

**Residential Segregation by Educational Status in Turkey, 2012:  
Assessing the Role of Political Preferences**

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## **Introduction**

The residential segregation of socioeconomic status groups has been a subject of longstanding interest to urban scholars because cities around the world continue to be divided (Musterd et al. 2017; Reardon et al. 2018; Tammaru et al. 2016). The spatial polarization created by segregation reflects the stratification of social groups in the larger society (Massey 2007). An unequal spatial opportunity structure is created whereby those with more resources and power have more immediate access to better schools, jobs, housing, and medical care than those with less resources and power (Logan and Molotch 1987; Massey and Denton 1993).

Globalization is a force that impacts inequalities in cities (Sassen 1991), but urban scholars continue to debate the role it plays in influencing the residential segregation of socioeconomic groups (Maloutas and Fujita 2012; Van Kempen and Murie 2009). Recent comparative studies of socioeconomic residential segregation in Asia and other non-European contexts have challenged the notion that globalization is an important force in affecting segregation and instead have found that the nature of the welfare state and housing regimes in societies often play more important roles (Maloutas and Fujita 2012; Marcinczak et al. 2016; Shen and Xiao 2019). Increasingly, experts in the field have suggested that the impact of globalization must be examined in tandem with national, institutional structures as well as place-based historical, social, and cultural factors (Burgers and Musterd 2002; Maloutas and Fujita 2012; Musterd et al. 2017; Van Kempen and Murie 2009).

A dimension that has largely been ignored by scholars studying socioeconomic segregation in a comparative context is the role of political preferences. In the recent, limited literature that exists on this issue, which has focused on the U.S., debate exists as to whether the political polarization has translated into spatial segregation (Gimpel and Hui 2015; Iyengar et al.

2019; Mummolo and Nall 2016). Mudde and Kaltwasser (2018) call for more research on this topic in Europe and suggest that those studying populism have stayed in “their comfort zone” and don’t link their work to other academic fields, like the study of segregation.

The present study focuses on variation in the residential segregation of educational groups within Turkey and examines the role of voting behavior on such segregation. Turkey presents an interesting case study to examine the impact of political preferences on socioeconomic residential segregation, given its increasing polarized electorate in recent years. Despite being a country with many parties, “the lion’s share of voter behavior appears to have been frozen into two mutually disagreeable and obstinate blocs” (Somer 2019: 43).

Turkey is also a good context to isolate the impact of political preferences on socioeconomic segregation because of other dimensions that predispose its cities to having high levels of segregation. As a nation, Turkey is among the highest in terms of its income inequality. In 2011, the Gini coefficient was .404 for Turkey (Turkstat 2013), which was a greater than the world average of .39 (The World Factbook 2013-2014). In addition, in Turkey there is significant variation across cities in terms of their connections to the global economy. The provinces of Istanbul and Ankara are classified as global cities (GaWC 2016). In addition, since the 1990s, Turkey’s industrial-based economy has broadened outside of Istanbul and Ankara to places like Adana, Denizli, Trabzon, Kayseri, and Konya (U.S. Department of State 2014). Finally, the housing regime in Turkey has been dominated by the private sector and has not provided social housing in the tradition that has been found in Western European countries (Ozdemir 2011).

Given that the level of income inequality is high in Turkey and the fact that it has witnessed unprecedented economic growth in the past decade, it is surprising that no current

research has examined residential segregation by socioeconomic status throughout the major provinces of Turkey. Several studies exist, but almost all of them focus on Istanbul and use data from 2000 or earlier, which are nearly two decades old and capture patterns that occurred before the major economic boom (Atac 2015; Eraydin 2008; Guvenc and Isik 2002; Pinarcioglu and Isik 2009; Tasan-Kok 2012). Atac (2015) examines segregation in Ankara as well as in five other provinces (Atac 2017), but she uses 2000 data. In addition to using older data and focusing on a very small number of areas in Turkey, another major limitation of the aforementioned research is that it is descriptive in nature and does not analyze the factors that are associated with the variation in residential segregation within Turkey.

The current, limited literature on residential segregation by SES finds moderate levels of segregation in Turkey. In Turkey, segregation by education level is somewhat greater than that on the basis of occupational status (Eraydin 2008; Guvenc and Isik 2002; Pinarcioglu and Isik 2009). For example, in 2000, in Istanbul, according to Pinarcioglu and Isik (2009), 49.3 percent of university graduates would have had to move to achieve an even residential distribution with primary school graduates.<sup>1</sup> The d-score, measuring segregation between high-level white-collar workers and blue-collar workers, was 40.4 percent. Atac (2015) finds that segregation is particularly high for university graduates, characterizing them as “hypersegregated.” What remains to be seen is whether such segregation persists beyond 2000.

