AN ASSESSMENT OF THE SOCIAL AND ECONOMIC DETERMINANTS OF
PROVINCIAL VOTING BEHAVIOR IN TURKEY

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By

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ABSTRACT

Using fixed effects estimation, this study assesses the relationship between the provincial election results of 2002 and 2011 in Turkey's 81 provinces, and provincial socio-economic development level. To operationalize the socio-economic development level; urbanization rate, education level and income level are used. Some geographic variables are also used in order to take into account the geographical clustering in Turkish voting behavior.

The study finds a statistically significant correlation between the provincial voting behavior and provincial socio-economic development levels. The magnitude and direction of this correlation is very different across different economic and social development indicators and different political parties.

This study is novel in that it combines social, economic and geographic variables, which is crucial to achieving the high predictive power for provincial electoral behavior in Turkey. It is also the first study of its kind covering the whole period of 2002-2011, when the current ruling party took office, and comparing the voting behavior toward the three major political parties.

Keywords: voting behavior, political party, election

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INTRODUCTION

In 1923, after the collapse of the six-hundred-year-old Ottoman Empire, a theocratic monarchy, secular and democratic Turkish Republic was born. Even though it took one second to pronounce the new state a democracy, the actual transition to a democracy took decades in Turkish political history.

The history of Turkish democracy has been very eventful, especially in terms of political parties. In its relatively short period of democratic history, many political parties have been established, of which many were closed down by the Constitutional Court, and a series of military coups were staged.

However, despite the fact that Turkish democracy has had many problems, Turkey has one of the best functioning democracies in the Middle East[1]. Therefore, the long lasting protests and demonstrations occurring in the Arab world have brought Turkey into attention as a possible democratic model for those countries, especially since their political systems (i.e., dictatorships) are blamed by the protestors for the stagnant or deteriorating economic conditions. Besides geographic proximity and cultural/religious similarities to these countries, the relatively well functioning structure of Turkish democracy played an important role for Turkey to be seen as a role model. Therefore studies about the Turkish democracy are gaining more importance, not only to understand the dynamics of Turkish democracy, but also to evaluate the replicability of the Turkish democracy in the Arab world.

Political parties are the main actors in democratic systems. After about 90 years of

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[1] Democracy Index 2010, 2010, Economist Intelligence Unit, The Economist, http://graphics.eiu.com/PDF/Democracy_Index_2010_web.pdf (accessed 12.01, 2011).

democracy, in the 2011 elections, Turkey had three major political parties that could get enough votes to pass the election threshold of 10% and get their deputies into parliament. As is the case for any other democratic system, understanding Turkish political parties and hence their voter bases is of utmost importance to get a clear understanding of the Turkish democracy.

In this respect, the purpose of this paper is to investigate the characteristics of the Turkish voters at the provincial level. The main focus is on the relationship between the economic and social development indicators and voting behavior. The research question is: *whether the provincial socio-economic development level is associated with provincial voting behavior*? Using fixed effects regression method, the study tests the relationship between the provincial-level election results of 2002 and 2011, and the provincial level socio-economic development indicators for these years. To measure the provincial socio-economic development level the urbanization rate, income level, and education level are used as proxies.

The regression results show that provincial voting behavior is associated with some social and economic indicators that were used. Moreover, some variables are significant in explaining voting behavior only for some political parties. And some variables are not significant in explaining the provincial voting behavior towards any of these political parties.

BACKGROUND

The first parliamentary elections in Turkish history were held in 1877. Back then, however, Turkish territories were managed by monarchs and the power of parliament was restricted by the power of the monarchs (Kocak, 2009). In 1923, the monarchic system was abolished and the Turkish Republic was established. The first free multi-party elections, however, were not held until 1950 (Vanderlippe, 2005).

During the early years of the Turkish Republic, the Republican People's Party (RPP) and the Democrat Party (DP) dominated the elections and politics. In the elections held in 1950, 1954 and 1957, the DP got majority of the votes and took power alone after each election. In these three elections, the DP and the RPP collectively received more than 90 percent of the total votes. This pattern is an early representation of the main duality of Turkish voters. The RPP was the party of affluent urban dwellers, while the DP was supported mainly by the low-income people from rural areas.

In 1960, the Turkish military staged a coup claiming that the policies of the DP were threatening the principles of the secularist state. After the coup, the DP was banned from politics and Prime Minister Menderes was hanged (Migdalovitz, 2010). The newly established right-wing Justice Party (JP) won majority of the votes in 1965 and 1969 elections. In 1960s, instability caused by right-wing and left-wing violence plagued the country. In 1971, the military forced then Prime Minister Demirel to resign, demanding a strong government to put an end to social unrest.

The 1970s in Turkey were marked by armed conflicts between right-wing and left-wing citizens. During these years the control of the government shifted between the JP and the RPP. In 1980, Turkish military staged another coup, claiming that long-

lasting armed conflicts between right-wing and left-wing groups caused anarchy and the government was unable to prevent these conflicts (Dagi, 1996). The first elections after the coup were held in 1983. The newly established Motherland Party (MP), combining neoliberal economic policies with conservative social values, won the 1983 and 1987 elections.

During most of the 1990s, government power was held either by the Motherland Party or by the True Path Party. Both these parties promoted economically neoliberal and socially conservative values. Hence there was not a clear distinction between their voter bases.

In 1997, military intervened again. Military officers gave Prime Minister Erbakan an ultimatum saying that the principles of the secularist state were under threat due to his party's policies (Ersel, 2011). This ultimatum precipitated the resignation of the prime minister.

Looking at the historical process of Turkish democracy in 20th century, it can be said that politics has always been vibrant in Turkey. Many political parties have been established, many coalitions among different parties have been formed, military coups interrupted the functioning of the democratic system and some political parties were banned from politics by the Constitutional Court.

At the beginning of 21st century, after 60 years of free multi-party elections Turkey had three main political parties that could get enough votes to pass the election threshold of 10% and get their deputies into parliament. These parties are the Justice and Development Party (JDP), Republican People's Party (RPP), and the Nationalist Movement Party (NMP).

