

Across the Rural-Urban Universe

Two Continuous Indices of Settlement Patterns for ACS Microdata

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Dispelling the Nonmetro Myth

"Nonmetro" is not synonymous with rural. Metropolitan Statistical Areas or "metro" areas are defined at the county level, and most counties have a mix of urban and rural areas. In fact, according to the latest American Community Survey (ACS), **54.4 percent** of people living in rural areas are within a metro area.







USD/



¹ Rural areas are defined here using nonmetropolitan (nonmetro) counties. The terms "rural" and "nonmetro" are used interchangeably as are "urban" and "metro." Statistics are calculated using the 2013 nonmetro definition. For more on these definitions, visit the ERS "What Is Rural?" topic page.









Objectives

- Develop indices of settlement patterns that...
 - Characterize rurality (and urbanity) of *PUMAs*
 - Distinguish *multiple dimensions*
 - Are continuous
- Assess the utility of indices in study of *poverty*
- Publish indices through IPUMS USA

Intensely developed

Concentration: Local population density Coombes & Raybould (2001)

Sparse

Conceptual model: *Two dimensions*









Measuring CONCENTRATION...











Measuring *METROPOLITANNESS*...







PUMAs By 2 dimensions of settlement patterns







PUMAs By 2 dimensions of settlement patterns



Application: Poverty by Settlement Type



43.7 - 18.7 - 13.6 - 9.1

2.8

Poverty rate (2017) 43.7





2.8

Poverty rates (%)

By PUMA settlement type, 2012-2017 ACS PUMS

Average tract	Average CBSA population			
density	0-50k	50k-400k	400k-3.2m	3.2m+
10,000+			22.8	20.5
2,000-10,000		20.7	16.6	12.6
400-2,000		15.6	11.6	9.2
80-400	17.7	16.8	12.6	17 5
0-80	17.5	18.3	12.0	12.5

Difference from base poverty rate (%)

By PUMA settlement type, 2012-2017 ACS PUMS

Average tract	Average CBSA population			
density	0-50k	50k-400k	400k-3.2m	3.2m+
10,000+			13.6	11.3
2,000-10,000		11.5	7.4	3.4
400-2,000		6.4	2.4	0.0
80-400	8.5	7.6	1 2	2.2
0-80	8.2	9.1	4.5	5.5

Difference from base probability of poverty (%)

By PUMA settlement type, 2012-2017 ACS PUMS

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Average tract	Average CBSA population			
density	0-50k	50k-400k	400k-3.2m	3.2m+
10,000+			12.8	10.7
2,000-10,000		11.0	7.0	3.3
400-2,000		5.8	2.2	0.0
80-400	7.4	6.6	2 7	26
0-80	7.0	7.8	5.7	2.0

LPM regression with controls for demographics, educational attainment, employment status & sector, health insurance, year, & census division

Latinos: Difference in probability of poverty (%)

By PUMA settlement type, 2012-2017 ACS PUMS

Average tract	Average CBSA population			
density	0-50k	50k-400k	400k-3.2m	3.2m+
10,000+			2.1	5.7
2,000-10,000		8.1	7.3	5.7
400-2,000		6.7	8.4	7.0
80-400	6.2	7.7	0.2	7.0
0-80	5.9	5.4	9.2	7.0

LPM regression with controls for demographics, educational attainment, employment status & sector, health insurance, year, & census division

Noncitizens: Difference in probability of poverty (%)

By PUMA settlement type, 2012-2017 ACS PUMS

Average tract	Average CBSA population			
density	0-50k	50k-400k	400k-3.2m	3.2m+
10,000+			2.5	3.6
2,000-10,000		6.5	3.8	3.9
400-2,000		6.6	4.7	2.9
80-400	5.6	4.7	E O	6 1
0-80	2.6	3.7	5.9	0.1

LPM regression with controls for demographics, educational attainment, employment status & sector, health insurance, year, & census division

Conclusions

- Nonmetro is not interchangeable with rural
- New IPUMS variables index 2 dimensions of rurality:
 - Average tract density \rightarrow Concentration
 - Average CBSA population \rightarrow Metropolitanness
- Important to go beyond metro/nonmetro, and new variables will make that easy!

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