

HOW IS THE PLACES IN YOUR BOROUGH RELATED TO THE VOTING HABITS?

Business Case

For many years ruling party and its leader in Turkey tried to divide the society into two and keep their supporters consolidated without allowing any pass through between two sides. As a result the opposition began to react as a block against the regime which became more and more autocratic in 17 years. Finally the opposition broke the chains in 2019 local elections and won the elections in most populated cities including Ankara, the capital and Istanbul, the biggest. Even the elections of Istanbul Metropolitan Municipality canceled without any legal background and real evidence by the suppression of the president to the judicial board of elections, the opposition was able to win second time with more than 800K votes difference.

The political parties are investing a lot to measure the aim of the electors and to convince them to vote for their party. The environment where the voter lives is very much related to her/his choices. In this study I will pursue an answer to this question by comparing venues data from Foursquare and voting rates to the 2 main political parties in Istanbul.

Data

I formed a geojson file for Istanbul boroughs. To form an Istanbul geojson file I used the polygon data from this link <https://github.com/melihkorkmaz/il-ilce-mahalle-geolocation-rest-api> The data of one borough was missing, i formed it manually by working on the map.

And the results for 2 elections are loaded from <https://sonuc.ysk.gov.tr/sorgu>

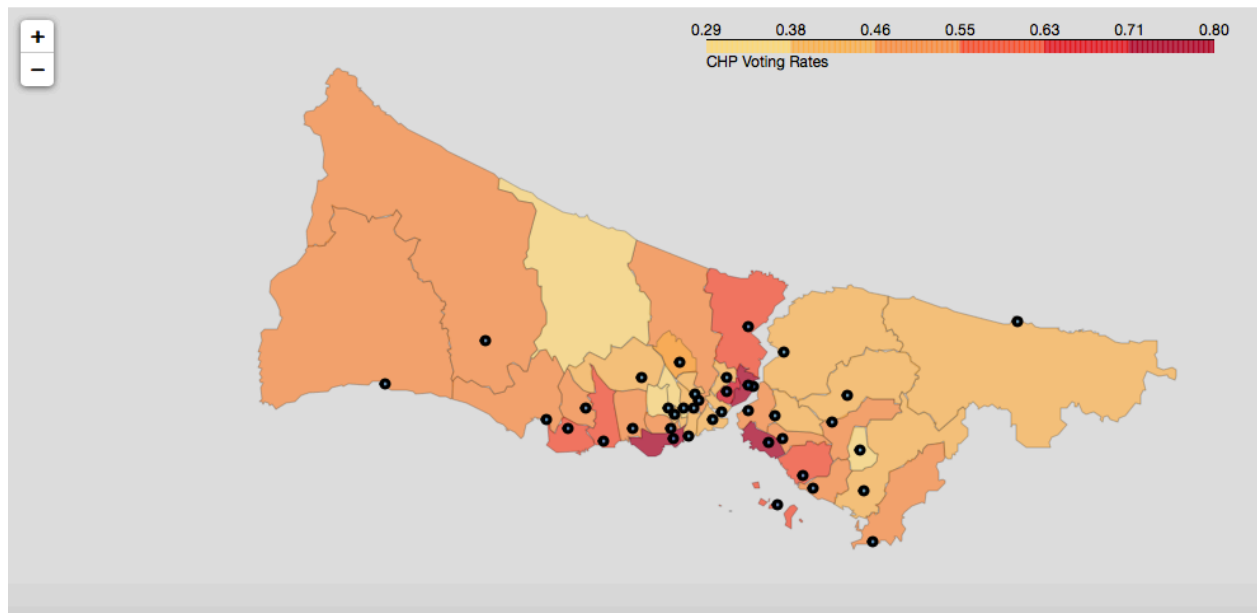
Finally Foursquare API data is used.

Analysis

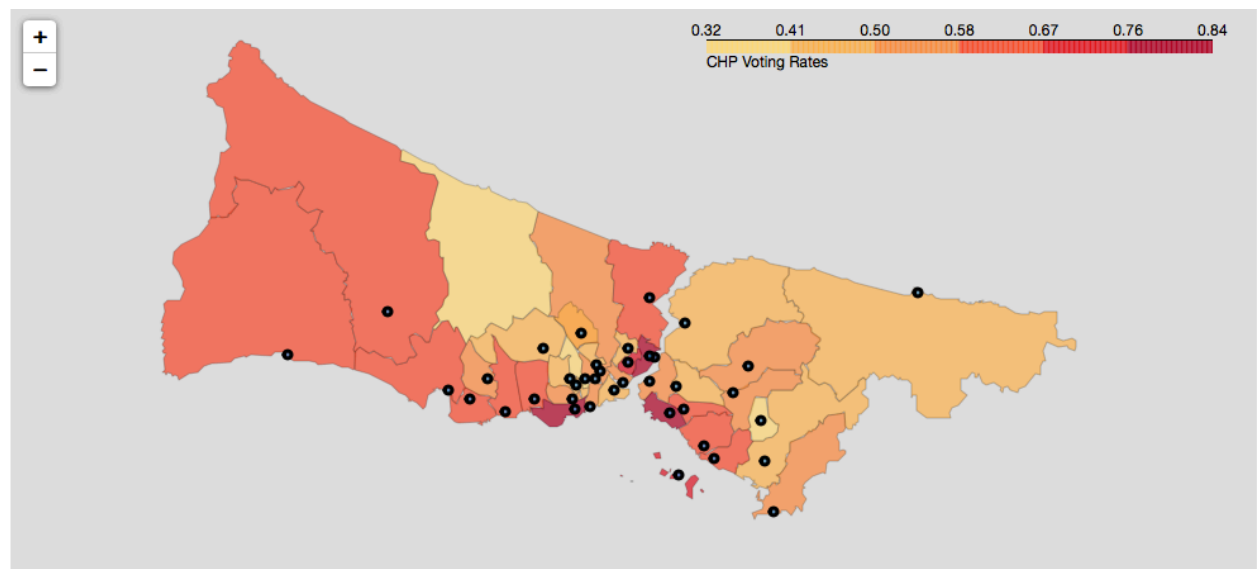
Since CHP's candidate Ekrem İmamoğlu who was a common candidate for the opposition won the election two times the analysis is build upon CHP votes.