Founded in 2001, the JDP won three consecutive elections (2002, 2007, and 2011) and formed single party governments after each one. Currently, the JDP has the majority in the Grand National Assembly with vote share of 49.8% and 326 seats out of 550.

Established in 1923, RPP is the oldest political party in Turkey and the main opposition to the JDP in the Grand National Assembly. The RPP with the vote share of about 20-25% was the party with the second most votes during the 2002-2011 period. Currently, the RPP is the second largest party in the Grand National Assembly with the vote share of 26% and 135 seats.

The NMP, completed its formation in 1969, even though it remained under the election threshold of 10% in the 2002 elections, with the vote share of about 10-15% during 2002-2011 period, it was the party with the third most votes. Currently, the NMP is the third largest party in the Grand National Assembly with the vote share of 13% and 52 seats.

Even though fifteen parties entered in the 2011 elections, these three parties got roughly 90% of the votes, as shown in the Chart 1.

Chart 1: Percentage of the Vote Shares in the Last Three Elections
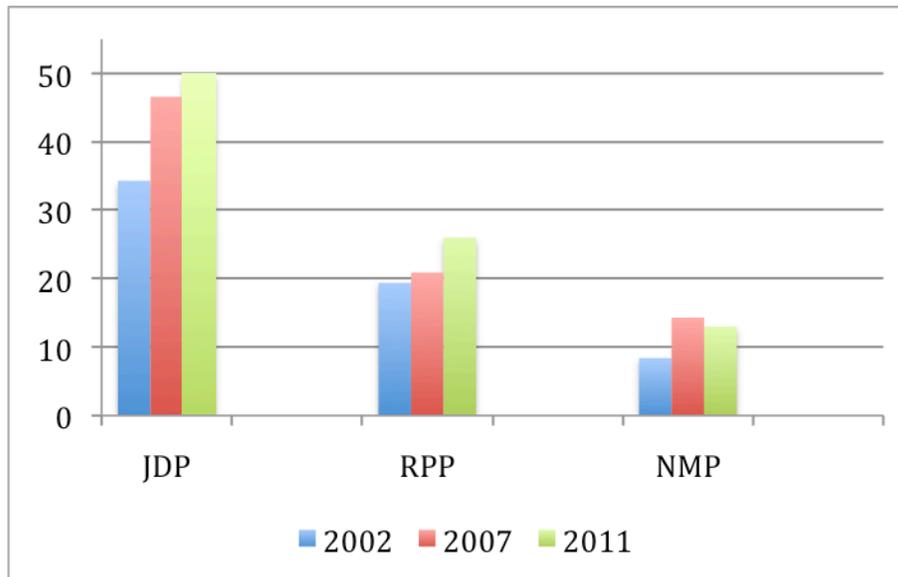
Data Source: Turkish Statistical Institute

Not only their total votes in the last election, but also the trend of electoral behavior shows that the JDP, RPP, and NMP are becoming more and more important in Turkish political life. Chart 1 shows that the JDP and RPP in particular increased their vote share in all of the last three elections.

These three political parties represent distinct values and the characteristics of the voter bases of these parties reflect these differences. Turkey has large socio-economic development disparities across regions and provinces. It is expected that the provincial differences in socio-economic development level may also have an effect on provincial voting behavior. Starting from the early years of Turkish free elections, it has been argued that the provincial socio-economic development indicators such as education, urban-rural settlement and income have been influential on the people's political party affiliations.

PRIOR RESEARCH ON VOTING BEHAVIOR

The modern history of academic voting behavior research began in 1940 at

Columbia University, where a team of social scientists assembled by Paul Lazarsfeld

pioneered the application of survey research to the study of electoral behavior (Bartels,

2008). Since then, a considerable amount of research has investigated voting behavior.

Lazarsfeld et al. (1944) find that religion and social class reinforced by face-to-

face interactions with like-minded acquaintances are the most important factors defining

people's political affiliation. Saenger (1945) finds that not only religion but also income

largely determines voting behavior and other aspects of political behavior. Campbell et

al. (1960) reiterate and elaborate Lazarsfeld's finding. They find that the political

affiliation is strongly influenced by partisan loyalties developed in early life.

Unlike the previous research, which investigated political behavior from voter's

perspective, Downs (1957) looks at voting behavior from political parties' perspectives

and argues that the competing parties should converge rapidly upon the center of the

distribution of voters if most voters are themselves relatively moderate. This conclusion

is actually just one step forward from Hotelling (1929), who argues that in two-party

elections, each party strives to make its platform as much like the other's as possible.

These two ideas came be called Hotelling-Downs model, and the "median voter" result

with two competing politicians have shaped virtually all subsequent research on electoral

competition (Sengupta, 2006).

Fiorina (1981) brought another dimension to the study of voting behavior when he

documented the importance of retrospective voting. He included variables tapping voters'

evaluations of economic conditions, foreign policy, and presidential performance in his models of voting behavior.

In the last decade, studies began to focus more on the socio-economic development levels of the voters. Weakliem (2000) finds that more education is associated with a higher support for the liberal parties. Dorji (2008) finds that there is a strong positive relationship between income level and political party association.

Alderman et al. (2009) find that demographic issues indicate that racial makeup, income rates, regional location, marital status, and population size all combine to affect the propensity of American cities to vote on either side of the ideological spectrum. They find that poorer and less educated than average regions tend to vote for liberal candidates at a higher rate than their conservative counterparts.

In Turkey voting behavior studies started with Ozbudun and Tachau (1975). The authors investigate the effect of provincial development level on voting behavior. This study groups Turkish provinces into ten categories, according to development level, and find that economic development level is a strong determinant of political party affiliation.

In 2000s rigorous quantitative analyses of Turkish voting behavior gained impetus. Ozler (2000) studies details of the relationship between socio-economic development and voting behavior. She focuses on the voting behavior of urban squatters and finds that political party identification of urban squatters changes in time. She notes that the voting strength of urban squatters was captured by right-wing parties in the 1960s, while it was captured by the left-to center RPP in 1970s. Esmer (2002) also finds that the urbanization rate is a significant variable in explaining the voting behavior in Turkey.