The main goal of the present study is to examine the association between recent voting behavior and the residential segregation of educational groups while taking into account other important factors, like globalization, in explaining variation in segregation. We seek to make

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<sup>1</sup> This percentage, 49.3 percent, is referred to as the index of dissimilarity or “d-score,” indicating segregation between university and primary school graduates. It ranges from 0 (no segregation) to 100 (complete segregation) (Massey and Denton 1993).

three main contributions to the larger literature on socioeconomic segregation. First, we examine socioeconomic residential segregation specifically measured in terms of the separation of educational groups. Little research has explicitly focused on residential segregation by educational groups despite the sharp growth in this type of segregation in recent decades, and the studies that do exist have been exclusively descriptive in nature and have not examined the factors associated with such segregation (Domina 2006; Massey et al. 2009). Second, we explore the impact of political preferences on residential segregation by educational status, which has heretofore been absent from studies on socioeconomic segregation. Finally, we re-examine the impact of globalization on socioeconomic segregation in a context with high levels of political polarization and economic inequality and where the state has been absent in providing low-income groups with housing.

## **Data and Methods**

*Data.* The unit of analysis in this study is at the province level, and there are 81 provinces in Turkey. The data we use for this study come from four sources. The first source is the 2012 Address-Based Population Registry System (ABPRS) maintained by the Turkish Statistical Institute. Since 2007, on an annual basis, the ABPRS collects a limited set of data on all households, on their age, sex, marital status, education, literacy, and migration. These data are available at the province level on the Turkish Statistical Institute's website. By special request, we were able to obtain these data at the "mahalle" or neighborhood level within each of the provinces in order to calculate indices of dissimilarity (discussed below) to gauge the residential segregation of educational groups. Data for our independent variables come from three other sources -- 2011 voting data from archives maintained by Turkey's Supreme Election Council

(Supreme Election Council 2019), the GaWC classification of global cities (GaWC 2016), and the 2011 Turkish Census of Population and Housing (hereafter referred to as “Turkish census data”).

*Variables.* Using data from the 2012 ABPRS, we measure residential segregation in provinces in Turkey, using the well-known index of dissimilarity. The index of dissimilarity measures the evenness of two groups over a geographic unit of interest, in this case neighborhoods. Dissimilarity or “d-scores” are calculated for provinces with at least 1000 people in each educational category, as segregation indices are less accurate for areas with smaller populations (Iceland et al. 2002). Because the index of dissimilarity can only consider residential segregation between two groups, we examine segregation of the two most extreme groups – those with no schooling and those with a Bachelor’s degree or more – relative to the other educational groups (i.e., no schooling versus a) primary-school education, b) middle-school education, c) high-school education and d) Bachelor’s degree or more; and Bachelor’s degree or more versus a) no schooling, b) primary-school education, c) high-school education).

The index of dissimilarity or “d-score” is the most commonly used measure of residential segregation found in the literature. Dissimilarity indices range from 0, indicating no segregation, to 1, indicating complete segregation. It may be interpreted as the proportion of either group that would have to move in order to achieve a fully integrated residential distribution. In general, dissimilarity indices that are over .60 are considered to indicate “high” levels of segregation; indices between .30 and .60 indicate “moderate” segregation; and less than .30 indicate “low” segregation (Massey and Denton 1993). Although there are several measures that may be calculated to characterize the residential segregation of groups, we focus on this index because of its widespread use in the literature and ease of interpretation.

In order to understand whether political preferences influence variation in the aforementioned segregation scores, we create a measure for each province of the percentage of votes going to the Republican People's Party (CHP) in the 2011 general election, using data from Turkey's Supreme Election Council.<sup>2</sup> CHP is the liberal party in Turkey that is in opposition to the party of the current President. Because globalization is a key force influencing residential segregation, we also categorize the provinces as Istanbul and Ankara as "global cities," which is consistent with the GaWC classification (GaWC 2016). In addition to those key independent variables, we include a number of control variables, at the province-level, in our multivariate analyses: 1) dummy variables gauging whether the industrial structure in the province is comprised of employment in: a) agriculture and service (ref.); b) predominantly service; c) service and manufacturing; and d) agriculture, service, and manufacturing; 2) the unemployment rate; 3) percent of the population with no schooling (in the models predicting the segregation of no schooling versus other groups); 4) percent of the population with a Bachelor's degree or more (in the models predicting the segregation of those with a Bachelor's degree or more versus other groups); 5) population that is more than 15 years old per 100,000 population; 6) percentage of the population who is 65 years old or older; 7) percentage of immigrants; and 8) percentage of owner-occupied housing.

*Analyses.* We report the mean dissimilarity scores and descriptive statistics for our key independent and control variables. After that we present multivariate analyses to examine the factors associated with the variation in residential segregation by education. We use ordinary least squares (OLS) regression analyses. Our main objective is to determine whether there is an association between political preferences and residential segregation of educational groups.

