Do the Causes of Poverty Vary by Neighborhood Type?

Suburbs and the 2010 Census Conference

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Poverty Causes vs Neighborhood Type

- The existing poverty research targets either of the three geography types, Urban, Suburban or Rural. Most often, urban poverty.

- With different historical backgrounds and varying economic settings, the neighborhoods within the three categories cannot be considered homogenous.

Causes of Poverty

- Poverty causes from past poverty research.
- Not exhaustive but explains most of the poverty causes.
- Overlapping causes.

Research Questions

- Are the causes of poverty same across different types of metropolitan neighborhoods?
- Can we distinguish between neighborhoods by their poverty causes?
- Which poverty causes are important to target for a given neighborhood?

Data

- Study Area – Geographic area within MSAs
- Unit of Analysis – Census Tracts
- Data Year –5 Year ACS (2005-2009)
- Data Sources – 5-Year ACS, U.S. Census Bureau

  Businesses data from USPS Admin. Data
- Software Used – SAS and ArcGIS

Methodology

Identify Different Types of Geography Types	Cluster Analysis
Reduce Several Poverty Causes to Fewer Factors	Factor Analysis
Building Relationship By Neighborhood Type	Multiple Regressions
Test Poverty Factors Across the Neighborhood Type	Chow Test

Cluster Analysis

	Variables
1	Population Density
2	Percent Business Activity
3	Percentage Dependent on Public Transportation
4	Median Age of Structures
5	Single Unit Housing Structures
6	Percentage Dependent on Farm Occupations