Akarca and Tansel (2007) predict 1995 election vote shares of political parties at provincial level using provincial data for growth rates, mean years of schooling, proportion of urban residents, net migration rate, and proportion of women in the non-agricultural employment. They find that the aforementioned economic and social indicators are associated with the party affiliations of the voters at provincial level.

After the JDP's two consecutive electoral success in 2002 and 2007, studies about voting behavior focusing on the voting base of the JDP gained popularity. Many studies were conducted to investigate the correlation between socio-economic development level of the region where the voters live, and their attitudes towards the ruling JDP. The large socio-economic development disparities across regions and provinces were the main motivation of the researchers to investigate this relationship.

Kalaycioglu (2008a) investigates the correlation between party identification and the independent variables of parental party identification, religiosity, ethnicity, and socio-economic status. He finds that urban-rural and social class differences do not play a significant role in determining the partisan affiliation towards the JDP, RPP and NMP.

Kalaycioglu (2008b) investigates the role of family socialization, ideological orientations, economic expectations, and the ethnic identities of voters on the voting behavior. He finds that family socialization is a major determinant of partisan affiliation for RPP and the NMP voters. For the JDP voters, however, he finds that economic performance plays a more important role in voting behavior. In contrast, Baslevent and Kirmanoglu (2009) find that socio-demographic, left-right, and religiosity variables provide strong predictive power for the choice of voters between the JDP and the RPP.

In this paper I analyze the effect of provincial level socio-economic development indicators on the provincial voting share of the JDP, RPP and NMP for the 2002 and 2010 elections. I expect that the economic and social indicators show similar patterns in provinces where the composition of the vote shares of these political parties is similar.

CONCEPTUAL MODEL

Dependent Variables

I use the election results from 81 provinces for three major political parties for 2002 and 2011 elections to operationalize voting behavior in Turkish general elections. As these three political parties together got around 90% of the total votes, only these three parties are put into the model. I use the percentage of the votes, instead of number of votes, to control for the variety in the populations of different provinces.

Independent Variables

The key independent variable is the provincial socio-economic development level. To operationalize it, I use three sets of variables: urbanization rate, education level and income level.

I- Urbanization Rate

The World Development Report 2009 argues that urban populations and national economies have expanded together in much of the world.[2] It is easier to provide water and sanitation to people living closer together, while healthcare, education, and other social and cultural services are also much more readily available[3]. Therefore I assume that the higher the urbanization rate, the more socio-economically developed the province.

Some other studies investigate the relationship between the urbanization rate and voting behavior. Chen and Rodden (2009) find that residential locations of voters matter

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[2] The World Bank, World Development Report 2009: Reshaping Economic Geography, 2008.
[3] The World Bank, Urban Development, http://data.worldbank.org/topic/urban-development (accessed 01.30.2012).

in explaining voting behavior in the US (Chen and Rodden, 2009). Similarly Akarca and Tansel (2007) and Esmer (2002) find that the urbanization rate is a strongly significant variable explaining voting behavior in Turkey.

II- Education Level

Education increases productivity and earnings, reduces inequality, and improves health and nutrition.[4] Thus it has been widely accepted that education is one of most important indicators of well-being. Many studies investigate the association between the education level and voting behavior. Alderman et al. (2009), and Weakliem (2000) find that there is an association between the education level and the voting behavior in the US. Similarly, Akarca and Tansel (2007) and Esmer (2002) find a statistically significant association between voting behavior and education level in Turkey.

In order to operationalize the education level I use 5 different independent variables: Literacy Rate, Female Literacy Rate, Percentage of Regular High School Graduates, Percentage of Technical or Vocational High School Graduates, and Percentage of University Graduates.

I do not use the primary enrollment rate, because primary education is legally obligatory in Turkey; hence there is no variation in primary enrollment rates by province. In addition to regular high school graduates, I also added the technical/vocational high school graduates to prevent the provinces with a lot of technical/vocational high schools from being underrepresented in their total high school graduates rate.

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[4] The World Bank, Education and Development,
http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:20591648~menuPK:1463858~pagePK:148956~piPK:216618~theSitePK:282386,00.html (accessed 01.31.2012).

III- Income Level

The last set of independent variables I use to operationalize socio-economic development is income. Income is the most commonly used measurement of well-being. Recently, Alderman et al. (2009) and Dorji (2008) find that there is an association between the income level and the voting behavior in the US. Ozbudun and Tachau (1975), Akarca and Tansel (2007), and Kalaycioglu (2008a) find a significant relationship between income level and the voting behavior in Turkey.

As there is no income data at provincial level in Turkey, I use 5 proxies for provincial economic well-being. These proxies are per-capita exports, per-capita imports, percentage of green card holders, number of bank branches, per capita bank deposits. In addition to the purely financial indicators, I also add the percentage of green card[5] holders, to control for the income disparities within provinces. I think that by adding this variable, provincial indicators as a whole represent the whole picture in the province.

I also run an additional OLS regression to control for geographic factors, because the election results from both 2002 and 2010 show that there is a high regional vote share clustering.

All dependent and independent variables in my models are identified and described in Table 1.

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[5] Green card is a health benefit provided to the people who do not have any sort of health insurance. The owners of the card can get health services from any hospital and all the cost is paid by the government.