When the Graph1 and Graph2 below are compared, it is obvious that from all towns of Istanbul people tend to vote more to Ekrem İmamoğlu.

Graph 1: Voting Rates for CHP's Candidate on March 31st

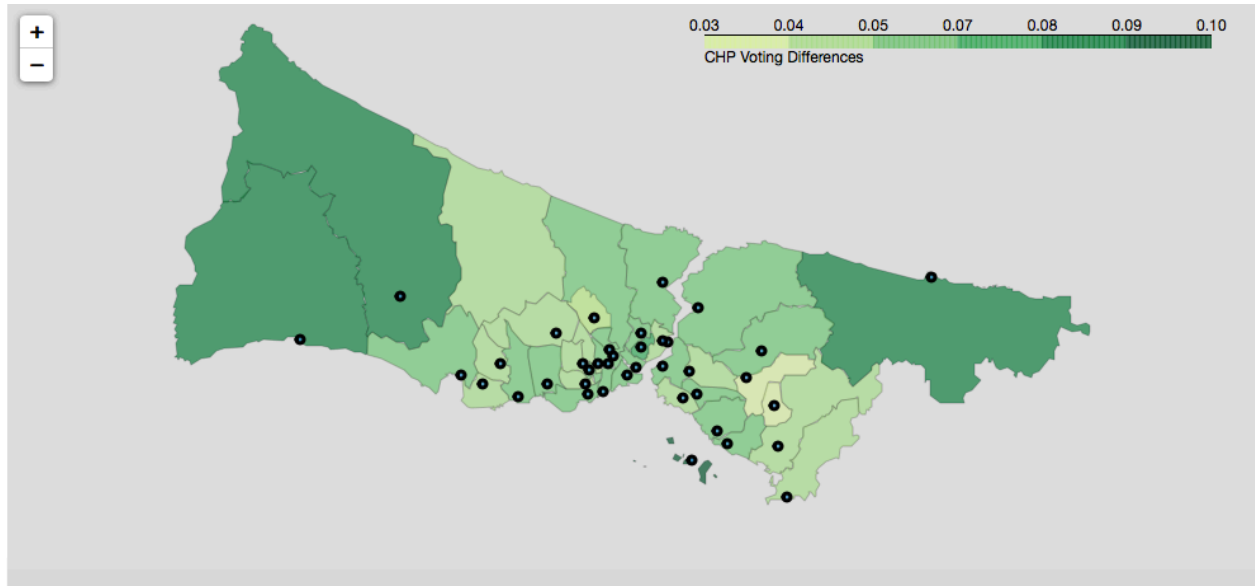


Graph 2: Voting Rates for CHP's candidate on June 23rd



The third graph depicts the differences by borough.

Graph 3: Voting Differences Between March 31st and June 23rd in favor of CHP



With the Foursquare venue data the boroughs of Istanbul are clustered into 3. And voting habits for this 3 clusters are first analyzed for the first elections and then the difference of votes between 2 elections is analyzed.

Table 1: Cluster 0

CLUSTER 0:
CHP won in 6 boroughs.
AKP won in 5 boroughs.

	name	CHP_rate_31_3	AKP_rate_31_3	Lead
0	Sancaktepe	0.4769	0.5020	AKP
1	Esenyurt	0.5266	0.4551	CHP
2	Esenler	0.3303	0.6373	AKP
3	Bahçelievler	0.4687	0.5048	AKP
4	Gaziosmanpaşa	0.4059	0.5599	AKP
5	Maltepe	0.5751	0.4033	CHP
6	Üsküdar	0.4838	0.4877	AKP
7	Kartal	0.5276	0.4504	CHP
8	Avclar	0.5567	0.4269	CHP
9	Büyükcemece	0.5237	0.4614	CHP
10	Çatalca	0.5167	0.4669	CHP

Table 2: Cluster 1

CLUSTER 1:
 CHP won in 8 boroughs.
 AKP won in 11 boroughs.

