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EVALUATION OF ALTERNATIVE SPATIAL MODELS OF PARTY COMPETITION ACROSS VOTERS' IDEOLOGICAL POSITIONS: EMPIRICAL EVIDENCE FROM TÜRKİYE

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Keywords: voting behavior, alternative spatial models of party competition, political ideology, Turkish politics.

This research aims to evaluate the appropriateness of proximity and directional models of voting among voters occupying different ideological positions on the ideological spectrum. The proximity model suggests that voters vote for parties or candidates whose ideological or issue positions are the closest to their own. In contrast, the directional model proposes that voters vote favor parties that are on their side of the ideological

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or issue position, more but not too extreme than their positions. In this research, we evaluate the appropriateness of the proximity and directional models for voters from the left, center and right of the ideological spectrum. Based on the extant research that shows right-wing candidates are more congruent with their voters than the left-wing ones as well as on the fact that the proximity model prioritizes ideological distance, we expect to find that party-voter ideological congruence should act as a more significant determinant of the right-wing voters' utility calculation than that of the left-wing ones. Thus, we hypothesize that the proximity model is a more applicable tool than the directional model to measure right-wing party preference relative to that of the left-wing. The analysis of the 2015 Comparative Study of Electoral Systems (CSES) data for the Turkish voter supported our hypothesis and showed that voter ideology is a key factor in understanding the applicability of the two rival models. As expected, the proximity model, and to a lesser extent, the directional model appeared to be more applicable tools for predicting voter utility of right-wing voters than for predicting voter utility of left-wing voters.

OCENA ALTERNATYWNYCH MODELI PRZESTRZENNYCH KONKURENCJI MIĘDZY PARTIAMI W KONTEKŚCIE IDEOLOGICZNYCH POZYCJI WYBORCÓW: DOWODY EMPIRYCZNE Z TURCJI

Słowa kluczowe: zachowania wyborcze, alternatywne modele przestrzenne konkurencji między partiami, ideologia polityczna, polityka turecka.

Celem badania jest ocena adekwatności bliskościowego i kierunkowego modelu głosowania dla wyborców zajmujących różne pozycje na ideologicznym spektrum. Model bliskościowy zakłada, że wyborcy głosują na partie lub kandydatów, których pozycje ideologiczne lub w kwestiach programowych znajdują się najbliżej ich własnych. Natomiast model kierunkowy sugeruje, że wyborcy głosują na partie, które znajdują się po ich stronie ideologicznej, a niekoniecznie na podstawie bliskości pozycji. W niniejszym badaniu oceniamy adekwatność modelu bliskościowego i kierunkowego dla wyborców lewicy, centrum oraz prawicy. Opierając się na dotychczasowych badaniach, które wskazują, że kandydaci prawicowi są bardziej zgodni ze swoimi wyborcami niż kandydaci lewicowi, oraz na fakcie, że model bliskościowy kładzie nacisk na dystans ideologiczny, oczekujemy, iż zgodność ideologiczna między partią a wyborcą będzie bardziej istotnym czynnikiem wpływającym na kalkulację użyteczności wyborców prawicy niż wyborców lewicy. W związku

z tym postawiliśmy hipotezę, że model bliskościowy jest bardziej odpowiednim narzędziem w odniesieniu do preferencji partii prawicowych w porównaniu do partii lewicowych. Analiza danych z badania Comparative Study of Electoral Systems (CSES) z 2015 roku, dotyczących wyborców tureckich, potwierdziła naszą hipotezę i wykazała, że ideologia wyborców jest kluczowym czynnikiem w ocenie stosowalności obu rywalizujących modeli. Zgodnie z oczekiwaniami, model bliskościowy, a w mniejszym stopniu także model kierunkowy, okazały się bardziej adekwatnymi narzędziami do przewidywania użyteczności wyborczej wyborców prawicy niż do przewidywania użyteczności wyborczej wyborców lewicy.

Ideological Positions and Alternative Models of Voting

In 1957, Downs pioneered the integration of the spatial model into the study of voting behavior. However, the focus on party and voter positions as key factors in explaining electoral choices only became prominent in the late 1980s, particularly in Western democracies, where party identification was declining. Downs' proximity model examines the decision-making process of voters, who aim to maximize their utility in a single-issue context, assuming perfect information. Voters and parties occupy positions within this issue space, with voters choosing based on the utility determined by how far their preferences are from the party positions (Downs 1957; Hinich, Pollard 1981; Enelow, Hinich 1984; Hinich, Munger 1994; MacDonald et al. 1995; Adams, Merrill 1999; Çarkoğlu, Hinich 2006; Arıkan-Akdağ 2016; Arıkan-Akdağ, İnan 2025). The party closest to the voters' position gains their support, encouraging parties to align themselves as closely as possible to the median voter's stance.