Table 1: Dependent and Independent Variables

#	Abbr.	Variable	Unit	Explanation
1	jdpp	JDP Vote Share	%	Percentage of votes gained by the Justice and Development Party in the province.
2	rppp	RPP Vote Share	%	Percentage of votes gained by the Republican People's Party in the province.
3	nmpp	NMP Vote Share	%	Percentage of votes gained by the Nationalist Movement Party in the province.
4	urbr	Urbanization Rate	%	Proportion of the people living urban areas relative to the total population in the province.
5	liter	Literacy Rate	%	Proportion of the literate people over 5 years old relative to the total population in the province.
6	fliter	Female Literacy Rate	%	Proportion of the literate females over 5 years old relative to the total female population in the province.
7	ugr	Rate of University Graduates	%	Proportion of the people with university degree relative to the total population.
8	rhighss	Rate of Regular High School Graduates	%	Proportion of people who graduated from regular high school relative to the total population in the province.
9	vhighss	Rate Vocational High School Graduates	%	Proportion of the people who graduated from technical or vocational high schools relative to the total population in the province.
10	pcexp	Per-capita Exports	US Dollars	Total exports of the province divided by the total provincial population (2002 prices).
11	pcimp	Per-capita Imports	US Dollars	Total imports of the province divided by the total provincial population (2002 prices).
12	gcp	Rate of Green Card Owners	%	Percentage of the green card holders relative to the total population.
13	branp	Total number of Bank Branches	Total Number	The total number of the bank branches in the province.
14	deposit	Per Capita Bank Deposits	Turkish Liras	The total amount of the bank deposits in the province divided by the provincial population (2002 prices).
15	landlocked	If the province is landlocked	[0,1]	A dummy variable, =1 if the province is landlocked, =0 if otherwise
16	southeast	If the province is in southeast	[0,1]	A dummy variable, =1 if the province is in the southeast, =0 if otherwise

DESCRIPTIVE STATISTICS AND CORRELATIONS

Descriptive Statistics for the Dependent Variables

Table 2 shows that all the political parties increased their vote shares from 2002 to 2011. The JDP had the largest vote share increase over this time period by an increase of 15.5 percentage points. The RPP increased its vote share by 6.6 percentage points. The NMP also had a large vote share increase over this time period by an increase of 4.6 percentage points and, unlike the case of 2002 election, passed the election threshold of 10% in 2011.

Table 2: Major Political Parties and Vote Shares in 2002 and 2011

Variable	Year	Mean (Country)	St. Dev.	Min	Max
JDP	2002	34.3	13.37	6.5	54.9
	2011	49.8	13.21	15.3	69.6
RPP	2002	19.4	7.35	2.5	32.8
	2011	26	13.42	0.9	57.5
NMP	2002	8.4	4.57	0.6	29.2
	2011	13	7.53	0.6	41.2

Source: Author's calculation based on data from Supreme Electoral Council of Turkey

The main reason why these three parties were all able to increase their vote shares is that the vote shares of the liberal parties decreased dramatically from 2002 to 2011. In 2002 the True Path Party, the Young Party and the Motherland Party all together got

21.8% of the total votes. In 2011, however, The Young Party and the Motherland Party did not run in the elections and the Motherland Party got only 0.2% of the total votes[6].

Descriptive Statistics for the Independent Variables

Table 3 shows an improvement in almost all social and economic development indicators from 2002 to 2011. The Rate of Vocational High School Graduates is the fastest increasing education indicator with 55% increase, while the Rate of Regular High School Graduates remains almost the same. The Female Literacy increased more than Literacy Rate, which shows that the increase in the female literacy is the main driver of the increase in the total literacy rate.

The economic indicators also show an improvement over this time period. The number of people who have green cards decrease by 20%, while exports and imports per capita increase. Per capita bank deposits increase more than 3 times in real terms.

There are large disparities among the socio-economic development levels of the provinces. In 2002, the average urbanization rate of the 16 lowest (bottom 20%) urbanized provinces is 40%, while for the 16 highest (top 20%) urbanized provinces it is 73%. For the 2011, for bottom and top 20%, these figures are 46% and 85% respectively.

The difference between the provinces of top and bottom 20% is very high for the rate of university graduates as well. In 2002, the average rate of university graduates for the 16 lowest (bottom 20%) provinces is 4.6 %, while for the highest 16 it is 9.5%. The

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[6] Turkish Statistical Institute,
http://rapor.tuik.gov.tr/reports/rwservlet?secimdb2=&report=tablo1.RDF&p_il=0&p_s1=1&p_s2=2&p_s3=3&p_s4=4&p_s5=5&p_s6=6&p_s7=7&p_s8=8&p_s9=9&p_kod=1&desformat=html&ENVID=secimEnv, (accessed 01.25.2012)

numbers are almost the same for the 2011. This shows that the average rate of university graduates of the top 20% provinces is twice as high as the provinces of bottom 20%.

Another striking figure is that the rate of green card holders ranges from 5.76% to 49.36% in 2002, and from 2.65% to 57.3% in 2011. For the bottom and top 20% provinces these figures are 9% and 37% in 2002 and 5% and 44% in 2011. This figures shows the large disparity in poverty across the top and bottom provinces.

The per capita bank deposits is another variable having large disparity among the provinces. In 2002, the average per capita bank deposits of the bottom 20% provinces is 78 Turkish Liras, while for the top 20% it is 997 Turkish Liras. For the 2011, these figures are 382 Turkish Liras and 3,196 Turkish Liras respectively. This shows that as of 2011, the average per capita bank deposits of the top 20% provinces is more than eight times as much as bottom 20% provinces.

Table 3: Social and Economic Development Indicators in 2002 and 2011

Variable	Year	Mean	St. Dev.	Min	Max
Urbanization Rate	2002	55.47	11.92	26.06	90.69
	2011	64.02	13.97	31.96	98.98
Literacy Rate	2002	84.76	7.24	65.75	93.39
	2011	85.81	4.82	73.2	92.7
Female Literacy Rate	2002	76.67	10.91	44.85	89.49
	2011	80.78	7	64.4	91.2
Rate of University Graduates	2002	6.47	2.04	3.65	16.86
	2011	6.54	2.01	2.58	14.64

Rate of Regular High School Graduates	2002	33.93	10.63	11.74	59.91
	2011	33.9	8.09	10.47	62.49
Rate of Vocational High School Graduates	2002	20.29	10.12	3.3	46.76
	2011	31.48	11.96	8.97	56.51
Per Capita Exports	2002	139	283.37	0	1,781
	2011	300	480	0.25	2,940
Per Capita Imports	2002	182	593.16	0.35	4,660
	2011	362	919	0.18	7,017
Rate of Green Card Holders	2002	21.95	10.12	5.76	49.36
	2011	17.65	14.53	2.65	57.3
Number of Bank Branches	2002	96.12	259.63	6	2,214
	2011	111	312	8	2,631
Per Capita Bank Deposit	2002	397	484.67	44	3,299
	2011	1,457	1,287	222	8,056

Source: Author's calculation based on data from Turkish Statistical Institute

Correlation Among the Dependent Variables

Table 4 shows that the vote shares of both the JDP and the RPP are positively correlated with NMP's vote share, while their vote shares are negatively correlated with each other. The vote shares of the JDP and the NMP are positively correlated, because even though their source of conservatism is different, they are both very conservative and share the same pool of voters (Turunc, 2010).

