The neighborhood ethnoracial and socioeconomic context of public elementary school closures in U.S. metropolitan areas

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Background

- Public school closures have been increasing in urban areas
  - The number of school closures in the 100 largest metropolitan areas increased from 5.5 to 10.6 closures per 1,000 schools (McFarland et al. 2017)
- Closures may impact neighborhoods
  - Diminish neighborhood social cohesion, decrease property values, increase local crime (Ewing, 2018)
- Are closures located in certain types of neighborhoods?
  - Potentially alters spatial racial and socioeconomic inequalities

Background

- Minority and socioeconomically disadvantaged neighborhoods
  - School reform
  - Urban revitalization
- Focus has been on white and black composition
  - Varying predictions with Hispanic composition

Background

- Neighborhood change
  - Gentrification

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- Neighborhood change
  - Gentrification
  - Increasing minority presence and socioeconomic disadvantage
  - Stable composition
  - No association with change

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- Differences by
  - Region
  - Suburban vs urban

Research questions

1. What is the association between public elementary school closures and neighborhood racial and socioeconomic composition?
2. What is the association between public elementary school closures and **changes in** neighborhood racial and socioeconomic composition?
3. Are there differences in these relationships across region and urban/suburban?

Data

1. National Center of Educational Statistics (NCES) Common Core of Data (CCD)
2. 2009-10 School Attendance Boundary Information System (SABINS)
3. 1990 and 2010 decennial Census and 2008-12 American Community Survey (ACS)

- Unit of analysis: School attendance boundary
- Analytic sample: 14,563 elementary SABs in 266 metropolitan areas

Dependent variable

- Elementary schools enrolling 4th-grade students that were open and operational in 2010 and
- Closed between 2010 and 2016
- CCD School status and enrollment data

Neighborhood variables

1. 2010 Composition
   - % Hispanic and Non-Hispanic white, black, Asian
   - SES factor analysis scores
     - median household income, median rent, median home value, % professional occupations, % with a college degree
2. Change over time
   - 2000-2010 change in % race/ethnicity
   - 1990-2010 change in SES relative rank:
     1. Ascending SES
     2. Descending SES
     3. Stable Upper SES
     4. Stable Mid and Low SES

Methods

- Logistic regression
  - Outcome: School closed or not between 2010 and 2016
  - Independent variables
    - Neighborhood race/ethnicity and SES in 2010
    - Change in neighborhood race/ethnicity and SES
    - Neighborhood and school controls

Methods

- Logistic regression
  - Outcome: School closed or not between 2010 and 2016
  - Independent variables
    - Neighborhood race/ethnicity and SES in 2010
    - Change in neighborhood race/ethnicity and SES
    - Neighborhood and school controls
  - Models stratified by
    1. Region: West, South, Northeast, Midwest
    2. Urban and Suburban locale (NCES definitions)

Current Neighborhood Composition

	(1)	(2)	(3)	(4)
SES Index	0.40***			
% black		1.02***		
% Hispanic			0.99**	
% white				0.99**

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Change in Neighborhood Composition

	(1)	(2)	(3)	(4)
Δ *in SES*				
Ascending	1.28			
Upper-SES	1.09			
Stable Low and Mid SES	1.25*			
Δ % black		0.99		
Δ % Hispanic			1.00	
Δ % white				0.99**

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Urban vs. Suburban

	Urban (N = 8,054)								Suburban (N = 6,509)							
	(1)		(2)		(3)		(4)		(1)		(2)		(3)		(4)	
	b	p	b	p	b	p	b	p	b	p	b	p	b	p	b	p
% Black			0.07***	0.00							0.06***	0.00				
			(0.01)								(0.01)					
Change % Black			−0.03	0.17							−0.04	0.08				
			(0.02)								(0.02)					
% Hispanic					−0.05***	0.00							0.01	0.49		
					(0.01)								(0.02)			
Change % Hispanic					0.00	0.88							−0.05	0.10		
					(0.03)								(0.03)			
% White							−0.04***	0.00							−0.04***	0.00
							(0.01)								(0.01)	
Change % White							0.05*	0.01							0.04	0.10
							(0.02)								(0.02)	
SES Index	−5.23***	0.00	−4.38***	0.00	−5.10***	0.00	−4.83***	0.00	−1.99***	0.00	−1.67***	0.00	−2.17***	0.00	−1.63***	0.00
	(0.81)		(0.71)		(0.73)		(0.81)		(0.49)		(0.48)		(0.49)		(0.46)	
Change in SES																
Ascending	1.81*	0.02	0.59*	0.02	0.20*	0.01	0.45	0.09	0.20	0.78	−0.07	0.85	−0.03	0.97	−0.29	0.89
	(0.74)		(1.41)		(1.24)		(1.51)		(0.71)		(1.03)		(1.09)		(1.03)	
Upper-SES	0.45	0.74	0.75	0.67	1.07	0.87	0.56	0.76	−0.03	0.98	0.78	0.95	0.75	0.98	0.56	0.78
	(1.39)		(0.47)		(0.47)		(0.51)		(1.05)		(0.53)		(0.56)		(0.55)	
Stable	0.93*	0.04	1.66	0.11	1.89*	0.02	1.23	0.27	0.82	0.12	0.13	0.14	−0.02	0.18	−0.10	0.30
	(0.46)		(0.73)		(0.72)		(0.74)		(0.53)		(0.69)		(0.74)		(0.72)	

Regional differences

- Greater percent black and lower SES associated with closure across all regions
- Greater percent Hispanic associated with no closure in West and Northeast

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1. Northeast and Midwest
   - Closely follows aggregate models
   - Gentrification in Northeast
2. West
   - Increasing percent Hispanic - greater prob. closure
   - Increasing percent black - lower prob. closure
3. South
   - Increasing percent white - greater prob. closure
   - Increasing percent black - lower prob. closure

Conclusion

- Closures located in neighborhoods with
  - higher % black
  - lower % white
  - lower SES
  - lower % Hispanic
- Also associated with neighborhood change
  - Gentrification
- Important regional differences
  - Midwest and Northeast vs South and West

Conclusion

- Implications
  - Potential for exacerbating existing inequalities
    - How do closures impact neighborhoods?
  - Policymakers incorporate where closures ocurr in the decision matrix
    - Both current and trajectory matters
  - Heterogeneity in where closures occur
    - Not just in historically segregated cities in the Midwest and Northeast

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