factors were significantly related to Calls for Service to the police. It is important to note that the results do not indicate that individuals in these areas are more or less likely to commit crime; rather, they indicate that more socially-disorganized areas are more likely to require the help of the police. This is an important distinction, especially with regards to the Percent Black variable. These results suggest that areas with a higher percentage of Black individuals are more likely to call the police for assistance for violent incidents. While a great deal of Criminological research shows that Black individuals are no more likely to commit crimes than Whites, minorities in general are more likely to live in areas where crime rates are higher due to economic and educational disparities caused by a host of sociological and historical factors. It is because of these circumstances that minorities are more likely to live in socially-disorganized areas that see higher rates of crime.

These results also indicate the importance of income on social organization. Calls for service are significantly less in high-income areas. Social Disorganization Theory notes that these kinds of areas are more likely to utilize community-outreach services meant to keep crime rates low. When individuals live in high income areas, they are more likely to own their own homes and are therefore more likely to be invested in their community and the problems it faces. In contrast, areas with large numbers of vacant homes or areas with high citizen turnover have fewer residents invested in the longevity of the community. Specifically, the results of regression analysis here indicate that areas with higher vacancy rates and lower household incomes are more likely to require the service of the police, directly supporting the premise of Social Disorganization Theory.