Table 4: Correlation Among the Vote Shares of the Political Parties in 2011 Elections

	jdpp	nmpp	rppp
jdpp	1.0000		
nmpp	0.2659	1.0000	
rppp	-0.1278	0.2281	1.0000

Source: Author's calculation based on data from Turkish Statistical Institute

As mentioned in the descriptive statistics, the socio-economic variables have large disparity across provinces. The provinces having lowest values are clustered in the southeast region. In 2011, 10 out of total 11 provinces of the southeast region are among the 16 provinces of having lowest female literacy rate. The mean rate of green card holders is 44% in the southeast region provinces and 13% in the non-southeast region provinces. The disparities between the southeast and non-southeast region provinces are as striking as in other socio-economic variables as well. Therefore it is worth examining the differences in voting behavior in the provinces located in the southeast region.

Table 5 shows the correlation between the being located in the southeastern region and vote shares of the political parties. The vote share of the NMP is comparatively very low in the southeast, where independent candidates and the Democratic People's Party (DPP) got the majority of the votes. Thus part of the positive correlation between the NMP and other two major parties is the result of the geographic divergence of these three parties' voter base between the southeast region and the rest of the country. The same geographic divergence effect is valid for the relationship between the vote shares of the JDP and RPP as well, but the negative correlation between the vote shares of these parties shows that their vote base is so different that it even outweighs this dual voter base structure.

Table 5: The Effect of the South East Region Votes on the Vote Shares in 2011 Elections

	southeast	jdpp	rppp	nmpp
southeast	1.0000			
jdpp	-0.2817	1.0000		
rppp	-0.4423	-0.1278	1.0000	
nmpp	-0.4990	0.2659	0.2281	1.0000

Source: Author's calculation based on data from Turkish Statistical Institute

Correlation Among the Independent Variables

Table 6 shows the correlation among the different social and economic indicators. Income proxies are strongly positively correlated with the education variables. The only variable showing a negative correlation with the rest of the variables is the share of green card holders, which is expected given the fact that the people living in the areas where social and economic situation is worse than the rest of the country get more government aid.

Table 6: Cross-Correlation Table for the Independent Variables

	urbr	liter	fliter	ugrr	rhighss	vhighss	pcexp	pcimp	bbranp	deposit	gcp
urbr	1.000										
liter	.281	1.000									
fliter	.316	.985	1.000								
ugrr	.550	.625	.609	1.000							
rhighss	.455	.563	.556	.674	1.000						
vhighss	.278	.677	.713	.430	.260	1.000					
pcexp	.559	.279	.301	.358	.191	.248	1.000				
pcimp	.462	.246	.260	.356	.190	.214	.809	1.000			
bbranp	.463	.226	.238	.493	.210	.089	.569	.494	1.000		
deposit	.535	.394	.459	.643	.357	.452	.480	.481	.669	1.000	
gcp	-.431	-.722	-.720	-.661	-.457	-.717	-.347	-.308	-.269	-.528	1.000

Source: Author's calculation based on data from Turkish Statistical Institute

METHODOLOGY AND RESULTS

Methodology

In order to analyze the relationship between the selected social and economic variables and the voting shares of the political parties at provincial level, I apply a cross-provincial regression analysis covering the elections in 2002 and 2011 is applied. The possibility of holding other factors constant while investigating the relationship between a dependent variable and an independent variable helps to clarify the individual associations between the variables.

I use a panel data from two different years, which provide me with the opportunity to use fixed effects and random effects models. The regression formula for the fixed effects model is:

$y_{kit} = \beta_0 + \beta_1 URBR_{it} + \beta_2 LITER_{it} + \beta_3 FLITER_{it} + \beta_4 RHIGHSS_{it} + \beta_5 VHIGHSS_{it} + \beta_6 UGR_{it} + \beta_7 PCEXP_{it} + \beta_8 PCIMP_{it} + \beta_9 DEPOSIT_{it} \beta_{10} BBRANP_{it} + \beta_{11} GCP_{it} + u$

In this formula "k" is the percentage of votes won by the political party, "t" is the year of either 2002 or 2011 and "i" is the province among the 81. So, "y_k" is the number of the votes got by the party k, in province j, in year t. And finally "u" is the disturbance term. Now, for each i, I can average this equation over

time: $\bar{y}_i = \beta_0 + \beta_1 \bar{x}_i + a_i + \bar{u}_i, where\ \bar{y}_i = T^{-1} \sum_{i=1}^{T} y_{it}, etc.$

In this formula "a" is the unobserved fixed effects. So, if I subtract the second equation from the first equation, the fixed effects (and the intercept term) drop out and I get:

$y_{it} - \bar{y}_i = \beta_1(x_{it} - \bar{x}_i) + (u_{it} - \bar{u}_i), t = 1,2,\ldots,T$. By this I have time-demeaned my data. The unobserved "a" effect disappears. This means that now in my regression I do not have the province-specific characteristics that do not change over time. This gives me the opportunity to focus on my variables of interest with less unobservable factors.

