

Ethnic segregation of friendship networks in school

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Existing Literature

- Shows that ethnic segregation is a persistent feature of adolescent networks
- Shows that segregation causes many issues
 - Developing language proficiency
 - Decreases value in labor market
- Shows that childhood segregation is reinforced as an adult
- Only looks at classroom-based school networks

The Boundary Specification Problem

- How is the boundary of a friendship defined?
- Students meet outside of classrooms
- Most school-based network analysis is done on classroom level
- Little research on how the boundary affects ethnic composition of networks

H1 - Ethnic homophily in low and high cost situations

- People befriend those who are similar to them
- Same-ethnic friendships are lower cost, and more rewarding
- Ethnic homophily is more pronounced in high cost situations

H2 - Classroom and grade level networks as low and high cost situations

- Classroom friendships are extremely low cost
 - The classroom serves as a focal point
- Grade level friendships are high cost
 - Fewer opportunities to meet, less common experiences

H3 - Ethnic homophily is particularly pronounced for grade-level friendships

- This would mean the degree to which ethnic segregation is measured in schools is systematically underestimated

Data

- Two waves of panel data, taken May 2013 and Feb 2014
- Approximately 2000 students in grades 5, 6, and 7, from 9 German schools
- Friendship networks created by asking to nominate up to 10 best friends
- Average classroom = 26 students
- Average grade = 85 students

	Wave 1		Wave 2	
	Within	Between	Within	Between
Germany	47.8	56.8	47.2	52.8
Turkey	51.0	66.4	50.6	66.9
Poland	7.6	9.0	8.3	14.8
Southern European	8.0	13.0	8.9	15.6
Former Soviet Union	21.7	26.0	21.2	30.7
Former Yugoslavia	8.7	9.1	8.8	13.4
Near East	24.1	24.9	22.0	24.5
Non-Western	2.7	6.6	1.8	7.5
Western	4.8	0.0	7.6	5.0
Number of students	922		959	

Stochastic Actor Oriented Models

- Useful for “waves” of observations
- Models change from the perspective of actors (nodes)
- Assume micro-steps cause changes
- SAOM doesn't assume the network is in a temporary state of equilibrium (like ERGM)

Stochastic Actor Oriented Models

- Allows easier controlling for structural components of the network (reciprocity, transitivity)
- Controlled for absence of opportunity
- Controlled for relative size of ethnic groups

Variables

- Ethnic Background
- Same ethnic background
- Sex
- Different classroom
- Same neighborhood (ethnic enclaves)
- Same elementary school

Model 1 Results

- Same elementary school has an effect
- Same neighborhood does not, this speaks (somewhat) against ethnic enclaves
- Same ethnic background
- Different classroom has a strong negative effect

	Model 1	
	Mean est.	SE
Outdegree	-2.02	.09*
Reciprocity	1.02	.07*
Transitive triplets	.21	.01*
Sex		
Alter	.07	.05*
Ego	-.10	.07*
Same	.65	.07*
Same elementary school	.15	.05*
Same neighborhood	.01	.03
Same ethnic background	.16	.06*
Different classroom	-.76	.08*
Different classroom × same ethnic background		
Number of grades	13	
Number of students	1258	

Model 2 Results

- Different classroom and having the same ethnic background
- Indication that students preference to have same-ethnic friends between classrooms is more pronounced
- Otherwise “identical” to Model 1

	Model 2	
	Mean est.	SE
Outdegree	-2.03	.05*
Reciprocity	1.05	.08*
Transitive triplets	.22	.01*
Sex		
Alter	.09	.05*
Ego	-.09	.07*
Same	.63	.07*
Same elementary school	.14	.05*
Same neighborhood	-.01	.03
Same ethnic background	.07	.07*
Different classroom	-.82	.09*
Different classroom × same ethnic background	.29	.08*
Number of grades		13
Number of students		1258

Discussion

- Number of waves was low
- Did not measure individual preferences, or perceived costs
- Maybe ethnicity loses importance in the same classroom?
- Existing research by Snijders
- Detailed geolocated data
- Implications on existing research
- Implications on policy
 - Spreading out ethnic minorities equally in classrooms