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<sup>2</sup> We use the acronym translated into Turkish (CHP) to refer to this party.

## Results

Our descriptive results begin in Table 1. The first set of results presents d-scores for those with no schooling compared to the other educational groups. Across the provinces, the average level of segregation between those with no schooling and primary schooling is quite low at .15. Similarly, the mean level of segregation between those with no schooling and those with a middle-school education is .13. The levels of residential segregation are higher as the difference in education becomes larger. The average levels of segregation between those with no school and those with a high-school degree or those with a Bachelor's degree or more are .32 and .46 respectively, thereby falling into the "moderate" segregation range. With respect to the latter, 46 percent of people with no schooling or a Bachelor's degree or more would have to move within the province to achieve an even residential distribution.

The second set of results in Table 1 show indices of dissimilarity between those with a Bachelor's degree or more education and those in the other educational groups. The results reveal that segregation is lowest, at .21, between those with a Bachelor's degree or more and those with a high-school education. However, those with no schooling, a primary-school education, and a middle-school education are all moderately segregated from those with a Bachelor's degree or more, exhibiting d-scores of .46, .49, and .40, respectively. Taken together, these results are consistent with results using 2000 data (Atac 2015; Eraydin 2008; Guvenc and Isik 2002; Pinarcioglu and Isik 2009) and suggest that provinces in Turkey remain moderately segregated on the basis of socioeconomic status.

Table 2 reports descriptive statistics on political preferences and socioeconomic and demographic characteristics of the population in 2012. On average, 21.09 percent of the population voted for CHP across provinces, with the minimum value being .9 percent and the

maximum value being 57.53 percent. Clearly there is variation across provinces in people's political preferences. As we mentioned above, we define the two provinces, Istanbul and Ankara, as "global cities." With respect to the characterization of the industrial structure of provinces, we find that the most common pattern is a mix of service, agriculture, and manufacturing, with 41 percent of provinces exhibiting this labor market structure. The second most common form is predominantly service, with 33 percent of provinces being best characterized by that type of labor market. The average unemployment rate for the provinces are 7.77 which ranges from 3.46 to 15.28 across the provinces.

When we examine the population by educational status for people who are above 25, on average, just over 18 percent of the population has no schooling and only 10.6 percent of the population has a Bachelor's degree or more. On average, there are 6.87 people who are above 15 years old per 100,000 population at the province level. The average percent of the population that is 65 years old or older is 9 percent. On average, only 0.09 percent of the population is comprised of immigrants. Finally, the average level of owner-occupied housing across provinces is 71 percent.

Table 3 reports the results of our multivariate models examining the factors associated with the variation in residential segregation by education. The table reports coefficients and standard errors from four OLS regression models. We focus our analyses specifically on analyzing variation in segregation among the four pairwise groups that exhibited the highest average segregation scores in Table 1. In the first two models, the dependent variables are the d-scores that are created relative to the no schooling educational group. In the second two models, the dependent variable is d-scores for educational status that are created relative to people with a Bachelor's degree or more.

Turning to our key independent variable across the models, the percentage of votes to CHP, we find that it is positively and significantly associated with three of the four pairwise segregation in models 2, 3, and 4. As shown in model 2, a one-unit increase in the percentage of votes to CHP increases the segregation between those with no schooling and those with a Bachelor's degree or more by .0019 units. Thus, a 10-unit or 10 percentage point increase in the percentage voting for CHP would result in a .19 unit increase in segregation between these groups, which is fairly substantial. Even more significant are the coefficients for the percentage of votes to CHP in models 3 and 4. A 10-unit increase in the percentage of votes to CHP would result in a .24 increase in segregation between those with a Bachelor's degree or more and those with a primary-school education and a .20 increase in segregation between those with a Bachelor's degree or more and those with a middle-school education, respectively.

The association between global cities and segregation is only statistically significant in models 3 and 4. Controlling for other factors, the segregation score between those with a Bachelor's degree or more and those with a primary-school education is .1829 units higher in global cities than in non-global cities. Similarly, the segregation score between those with a Bachelor's degree or more and those with a middle-school education is .1203 units higher in global cities than in non-global cities. This is consistent with other research done suggesting that globalization exacerbates socioeconomic residential segregation (Sassen 1991).

### **Preliminary Conclusions**

Residential segregation by socioeconomic status remains at a moderate level in Turkey, particularly between groups at the extremes of the educational spectrum. The results here reveal that the political preferences of the population are significantly associated with residential

segregation by education in Turkey in 2012, controlling for other factors that have been deemed important in previous research, including globalization (Sassen 1991). Our findings suggest that these political preferences could be a proxy for the institutional structures as well as place-based historical, social, and cultural factors that promote socioeconomic segregation in Turkey. Future research should build on this work to elaborate on these other aspects of the segregation regime that experts have deemed as increasing important in today's divided cities (Burgers and Musterd 2002; Maloutas and Fujita 2012; Musterd et al. 2017; Van Kempen and Murie 2009).