Nevertheless, at this point it is important to test whether there is significant correlation between the unobserved province-specific random effects and the regressors. If there is no such correlation, then the random effects model may be more powerful and parsimonious. If there is such a correlation, the random effects model would be inconsistently estimated and the fixed effects model would be the model of choice (Wooldridge, 2008). In order to test this, I use the Hausman specification, which is the classical test of whether the fixed or random effects model should be used. According to the results of the Hausman test, for RPP and NMP fixed effects estimation gives better results, because I have significant p-values (0.0025 and 0.0000 respectively). On the other hand for the JDP, I have an insignificant p-value (0.2860); hence I determined that a random effects model gives more consistent results (see Appendix A).

I use three different specifications. In the first model I include all the social and economic variables as independent variables. In Model 2, I exclude the female literacy rate and number of bank branches, considering their possible high collinearity with the literacy rate and per capita bank deposits. After several sensitivity analyses Model 3 emerges as the model giving the best F-value and R-squared values for three of the dependent variables, given the fact that I want to use the same specification for all three dependant variables in order to able to use as many social and economic variables as possible when making comparisons among the political parties. Therefore I use the

regression results of the Model 3 when comparing the political parties among themselves.

The fixed effects estimation results of the all three of the models are summarized in Table

7.

Table 7: Fixed Effects Estimation Results

Variables/ Models	Model 1			Model 2			Model 3		
	JDP	RPP	NMP	JDP	RPP	NMP	JDP	RPP	NMP
Urbanization Rate	0.149	-0.113	0.283**	0.402*	0.027	0.294**	0.434***	-.0213	0.246**
Literacy Rate	-2.191**	-1.518**	-0.784	1.566***	-0.034	-0.348	0.744***	-.0298	-0.376**
Female Literacy Rate	2.504***	0.899*	0.331						
Reg. High. Sc. Graduates R.	0.076	-0.154	-0.115	0.160	-0.167	-0.084			
Tech. High. Sc. Graduates R.	0.582***	-0.247***	0.240***	0.753***	-0.174*	0.257***	0.694***	-0.1285	0.252***
Rate of Uni. Graduates	-2.771*	2.798**	0.731	-3.128**	3.848***	0.143	-5.183***	3.777***	-0.089
Per capita Exports	-0.015***	-0.002	-0.002	-0.002	0.004	-0.002			
Per capita Imports	0.012**	0.003	0.0006	0.0002	-0.005	0.001			
Per Capita Bank Deposits	0.002	0.006***	-0.0001	0.003**	0.006***	-0.0002	.0026***	0.0056***	0.0000
No. of Bank Branches	-0.070**	-0.078***	0.014						
Rate of Green Card Holders	-0.168	-0.024	0.040	-0.063	0.030	0.046			
Intercept	31.246	79.106***	27.2485	-121.692	-0.784	18.448	-34.268	-4.118	23.070
F-value/ Waldchi2 (5)	48.06	15.30	8.63	37.16	11.98	10.63	264.88	36.01	19.38
R^2	0.1428	0.0004	0.0181	0.1949	0.2875	0.0371	0.2929	0.2123	0.0548
Observations	162	162	162	162	162	162	162	162	162

* significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Results

The regression results show that the urbanization rate is strongly and positively associated with the vote share of the JDP and the NMP. This finding is not compatible with the findings of the Kalaycioglu (2008) whose results indicate that the urban-rural differences do not play a strong role in determining the partisan affiliation towards the JDP, RPP and NMP. The main reason for this difference might be the fact that unlike this study, which uses provincial level data from 2002 and 2011, Kalaycioglu (2008) uses survey data collected from a target sample of 2,000 individuals in 2007. Thus the estimates for individual level associations may not be compatible with provincial ones. Esmer (2002) finds that RPP's vote share and the urbanization rate are inversely related. This is in line with the direction of the coefficient I estimated, but the coefficient in my models is insignificant across all model specifications.

My findings show the changing voter base of the JDP and NMP. As mentioned in the background section, conservative parties are thought to be getting relatively more votes in the rural areas. Even though the data were collected at provincial level, which holds me back from making individual level inferences, it is still striking that vote shares of the JDP and NMP are positively associated with the provincial urbanization rate. Another interesting result is that the vote share of the RPP, which is known as the party of the urban elites, is not associated with the urbanization level. A possible explanation is the fact that even though they are affluent, some coastal provinces, where RPP traditionally gets relatively more votes, have very low urbanization rates. For example, in

9 of the top 22 most developed provinces (Dincer et al., 2003)[7] RPP got 42.81% of the

votes, a lot more than its national vote share of 26% in the 2011 elections, the mean

urbanization rate of these provinces is 59.51% (4% points lower than the national

average). When considered together with the positive and strongly significant per capita

bank deposits variable, it is seen that RPP gets relatively more votes from the affluent

provinces regardless of their urbanization rate.

In all models, the proportion of the university graduates is negatively correlated

with the vote share of the JDP and positively correlated with the vote share of the RPP.

This finding, together with the negative association between the vote share of the NMP

and the literacy rate, is in line with the finding of Weakliem (2000) that more education is

associated with a higher support for the non-conservative parties. Nevertheless the strong

positive correlation between the vote share of the JDP and the literacy rate makes the

relationship between education level and the voting behavior more complicated. This

pattern shows that when the education level increases, more people vote for the JDP, but

after a threshold, which is university education, the JDP's vote share becomes negatively

correlated with the education level.

Esmer (2002) finds no positive relation between years of schooling and votes for

the RPP, and argues that the income variable in his equation probably picks up this effect.

In my model, however, both the education and income are positively correlated with the

vote share of the RPP. Another interesting outcome is the fact that NMP is the only party

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[7] These provinces are Antalya, Aydin, Balikesir, Canakkale, Edirne, Kirklareli, Mugla, Tekirdag, and
Zonguldak.

having negatively correlated vote share with literacy level, which is a new and a very surprising result.

While the proportion of the regular high school graduates is not associated with any of the political parties' vote shares, the proportion of the technical/vocational high schools graduates is positively associated with the vote shares of the both the JDP and the NMP. The positive is in line with Cansabuncu (2008), who finds that students in technical schools are more likely to be conservative and more nationalist compared to their fellows who are enrolled in regular high schools.

