

Supplementary Materials

Models for Neighborhood Disorder (ND):

Table A1: Items for Ecometric Model of Neighborhood Disorder

Item	Question	Respondent	Responses	Frequency (%)
ND1	Do you usually feel safe in your neighborhood?	Child	0) No	2,425 (11.69%)
			1) Yes	18,182 (87.65%)
ND2	In this neighborhood, how big a problem is litter or trash on the streets and sidewalks?	Parent	1) No problem at all	9,509 (54.09%)
			2) A small problem	6,887 (39.18%)
			3) A big problem	1,165 (6.63%)
ND3	In this neighborhood, how big a problem are drug dealers and drug users?	Parent	1) No problem at all	10,282 (58.42%)
			2) A small problem	5,339 (30.34%)
			3) A big problem	1,642 (9.33%)
ND4	How well kept is the building in which the respondent lives?	Interviewer	1) Very well kept	11,038 (53.23%)
			2) Fairly well kept	6,301 (30.38%)
			3) Poorly kept	2,077 (10.02%)
			4) Very poorly kept	1,002 (4.83%)
ND5	How well kept are most of the buildings on the street?	Interviewer	1) Very well kept	7,315 (35.27%)
			2) Fairly well kept	6,092 (29.38%)
			3) Poorly kept	1,639 (7.90%)
			4) Very poorly kept	455 (2.19%)
ND6	When you went to the respondent's home, did you feel concerned for your safety?	Interviewer	0) No	19,495 (94.01%)
			1) Yes	992 (4.78%)

All items with more than two categories (four items in total) were dichotomized in order to have consistent indicators for the multilevel model. Descriptive statistics for these items are presented in Table A1. Both items from the parent interview were recoded so that the “No problem at all” category was coded as 0 and both the “A small problem” category and the “A big problem category” were coded as 1. For the two items from the interviewer related to housing quality, houses and surrounding buildings identified as very well kept or fairly well kept were coded as 0. House and building identified as poorly kept or very poorly kept were coded as 1. The child item asking whether the child felt safe in their neighborhood was reverse coded so that 1 indicated feeling unsafe. The result was six indicators where ones indicated the presence of some physical or social disorder ($\alpha = .73$) and showed moderate clustering within neighborhoods (ICC = .223).

In order to determine ND scores for each neighborhood, we fit a three-level model with items nested within individuals, nested within neighborhoods. Estimates from this model are provided in Table A2. After fitting the model the predicted value of the random intercept of each neighborhood (otherwise known as Empirical Bayes estimates or posterior means) was used as that neighborhoods ND value. These values were standardized to ease interpretation. The coefficients in the model represent item severity. The greater the value is from zero, the more severe the indicator. A quick check of the items showed that the two focused on neighborhood safety (ND1 and ND6) were the most severe, with items pertaining to physical conditions (ND4 and ND5) demonstrating less overall severity, as to be expected. The only item that was not significant pertained to parents rating of how much a problem litter and trash was in their neighborhood (ND2), perhaps reflecting that this is not an ideal indicator for disorder.

$$\lambda_{pk} = \frac{Var(\beta_{pk})}{Var(\hat{\beta}_{pk})} \approx \frac{\omega_{pp}}{\omega_{pp} + \frac{\tau_{pp}}{J_k} + \frac{1}{n_k J_k w_k}}$$

Eq 1: Calculation of Reliability for Ecometric Measures (Raudenbush and Sampson 1999)

Equation 1 provides the formula for calculating reliability when using the ecometrics approach to create neighborhood level measures. Reliability of the ND scale for each neighborhood (λ_{pk}) was calculated by comparing the between neighborhood variance (ω_{pp}) to the sum of the between neighborhood variance, the within neighborhood variance weighted (τ_{pp}) by the number of individuals within each neighborhood (J_k), and one over the product of the mean number of items per individual in each neighborhood (n_k), the average proportion of items coded 1 times the average proportion of items coded zero per neighborhood (w_k), and the number of individuals in that neighborhood (Equation 10 in Raudenbush and Sampson 1999). Overall the scale showed modest reliability, with an average reliability of .67 (SD = .22) across neighborhoods.

Table A2: Three-level Logistic Regression Model for Neighborhood Disorder

Item	Difficulty	SE	95% CI	
ND1	2.5198	0.0423	2.4368	2.6028
ND2	0.0722	0.0369	-0.0002	0.1445
ND3	0.3740	0.0372	0.3010	0.4469
ND4	2.2000	0.0408	2.1200	2.2801
ND5	2.3908	0.0442	2.3040	2.4775
ND6	3.6928	3.6928	3.5917	3.7940
Variance: Neighborhood	1.2649	0.0776	1.1215	1.4266
Variance: Individual	1.1138	0.0402	1.0378	1.1953
N of Items	100,987			
N of Individuals	18,738			
N of Neighborhoods	2,344			