Urban Revival Trends in North Portland Neighborhoods City of Portland, Oregon

Database Management for Census Data Analysis

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Interstate Corridor Urban Renewal Area (ICURA) est. 2000

Portland's largest urban renewal area
3,744 acres of mixed historic communities and residential neighborhoods, interconnected by commercial corridors and large scale industrial centers
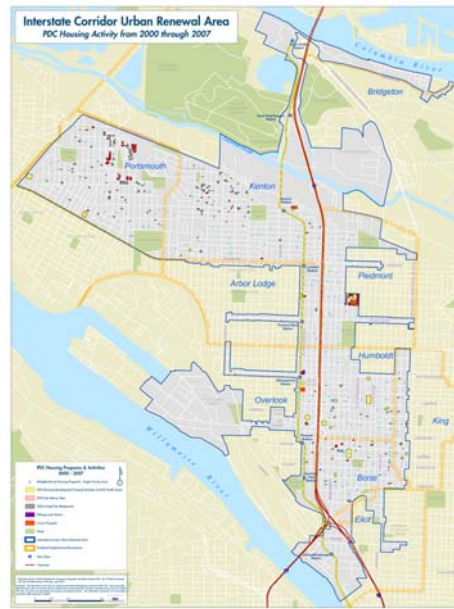
PDC assesses data to ultimately benefit urban renewal decision-making

ICURA stated goals
– Revitalization and expansion of housing
– Creation of business and job opportunities
– Protection from threats posed by gentrification and displacement

Completed ICURA projects-to-date:

- 4500 N. Albina Triangle

- Bridgeton Trail Planning Study

- Historic Home Paint Project

- Interstate Firehouse Cultural Center Renovation

- New Columbia

Initial Research Question

What is the effectiveness of the PDC project in relation to demographic and standard of living indicators (2000 – current)?

Complete census data unavailable for current project period

Our Project Goals

Access/assess 1990 – 2000 census data to identify comparable variables

Identify trends in demographics and standard of living indicators

Establish a baseline for urban revival policy and future assessments
(e.g. 2010 ICURA data assessment)

Project Hypotheses

Statistical correlation will be used to identify areas of potential gentrification

Null Hypothesis: Demographics and Standard of Living Indicators will not be significantly correlated

Alternative Hypothesis: Demographics and Standard of Living Indicators will be significantly correlated

Higher rates of change will be clustered

Data

United States Census Bureau-1990
                                 -2000
Data organization/development- Excel
                                          - Access
Variables
   – Demographics: Population, Race
   – Occupied housing units (Years owned/rented)
   – Median Income
   – Median Property Value
   – Public Assistance

Database Download
-Demographics

Poverty Indicators

Economics

GIS Calculator

Regional Ratios used to standardize data

Percentage of regional median

= Regional Median

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 Block Group Field Value *100

Rate of Change Calculation

= 2000 ratio – 1990 ratio

Ratios/Rate Of Change

Methods of Data Analysis

SPSS 12.0
-Test how two variables are linearly related

Pearson Correlation Coefficient
-Identifies correlation from -1 (perfect negative correlation) to +1 (perfect positive correlation)

R Squared Fit Line
-Coefficient of determination shows the percent of shared variation between the two variables

ArcGIS 9.2
Moran's I and Local Moran's I
-Test spatial autocorrelation between rates of change within our region to identify potential clustering

Moran's I Results for Rates Of Change (Regional)

	Black	White	Renters	Owners	Median Income	Median Property Value	Same owner for last 10 yr
Moran's I	0.075666	0.060476	-0.011675	-0.012195	0.029758	0.029758	-0.012195
Z score	5.07	4.33	0.145	0.115	2.7	2.7	0.115

ROC Values for Black, White, Median Income and Median Property values show significant autocorrelation (z score >1)

ROC Values for Renters, Owners and Same Owner for Last 10 Years are not significantly clustered (z score <1)