The coefficient on the per capita bank deposits for the JDP and the RPP is the only statistically significant economic variable. For the JDP, this shows that while the JDP gets more votes from the relatively less educated provinces, at least in terms of college education, its votes are not necessarily from the relatively poorer provinces. For RPP, the figure is in line with the finding of the Ozbudun and Tachau (1975) that since the 1950s, the RPP's voter base has been shifting from the poor to the wealthy. Even though both JDP's and RPP's vote shares are positively associated with the per capita bank deposits, the coefficient on the variable is twice as big for the RPP. This suggests that even though more income increases the vote shares of the both the JDP and the RPP, RPP is benefiting more from the income increase in the province.

Beside the fixed effects model, I also estimated two different OLS models for the two election years for the geographic variables of "landlocked" and "southeast" to see the impact of the geographic factors. As explained above, the variables that are not changing over time cannot be seen by fixed effects estimation, because they drop when the variables are time demeaned. In the OLS specification, however, I can see their

individual association with the vote share by controlling for other variables. Table 9

shows that for the JDP and NMP Model 3 gives the highest R^2, while for the RPP Model

2 gives the highest R^2.

Table 8 shows that the vote share of the JDP is positively associated with the

dummy variable landlocked in both the 2002 and 2011 elections. This effect does not

seem to change from 2002 and 2011. The most striking result of this model is that the

vote share of the RPP in 2011 is strongly negatively correlated with the dummy

landlocked and the magnitude of this effect is very large. According to this model,

holding other independent variables in the model constant, the vote share of the RPP is

8.2 percentage point lower in the landlocked provinces than the provinces in the coastal

areas, which is extremely high.

Table 8: The Effect of Being Landlocked

Variables/ Years	2002			2011		
	JDP	RPP	NMP	JDP	RPP	NMP
Urbanization Rate	0.210	-0.090	-0.030	0.052	-0.214**	-0.050
Literacy Rate	1.226***	0.279**	0.293	1.234**	0.742**	0.975***
Rate of Uni. Graduates	-3.510***	1.640***	0.416	-0.900	2.095*	0.507
Per Capita Bank Deposits	0.003	-0.000	-0.002	-0.002	0.001	-0.001
Landlocked	6.439**	-2.360	1.504	6.219*	-8.219***	2.44
Intercept	-65.771***	-11.765	-16.462	-53.292	-40.007	-69.847***
F-value	6.66	12.56	3.55	2.81	21.16	7.31
R^2	0.3075	0.4558	0.1912	0.1579	0.5852	0.3277
Observations	81	81	81	81	81	81

Table 9 shows that the vote share of the NMP is strongly negatively correlated with the dummy southeast in both the 2002 and 2011 elections. This negative correlation, however, seems to increase from 2002 and 2011. According to this model, holding other independent variables in the model constant, the vote share of the NMP is 10.6 percentage point lower in the southeast provinces than the other areas, which shows that the dummy southeast has an extremely high negative impact on the vote share of the NMP. For the vote share of the other two political parties, being located in the southeast does not seem to have much effect.

Table 9: The Effect of Being Located in Southeast

Variables/ Years	2002			2011		
	JDP	RPP	NMP	JDP	RPP	NMP
Urbanization Rate	0.299**	-0.110*	0.002	0.170	-0.268	0.018
Literacy Rate	0.823**	0.235	0.033	0.495	0.821	0.488*
Rate of Uni. Graduates	-3.573***	1.789***	0.511	-1.841	2.161	-0.119
Per Capita Bank Deposit	0.002	0.000	-0.003*	-0.002	0.002	-0.002
Southeast	-6.980	-1.975	-5.550**	-14.562*	-3.121	-10.603***
Intercept	-30.539	-9.372	5.000	15.113	-49.974	-25.400
F-value	5.74	11.79	4.50	3.59	16.31	11.38
R^2	0.2767	0.4401	0.2308	0.1931	0.5209	0.4313
Observations	81	81	81	81	81	81

In Table 10, the southeast and landlocked variables are included. The result shows that when the two of these geographic factors are included in the model, they capture so much effect that some of the other factors become insignificant. The main findings are, however, still the same. The vote share of the NMP is highly negatively correlated with

the southeast, and the vote share of the RPP is high negatively correlated with the landlocked variable.

Table 10: The Consolidated Effect of the "Southeast" and "Landlocked" Variables

Variables/ Years	2002			2011		
	JDP	RPP	NMP	JDP	RPP	NMP
Urbanization Rate	0.230*	-0.084	-0.013	0.118	-0.201**	-0.002
Literacy Rate	0.948***	0.188	0.061	0.645	0.628*	0.549**
Rate of Uni. Graduates	-3.331***	1.698***	0.565	-1.673	1.945	-0.051
Per Capita Bank Deposits	0.003	-0.000	-0.002*	-0.001	0.001	-0.001
Southeast	-6.546	-2.139	-5.452**	-14.766***	-2.860	-10.688***
Landlocked	6.339**	-2.393	1.420	6.381**	-8.188***	2.566*
Intercept	-43.489	-4.482	2.097	-0.607	-29.803	-31.721
F-value	5.73	10.47	4.07	3.79	17.60	10.18
R^2	0.3171	0.4592	0.2481	0.2352	0.5880	0.4523
Observations	81	81	81	81	81	81

Robustness Tests

The election result in the southeast part of the Turkey is very different from the rest of the country in terms of the total voting share of the three major parties. These parties got 90% of the total votes in the 2011 election. However, for the 10 provinces in the southeast region[8] this figure is only 42%. Therefore I estimated an additional fixed effects model and excluded these 10 provinces to see the model without the outliers.

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[8] These provinces are Agri (in the east but not in southeast), Batman, Bitlis, Diyarbakir, Hakkari, Mardin, Mus, Siirt, Sirnak, and Van. These provinces are the ones where the independent candidates got more than 40% of the votes in 2011 general election.