Most Urban

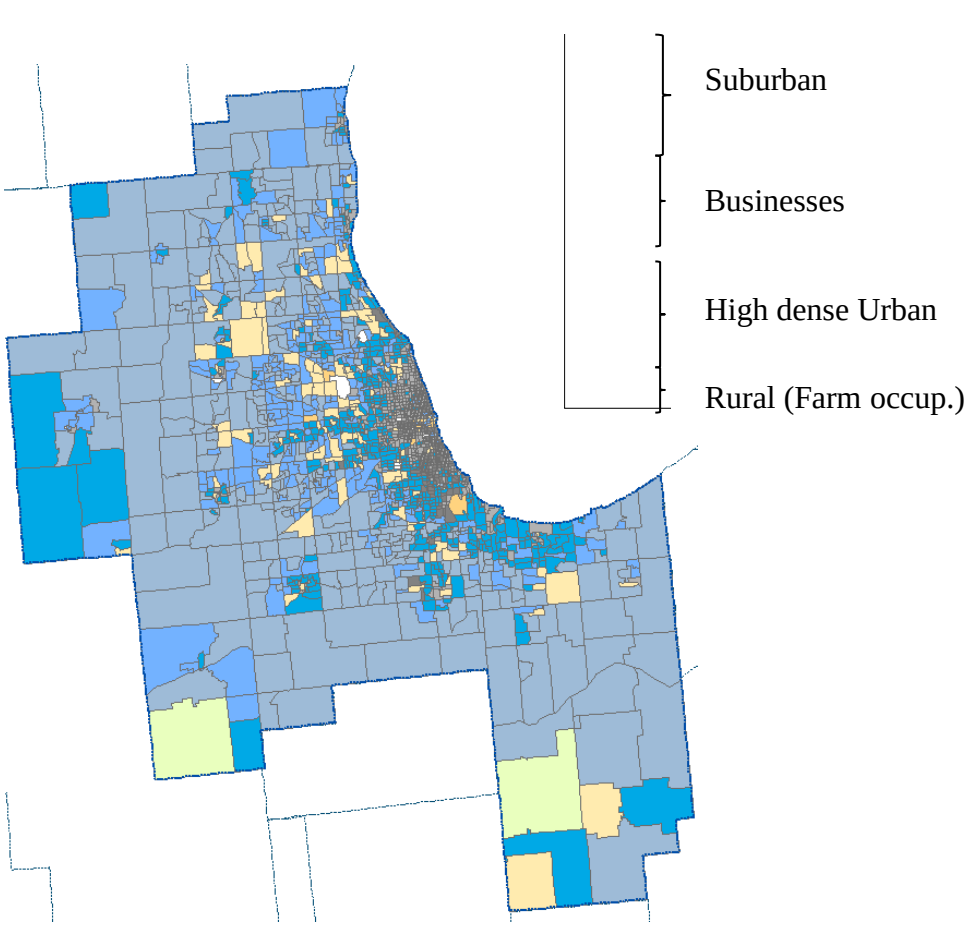
Least Urban / Most Rural

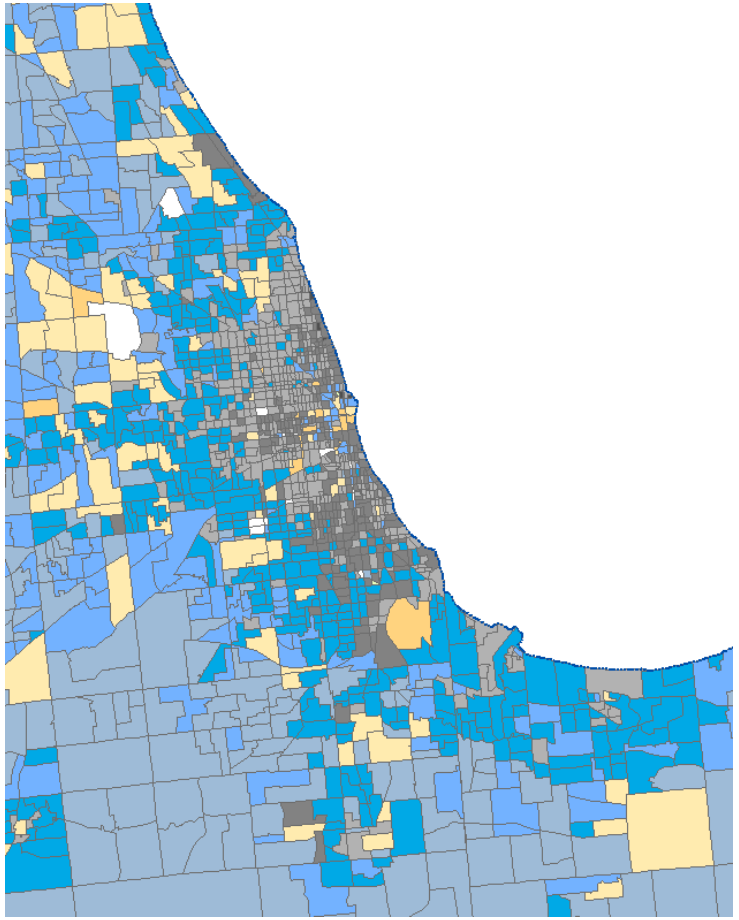
Cluster Descriptions

	Density	Median Age of Structure	Housing Type – Single Unit HU	Depend on Public Transport	Dependent on Farm Occupations	Percent Business Addresses	
Cluster 8	105,638	61.26	1.77	58.89	0.13	5.89	Highest dense with old structures and highest dependency on public transportation
Cluster 7	23,751	56.53	21.48	47.38	0.09	9.25	High dense old structures, and high dependency on public transportation
Cluster 6	12,494	61.44	31.72	11.16	0.21	7.11	Dense areas dominated by oldest structures
Cluster 1	4,825	55.62	77.97	5.5	0.34	5.54	Old low dense suburbs
Cluster 2	3,680	31.77	45.07	2.89	0.29	7.48	Low dense suburbs
Cluster 3	1,808	26.5	80.99	1.69	0.52	4.27	Least dense new suburbs dominated by single family units
Cluster 4	3,296	46.75	26.37	9.65	0.21	65.57	Low dense business districts
Cluster 5	3,066	44.53	65.43	3.35	0.18	21.66	Low dense dominated by single family and businesses
Cluster 10	3,127	38.09	62.82	2.37	33.15	9.74	Low dense with highest farm occupations
Cluster 9	2,998	37.4	62.91	2.4	11.28	8.55	Low dense dominated by farm activities

Highly Urban Suburban Business Rural

Chicago-Naperville-Joliet





Factor Analysis

- The causes listed are based on the existing poverty research and each poverty cause is explained by several variables.