Since Anthony Downs' 1957 development of the spatial model for electoral behavior and party competition, two main theories have emerged to explain how voters' issue positions influence their evaluations of parties and candidates. While both theories focus on how voters calculate utility in making electoral choices, they differ in how they believe this utility is assessed. The first model, known as the proximity model, suggests that voters make decisions based on how closely a party's policies align with their own positions. Essentially, voters favor parties whose positions are nearest to their own on a policy spectrum (Downs 1957; Hinich, Pollard 1981; Enelow, Hinich 1984; Hinich, Munger 1994; MacDonald et al. 1995; Adams, Merrill 1999; Çarkoğlu, Hinich 2006; Arıkan-Akdağ 2016). In contrast, the directional model argues that voters are more concerned with general policy leanings rather than specific positions. Voters are more likely to support

parties that align with their side of an issue, even if the party's stance is more extreme than their own, as long as it remains within a tolerable range (MacDonald et al. 1991; MacDonald et al. 1995, 1998, 2001; Iversen 1994; Kedar 2005; Tomz, Houweling 2008).

Over time, extensive research has been conducted to evaluate the validity of these models (Grofman 2004; Tomz, Houweling 2008). These studies suggest that the effectiveness of each model may vary depending on both country-specific factors, such as the type of electoral system, and individual voter characteristics, such as political sophistication. For instance, while MacDonald, Listhaug, and Rabinowitz (1991, 1995, 1998, 2001) claim the directional model works well across both majoritarian and proportional representation (PR) systems, other research presents conflicting views (Westholm, 1997; Lewis, King 1999; Meyer, Müller 2014). Westholm (1997), for example, argues that the proximity model is more applicable in PR systems, while the directional model fits better in majoritarian systems. By reanalyzing data from Norway's 1989 elections, a country with a PR system, Westholm's findings reinforced his argument. Additional studies (Ames 1995, Cox 1990) have explored the impact of electoral systems on how voters assess candidates, showing that the proximity model tends to prevail in proportional systems (see also İnan, Arıkan-Akdağ 2024). Specifically, İnan and Arıkan-Akdağ (2024) found that the proximity model was more effective in explaining voter preferences in Türkiye, which uses a proportional system for parliamentary elections. However, Blais et al. (2001) found evidence supporting the superiority of the proximity model even in Canada, a country that operates under a majoritarian system, in their analysis of the data from the 1997 elections.

Individual level factors are also argued to be key in understanding why both models receive support in different contexts. Research indicates that individual voters do not follow a single, uniform strategy when making voting decisions; instead, their approaches vary (MacDonald et al. 1995; Tomz, Houweling 2008). Among these individual factors that affect how voters use issue positions to assess parties and candidates, voters' political sophistication is the first tested by Macdonald, Rabinowitz, and Listhaug. They proposed that the applicability of the proximity and directional models depends on a voter's level of sophistication. Their hypothesis was that the proximity model, which requires voters to pinpoint specific policy positions, demands more cognitive effort and thus better explains the choices of more educated and politically engaged voters. Conversely, they suggested that the less cognitively demanding directional model, which involves supporting a general stance in policy debates, would resonate

more with less educated or politically disengaged voters. They tested this theory using survey data from the 1988 U.S. Presidential Election and the 1989 Norwegian Parliamentary Election. However, their results did not align with their predictions, as the directional model proved to be effective across all levels of political sophistication in both countries. Interestingly, in their recent research on the effect of political sophistication on voting preferences Arıkan-Akdağ and İnan (2025) found that the proximity model prevails over the directional model in general and explanatory power of the proximity model increases in general with increasing sophistication levels of the electorate.

Merrill and Grofman (1999, p. 79) noted the possible effect of the heterogeneity among voters, where it is possible, is that some voters evaluate candidates according to the proximity model, whereas others use a directional measure. As Tomz and Houweling, in a study conducted among American voters, indicate that such kind of an individual level factor may affect voters' calculations. According to the authors, although many voters use the proximity model to guide their decisions, a portion follows the directional guidance (Tomz, Houweling 2008, p. 304). They argue that the use of either model is related to the own positioning of the voters on the ideological spectrum. For example, their findings support the view that directional utility calculations are less common among ideological centrists and nonpartisans. The researchers argue that more research has to be conducted to understand the voting behavior of ideologically differently positioned voters. Based on Merrill and Grofman (1999), Tomz and Houweling (2008) suggestions this study attempts to investigate in detail the effect of the ideological positions of the Turkish voters' voting decisions, which considerably diverge, compared to voters in Western democracies on their utility calculations. We believe such an attempt is an important step to further enlarge the main hypothesis developed in the field of spatial voting and opens room for testing the validity of our argument in different countries with diverging electoral contexts.