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**Table 1: Mean Dissimilarity Scores by Educational Status for Provinces in Turkey, 2012**

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	Mean	Standard Deviation	Minimum	Maximum	N
<i>Reference Group: No Schooling</i>					
Primary School	0.15	0.04	0.08	0.29	81
Middle School	0.13	0.04	0.06	0.24	81
High School	0.32	0.08	0.18	0.5	81
Bachelor's degree or more	0.46	0.09	0.27	0.73	81
<i>Reference group: Bachelor's degree or more</i>					
No Schooling	0.46	0.09	0.27	0.73	81
Primary School	0.49	0.08	0.31	0.8	81
Middle School	0.40	0.07	0.24	0.65	81
High School	0.21	0.04	0.14	0.36	81

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**Table 2: Socioeconomic and Demographic Characteristics of Provinces in Turkey, 2012**

Variables	Standard		Minimum	Maximum	N
	Mean	Deviation			
Percentage of votes to CHP	21.09	13.42	0.9	57.53	81
Global cities	0.02	0.16	0	1	81
Industry					
Service-Agriculture	0.11	0.32	0	1	81
Predominantly Service	0.33	0.47	0	1	81
Service-Manufacturing	0.15	0.36	0	1	81
Service-Agriculture-Manufacturing	0.41	0.49	0	1	81
Unemployment rate	7.77	2.41	3.46	15.28	81
Percent of population with no schooling (over 25)	18.18	4.1	9.47	27.39	81
Percent of population with Bachelor's degree or more (over 25)	10.59	2.77	6.6	23.91	81
Population that is more than 15 years old per 100,000 population	6.87	12.52	0.58	103.68	81
Percent of the population aged 65 and older	9	3.16	2.82	16.7	81
Percent immigrants (over 1 year of age)	0.09	0.12	0	0.49	81
Percentage of owner-occupied housing	71.69	5.19	59.46	84.31	81

**Table 3: OLS Regression Models for Segregation by Educational Status for Provinces in Turkey, 2012**

	Models by Educational D-Score							
	No school-high school		No school - Bachelor's degree or more		Bachelor's degree or more - primary school		Bachelor's degree or more - middle school	
	(1)		(2)		(3)		(4)	
Percentage of votes to CHP	0.0011		0.0019	*	0.0024	***	0.002	**
	0.0007		0.0008		0.0007		0.0007	
Global cities	-0.1021		-0.0451		0.1829	*	0.1203	+
	0.0687		0.0759		0.0713		0.0703	
Industry (ref. = Agriculture-Service)								
Predominantly Service	-0.0359		-0.06	*	-0.0591	*	-0.0558	*
	0.0255		0.0282		0.0247		0.0243	
Service/Manufacturing	-0.0706	*	-0.0955	**	-0.1104	***	-0.0973	***
	0.0285		0.0314		0.0268		0.0264	
Agriculture/Service/Manufacturing	-0.0192		-0.0256		-0.0426	*	-0.0339	
	0.0215		0.0238		0.0207		0.0204	
Unemployment rate	-0.012	**	-0.0135	**	-0.0115	***	-0.0089	**
	0.0036		0.004		0.0033		0.0032	
Percent of population with no schooling (over 25)	0.0094	***	0.0075	**				
	0.0025		0.0027					
Percent of population with Bachelor's degree or more (over 25)					-0.015	***	-0.0121	**
					0.0038		0.0038	
Population that is more than 15 years old per 100,000 population	0.0011		0.0006		-0.0018	*	-0.0006	
	0.0009		0.001		0.0009		0.0009	
Percent of the population aged 65 and older	-0.0148	***	-0.0216	***	-0.007	*	-0.0165	***
	0.0034		0.0038		0.0031		0.003	
Percent immigrants (over 1 year of age)	-0.011		-0.0581		-0.173	**	-0.1176	*
	0.0623		0.0688		0.0583		0.0575	
Percentage of owner-occupied housing	0.0039	*	0.0048	*	0.0006		-0.0004	
	0.0018		0.002		0.0018		0.0018	
Intercept	0.0933		0.2815	+	0.7883	***	0.7865	***
	0.1424		0.1572		0.1638		0.1615	
Observations	81		81		81		81	
Adjusted R <sup>2</sup>	0.5553		0.566		0.5706		0.4819	
F Statistic	10.0807	***	10.4838	***	10.6651	***	7.7642	***

Note: '\*\*\*'  $p < 0.001$ ; '\*\*'  $p < 0.01$ ; '\*'  $p < 0.05$ ; '+'  $p < 0.1$