Sl. No.	Poverty Themes
1	Economic Shifts
2	Human Capital
3	Quality of Labor Force
4	Spatial Mismatch
5	Migrations
6	Family Structure
7	Race and Gender Discrimination
8	Endogenous Growth
9	Living Conditions and Affordability
10	Distribution of Public Assistance

Factor Analysis – Rotation Factors

Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	
0.89568	-0.05384	0.17853	0.10092	0.03568	-0.06417	Migrations
0.88051	-0.07221	0.12496	0.0654	0.02944	-0.0554	
0.66623	0.00874	-0.04137	0.15229	0.01961	0.09975	
0.66025	0.02505	0.13351	-0.11051	0.04975	-0.05556	
-0.10993	0.76644	-0.20835	0.09572	0.05014	0.16106	Large families/ Spatial mismatch
0.09579	0.7419	0.11244	-0.08666	0.00137	-0.08428	
0.04415	0.71358	0.3141	0.42542	0.036	-0.0911	
-0.25726	0.35729	0.00023	-0.26137	0.06038	0.30287	
0.11156	-0.27718	0.70582	0.04612	-0.03742	-0.11819	Family structure/ Affordability
0.13819	0.30906	0.67089	0.35082	0.11642	0.05201	
0.42207	0.35466	0.63154	0.05903	0.08095	-0.06138	
0.06384	0.16298	0.45106	0.02293	0.14245	0.32717	
0.02604	-0.09026	0.05563	0.59903	0.02111	0.14033	Low human capital
0.2884	0.04366	-0.02792	0.59356	0.00297	-0.07673	
0.09537	-0.12356	-0.08306	-0.13989	0.01213	-0.04132	
0.09406	-0.44944	-0.22351	-0.63594	-0.00176	0.11848	
0.00751	0.11495	0.02578	0.06249	0.82123	-0.02751	Racial discrimination
0.09518	-0.05724	0.08667	-0.04437	0.81532	0.05208	
-0.00506	0.0357	-0.23925	0.12911	-0.00233	0.64388	Gender discrimination
-0.04213	-0.07884	0.35676	-0.06556	-0.0122	0.63322	

Multiple Regressions

	N	Adj R Sq.	Migrations	Large families/ Spatial mismatch	Family structure/ Affordability	Low human-capital	Racial Disc.	Gender Disc.	
All	51,672	0.65	0.29	0.32	0.52	0.34	0.03	-0.17	
C8	491	0.74	0.16	0.25	0.39	0.33	0.00	-0.02	Highly Urban
C7	2,575	0.62	0.24	0.29	0.46	0.30	0.04	-0.11	
C6	6,644	0.57	0.29	0.23	0.43	0.26	0.03	-0.13	
C1	9,850	0.68	0.38	0.29	0.59	0.39	0.04	-0.15	Suburban
C2	12,559	0.57	0.25	0.33	0.44	0.31	0.00	-0.22	
C3	13,793	0.56	0.33	0.44	0.60	0.44	0.03	-0.19	
C4	416	0.33	0.18	0.18	0.32	0.16	-0.01	-0.13	Business
C5	4,325	0.63	0.29	0.32	0.50	0.32	0.05	-0.13	
C10	147	0.31	0.04	0.14	0.32	0.22	0.01	-0.10	Rural
C9	582	0.51	0.09	0.27	0.38	0.25	0.04	-0.14	

Chow Test – Test of Homogeneity

F = 969.54 where as $F_{Critical}$ = 1.83 : implies poverty factors differ across the clusters.

Poverty Causes vs Cluster Types

	N	Adj R Sq.	Migrations	Large families/ Spatial mismatch	Family structure/ Affordability	Low human-capital	Racial Disc.	Gender Disc.
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Highly Urban Suburban Business Rural

Poverty Causes..

- Consistently important:
  - Family Structure and High Cost of Living
  - Low Human Capital

- Variably important:
  - Migrations
  - Spatial Mismatch
  - Large family sizes
  - Gender discrimination

Conclusions

- Cluster analysis – A useful technique in identifying different types of neighborhoods
- Factor analysis – Useful in identifying broad correlates of poverty
- Bringing the above together in a regression framework reveals interesting variation in the role of each factor in explaining poverty

Thank You

Any questions?