The Table 14 (Appendix B) shows the results of this estimation. The most striking result is the fact that the literacy rate is no longer statistically significant in explaining the voting for the JDP and NMP. In the main model with the 81 provinces, the literacy rate is strongly and positively correlated with the provincial voting rates of the JDP and the NMP. But, when the 10 southeastern provinces are excluded from the model, the association between the vote shares of these two parties and the literacy rate disappears. This is because of the fact that when these 10 provinces are excluded there is not much variation in the literacy rate. Especially for the year 2002, when these provinces are excluded the standard deviation falls to 4.6 from 7.2. Thus, as the variation in the literacy rate is very small, the correlation between the literacy rate and the vote share disappears.

Limitation

The model has a notable limitation. The vote shares of the parties and the socio-economic development indicators vary widely within the individual provinces. Therefore the large standard deviation at voter level cannot be observed within the framework of my models. The seemingly obvious solution of using district level data instead of provincial data was not possible, since there is no district level socio-economic development data for 2011. And also, using district level data could increase the estimation accuracy only to a certain level, as the voter level variations could still not be included.

I believe I overcome possible misunderstandings by using "provincial voter behavior" instead of "voter behavior". Nevertheless, this does not change the fact that the correlations estimated in this study are probably not as accurate as studies using voter level data.

CONCLUSION

The regression results show that different social and economic development variables have different effects on the voters' attitudes toward the three major Turkish political parties. One of the most striking results is that voting behavior is more strongly associated with the education variables than with my income proxy variables.

Provinces with higher level of urbanization, higher literacy rates and more per capita bank deposits vote more heavily for JDP. However, the rate of university graduates is negatively associated with the vote share of the JDP.

In contrast, the rate of university graduates is positively associated with the vote share of the RPP. Per capita bank deposits is also positively associated with the vote share of the RPP and this association is stronger than the association of the JDP's vote share with the per capita bank deposits. Also the simple OLS regression estimation showed that the RPP's vote share is relatively lower in the landlocked areas. Thus, provinces located in coastal areas and having more people with university degrees and higher per capita bank deposits have a relatively higher share of RPP voters.

The results show that provinces which are located outside the southeast region, having higher urbanization rate and relatively more technical high school graduates have larger share of NMP voters.

Appendix A – Results of the Hausman Tests

Table 11: Result of the Hausman Test for JDP

jdpp	---- Coefficients ----			
	(b) fixed	(B) random	(b-B) Difference	Sqrt (diag(V_b-V_B)) S.E
urbr	.3474904	.4345642	-.0870738	.1378457
liter	1.563846	.7442085	.8196376	.2332618
ugrr	-2.74725	-5.183769	2.436519	1.015196
deposit	.0033764	.0026009	.0007755	.00072
vhighss	.7657027	.6945798	.0711229	.0726663

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B
=6.21
*Prob>chi2 = **0.2860***
(V_b-V_B is not positive definite)

Table 12: Result of the Hausman Test for RPP

rppp	---- Coefficients ----			
	(b) fixed	(B) random	(b-B) Difference	Sqrt (diag(V_b-V_B)) S.E
urbr	-.0213405	-.1719322	.1505918	.109786
liter	-.0298965	.0443031	-.0741996	.1861157
ugrr	3.777351	2.156057	1.621295	.786214
deposit	.0055967	.0045666	.0010301	.000609
vhighss	-.1285987	.0957257	-.2243244	.0614545

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
=18.41
*Prob>chi2 = **0.0025***
(V_b-V_B is not positive definite)

Table 13: Result of the Hausman Test for NMP

nmpp	---- Coefficients ----			
	(b) fixed	(B) random	(b-B) Difference	Sqrt (diag(V_b-V_B)) S.E
urbr	.2462526	.0585037	.1877489	.0873227
liter	-.3768239	-.0421682	-.3346557	.1457135
ugrr	-.0890267	-.0886246	-.0004021	.6155708
deposit	-.0000919	.0003974	-.0004893	.0004731
vhighss	.2527229	.2650077	-.0122848	.0481856

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
=68.66
*Prob>chi2 = **0.0000***
(V_b-V_B is not positive definite)

Appendix B – Estimations Without the Outliers

Table 14: Fixed Effects Estimation Results without Outliers

Variables/ Models	Model 1			Model 2			Model 3		
	JDP	RPP	NMP	JDP	RPP	NMP	JDP	RPP	NMP
Urbanization Rate	0.087	-0.198	0.337**	0.476**	0.018	0.364**	0.482***	-0.013	0.264**
Literacy Rate	-2.705***	-2.008**	-0.755	2.288***	0.013	-0.050	0.390	0.018	-0.050
Female Literacy Rate	3.576***	1.314**	0.566						
Reg. High. Sc. Graduates R.	0.174	-0.172	-0.097	0.287*	-0.175	0.059			
Tech. High. Sc. Graduates R.	0.454***	-0.261***	0.236***	0.649***	-0.185*	0.265***	0.672***	-0.134	0.255***
Rate of Uni. Graduates	-2.782**	2.839**	0.928	-4.207***	3.651***	0.092	-4.894***	3.735***	-0.532
Per capita Exports	-0.001	-0.000	-0.002	0.007	0.005	-0.003			
Per capita Imports	0.001	0.002	-4.710	-0.008	-0.006	0.001			
Per Capita Bank Deposit	0.002*	0.006***	-0.001	0.004***	0.006***	-0.000	0.002**	0.005***	-0.000
No. of Bank Branches	-0.037	-0.072***	0.021						
Rate of Green Card Holders	-0.094	-0.052	0.138	-0.029	0.006	0.132			
Intercept	-13.554	96.065**	-4.430	-187.122	-1.189	-12.596	-7.109	-7.881	-2.340
F-value/ Waldchi2 (5)	66.65	14.21	8.28	36.96	10.34	10.02	207.55	18.31	17.94
R^2	0.0775	0.0049	0.0067	0.0594	0.2495	0.0583	0.2194	0.2903	0.0757
Observations	142	142	142	142	142	142	142	142	142

* significant at 10% level; ** significant at 5% level; *** significant at 1% level

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