

Developing Indicators of Neighborhood Environments that Affect Child Health and Development:

NCS Project 2-16

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This formative research project focuses on two main measurement questions about neighborhoods: 1) how to gather information about neighborhoods efficiently from interviews with NCS participants; and 2) how to use systematic observation of local area characteristics to understand the geographic scale of the area in which measurements should be made. For both purposes we have drawn on previous work we have conducted in Chicago in which both interviews and systematic observation were used.

The Chicago study developed indices of neighborhood characteristics that are now well known, including especially the notion of collective efficacy. Our re-analyses of these data (see below) determined that scales that originally included 6-10 separate items could be reasonably approximated with an abbreviated scale of two well chosen items.

The Chicago study also pioneered Systematic Social Observation (SSO), a structured approach for observing the physical and social characteristics of individual street segments. During the summer and fall of 1995 80 neighborhoods in Chicago were systematically observed by a 4 person team traveling in a vehicle at low speed down each street in the sampled neighborhoods. We present preliminary results from these data to identify the sampling strategies for urban areas that are efficient (low cost) and flexible (do not impose a priori definitions of a child's environment). The central question is how the accuracy and validity of measures of the local environment change as one shifts scales from the respondent's block face to a group of blocks or to areas as large as census tracts.

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Examination of established scales from the Project on Human Development in Chicago Neighborhoods:
Will two items suffice?

| Scale | # of items | Step 1. Cronbach's alpha on full scale | Step 2. Drop one item at a time (each time, drop item with lowest correlation with total) | | Step 3. Regress each 2-item subscale on full scale. Identify highest r-sq. | | Step 4. Provide Cronbach's alpha for two variables from Step 3. |
|--|------------|--|---|----------|--|----------|---|
| | | Alpha: Full Scale | Alpha: 2 items | pair | R-square: 2 items | pair | Alpha: 2 items |
| Cohesion | 5 | 0.73 | 0.68 | 11B, 11E | 0.75 | 11E, 11M | 0.67 |
| Social Capital | 5 | 0.77 | 0.68 | 11P, 11T | 0.79 | 11G, 11P | 0.55 |
| Informal Social Control | 5 | 0.80 | 0.75 | 12A, 12B | 0.82 | 12A, 12E | 0.60 |
| Activism | 5 | 0.78 | 0.78 | 13C, 13E | 0.82 | 13A, 13E | 0.64 |
| Neighborhood Anonymity | 3 | 0.72 | 0.74 | 14, 15 | 0.91 | 15, 16 | 0.58 |
| Neighborhood Ties | 5 | 0.80 | 0.73 | 18, 19 | 0.81 | 18, 22 | 0.67 |
| Social Disorder | 6 | 0.88 | 0.76 | 29D, 29F | 0.86 | 29A, 29E | 0.71 |
| Perceived Violence | 5 | 0.85 | 0.85 | 30A, 30C | 0.87 | 30A, 30E | 0.69 |
| Intolerance of Deviance at Age 13 | 4 | 0.87 | 0.92 | 39B, 39C | 0.89 | 39B, 39D | 0.66 |
| Intolerance of Deviance at Age 19 | 4 | 0.86 | 0.85 | 40B, 40C | 0.90 | 40A, 40C | 0.78 |
| Anomie | 5 | 0.65 | 0.52 | 41B, 41C | 0.70 | 41B, 41F | 0.39 |
| Neighborhood Danger | 3 | 0.81 | 0.79 | 41G, 41I | 0.89 | 41G, 41H | 0.68 |
| Satisfaction with Policing | 7 | 0.81 | 0.82 | 42A, 42B | 0.78 | 42B, 29H | 0.69 |
| Neighborhood Improvement Over Past 5 Years | 4 | 0.81 | 0.75 | 42B, 42C | 0.86 | 42A, 42B | 0.73 |

Analyses formulated and conducted by members of the Brown University NCS Team, including John Logan, Stephen Buka, Michelle Rogers, and Seth Spielman.