LISA Examples
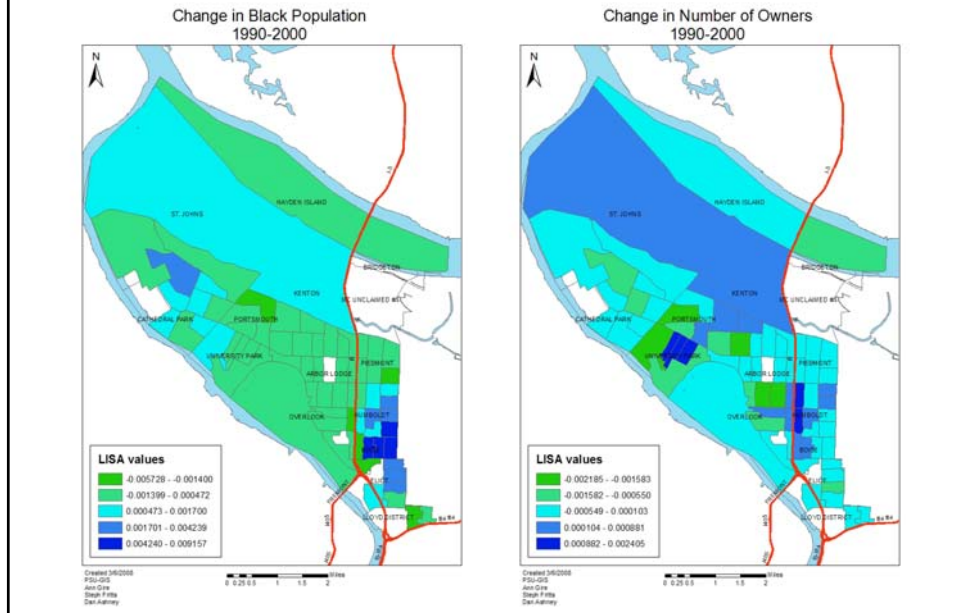
SPSS Results

		ROC_same_owner_10yrs	ROC_public_assistance
ROC_black	Pearson Correlation	0.242*	0.621(**)
	Sig. (2-tailed)	0.042	0.000
	N	71	71

(*) Significant at the 0.05 level (95%)
(**) Significant at the 0.01 level (99%)
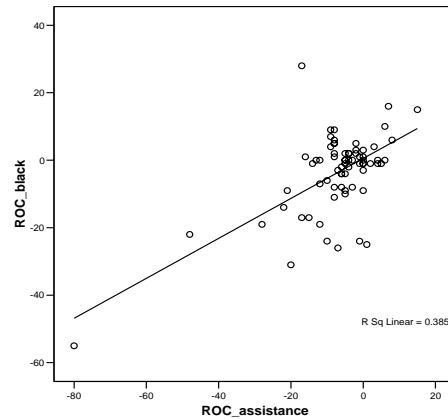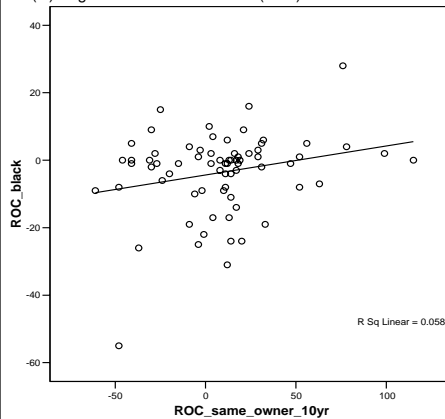
Results

Positive, Significant Statistical Correlation
(in order of statistical significance)

- Black/Public Assistance
- Black/Same Owner Last 10 Years
- Black/Owner
- White/Median Property Value
- White/Median Income
- White/Public Assistance

Results

Spatial Autocorrelation (in order of z score)

Black Population ROC

White Population ROC

Median Property Value ROC

Median Income ROC

Discussion

- Variables are related but correlation does not imply causality
- LISA indicates ROC tends to occur near Interstate Ave
- Future use: compare results to available future data (2010 census)

Issues

- Data sources inconsistent/unavailable (Census ACS, 1990-2000)
- Data type incompatibility(Text vs Numeric)
- Incompatible Tools (Getis-Ord General G)
- Results do not reflect current revitalization efforts – project adapted to data

References

Clemmer, Gina, 2000. *Quantitave and Spatial Analysis Techniques for Analyzing Gentrification Patterns* Case Study: Portland, Oregon. Independent Research Project, PSU (Center for New Urban Research).

Rogerson, Peter A., 2006. *Statistical Methods for Geography: A Student's Guide*. 2nd Edition.

Online source: *Statnotes: Topics in Multivariate Analysis*, by G. David Garson