Patterns of Persistent Extraordinary Segregation in Pennsylvania: 1990-2000

by

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• Revisiting, Revising and Extending an Earlier Paper:


– The article introduced the Spatial Segregation Index (SSI) as a measure of distributional evenness.

• Deriving the Spatial Segregation Index

– Based on the Coefficient of Variation (CV)

– Standard deviation divided by the mean of a distribution

• CV is zero for an even distribution across all observational units (e.g., census tracts in a county).
• CV maximizes when all of a distribution is found in a single observational unit.

• CV is a measure of relative variability
– Allows comparisons of distributions of virtually any size.

• Maximum CV increases with the number of observational units (n)
– Maximum CV for σ = √(n-1)
– Maximum CV for s = √n

• Standardizing the Coefficient of Variation

– Express an observed CV as a percentage of the maximum possible CV given the number of observational units.

• The Spatial Segregation Index (SSI)

– \( \text{SSI} = \left( \frac{\text{CV}_{\text{obs}}}{\text{CV}_{\text{max}}} \right) \times 100 \)
– Allows the comparison of distributions of any size over any number of observational units.

• Interpreting the Spatial Segregation Index

– An SSI of 31.4% means that 31.4% of the variability in the distribution of Native Americans in Potter Co. is explained by the fact that they are not segregated into a single tract.

– An SSI of 64.5% means that 64.5% of the variability in the distribution of Native Americans in Potter Co. is explained by the fact that they are not segregated into a single tract.

– An SSI of 98.1% means that 98.1% of the variability in the distribution of Native Americans in Potter Co. is explained by the fact that they are not segregated into a single tract.

– The Data

– 1990 Pennsylvania Census Tracts
  – With error correction: Native American and Asian/Pacific Islander population data were transposed on the disk.
– 2000 Pennsylvania Census Tracts
  – ESRI Data and Maps 2003 CD

• Subgroup Formation

– Whites
– Asian/Pacific Islanders (API)
– Blacks
– Hispanics
– Native Americans
– Others
– Minorities
  – API, Blacks, Native Americans, and Others

• Independence of Subgroup Size and Resulting SSI

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• Significance of Differences in Average Subgroup SSIs From the Average for Minorities in Total

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