	name	CHP_rate_31_3	AKP_rate_31_3	Lead
0	Sultanbeyli	0.2996	0.6654	AKP
1	Beylikdüzü	0.5750	0.4084	CHP
2	Kadıköy	0.7761	0.2061	CHP
3	Beşiktaş	0.7911	0.1915	CHP
4	Bağcılar	0.3762	0.5925	AKP
5	Ümraniye	0.4264	0.5461	AKP
6	Eyüpsultan	0.4847	0.4895	AKP
7	Ataşehir	0.5442	0.4351	CHP
8	Beşiktaş	0.4602	0.5099	AKP
9	Güngören	0.4326	0.5401	AKP
10	Fatih	0.4364	0.5327	AKP
11	Kağıthane	0.4255	0.5425	AKP
12	Zeytinburnu	0.4613	0.5122	AKP
13	Bayrampaşa	0.4450	0.5271	AKP
14	Küçükçekmece	0.5316	0.4437	CHP
15	Bakırköy	0.7286	0.2508	CHP
16	Şişli	0.6625	0.2930	CHP
17	Şile	0.4122	0.5664	AKP
18	Adalar	0.6087	0.3478	CHP

Table 3: Cluster 2

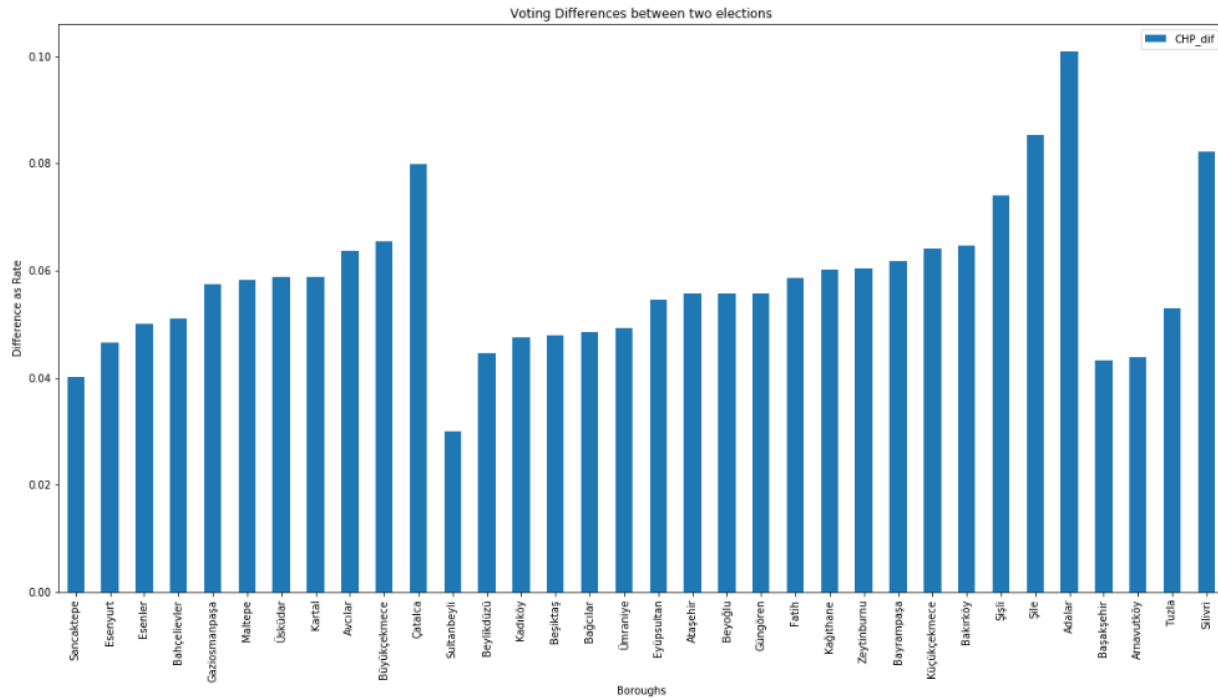
CLUSTER 2:
 CHP won in 2 boroughs.
 AKP won in 2 boroughs.

	name	CHP_rate_31_3	AKP_rate_31_3	Lead
0	Başakşehir	0.4322	0.5375	AKP
1	Arnavutköy	0.3439	0.6221	AKP
2	Tuzla	0.4792	0.4970	CHP
3	Silivri	0.5376	0.4335	CHP

When the 3 cluster data compared there is no statistical evidence that shows the voting habits between clusters are different.

The graph below shows the increase in the CHP votest between 2 elections. All the boroughs preferred to vote CHP over 4% compared to the previous election.

Graph 4: Voting Difference Between 2 Elections



Conclusion

When the voting difference between two elections compared there is not a specific behaviour among 3 clusters. All the boroughs changed their choices over %4 percent in the favor of CHP's candidate Ekrem İmamoğlu.

The environment where the voter lives is very much related to her/his choices. In this study I tried to understand the political aim of the Istanbul voters by using Foursquare data. We cannot say that with the clustering depend on the Foursquare data we can determine Istanbul boroughs' political choices. We need more details and other data sources.