Different than previous studies that test the effect of the electoral system or voter sophistication, we argue that the answer given to the question which formula explains voting behavior is also related to the voters' ideological positions on the ideological spectrum. Therefore, in this study we aim to test the link between the voter's ideological position and two models of spatial theory of party competition. This research is important as it aims to take a further step to answer the following popular research question: Which spatial model of party competition is superior?

Importantly, the proximity model suggests that voters support the political parties or candidates whose ideological positions are closest to their own, whereas the directional model suggests that voters support candidates or parties on their side of the two-dimensional political spectrum who are more extreme than their own while still falling within an acceptability region. Pedrazzani and Segatti (2020) have previously found candidates in the right hand-side of the political spectrum are more congruent with their voters than the candidates on the left hand-side of the political spectrum. If right-wing candidates are more congruent with their voters than the left-wing ones, the proximity model, which prioritizes ideological distance more than does the directional model, should be more applicable for right-wing voters. Departing from this perspective, we propose the following hypothesis: H1: Proximity model provides a more applicable formula than the directional model to measure party preference of the right-wing voters.

Data And Methodology

In this study, we drew on data from the Comparative Study of Electoral Systems (CSES) for Türkiye. The CSES dataset is particularly well suited for analyzing voter attitudes toward political parties. An international panel of experts in electoral politics, political science, and methodology developed the dataset using a standardized set of survey questions that cover a broad range of topics, including voter demographics, electoral choices, perceptions of political parties and leaders, and party groupings. This structure allows researchers to conduct comparative studies across multiple countries, as well as detailed studies within specific nations. Although Türkiye participated in the 2011, 2015, and 2018 rounds of the CSES, the variables relevant to our study are only available in the 2015 round. Our final dataset includes responses from 249 individuals, all of whom are voters of one of Türkiye's four most voted political parties: Adalet ve Kalkınma Partisi (AK Parti), Cumhuriyet Halk Partisi (CHP), Milliyetçi Hareket Partisi (MHP), and Halkların Demokratik Partisi (HDP).

We used voter utility for each political party as the dependent variable. The variable measures like-dislike score for each party for all the party electorates on a 10-digit measure ranking from 0 (strongly dislike) to 10 (strongly like). The key independent variables are the formulas being calculated using both the proximity and directional models. These were determined by using the voters' self-identified ideological positions and their perceptions of where the parties stand on the ideological spectrum¹.

¹For mathematical formulas used to construct the two dependent variables see, İnan, Arıkan-Akdağ (2024).

We divided the total 249 voters into three ideological positions, namely left, center, and right. On an 11-digit ideological spectrum from 0 to 10, 83 voters who positioned themselves on 0-3 positions are assigned to the left, 37 voters who positioned themselves on 4-6 are assigned to the center and 129 voters who positioned themselves on 7-10 are assigned to the right. Accordingly, the dataset was divided into three ideological groups, and analyses to estimate voter utility for each political party were run for each ideological group. Education, political information, income, gender, and age variables that potentially correlate with the dependent variable were employed as controls.

To examine the relationship between our variables, we applied the Linear Regression Analysis-Ordinary Least Squares (OLS) technique. A series of regression analyses evaluate the connections between voter utility for each political party and proximity and directional formulas across three ideological groups.

Findings

Table 1

Descriptive Statistics of Variables

	AK Parti	CHP	MHP	HDP
Party Utility by Ideology (Mean)				
Left	0.98	7.81	1.27	2.92
Centre	3.35	5.05	2.21	3.05
Right	6.49	1.62	4.41	0.69
Party Evaluation All Electorates 0-10 (Mean)	8.54	1.81	7.57	1.59
Self Voter Position Evaluation 0-10 (Mean)	8.42	2.48	8.45	2.36
Proximity Formula (Mean)	-3.61	-4.45	-3.91	-4.80
Directional Formula (Mean)	3.77	7.61	7.47	6.82
N. of Obs.	92	86	46	25

Source: Data: Comparative Study of Electoral Systems (2015).

Each of the following four tables presents the results of six identical regression analyses. The first, second and third columns demonstrate relationships between party utility and proximity and directional formulas for the left-wing, center and right-wing voters, respectively. For each column, the first parts show coefficient values for the proximity and the second parts show coefficient values for the directional formula.

Table 2 presents six regression models predicting voter utility for AK Parti's by proximity and directional formulas for left-wing, center and right-wing electorates. As can be seen from the first column, neither proximity nor directional formulas can predict left-wing voters' voter utility for the AK Parti significantly. This is the same for the center voter. However, the proximity model predicts the right-wing voter's utility statistically significantly. For the directional model, the effect is statistically significant but not in the expected direction ($b_i = 1.04$, $p \leq 0.000$ and $b_i = -0.05$, $p = 0.004$, respectively). R^2 score shows that proximity model alone explains about 25% of the variation in voter utility.

Table 3 shows results of the same sort of analyses as in the previous table but for the voter utility for the CHP. Proximity and directional formulas are statistically significantly associated with the voter utility only for the right-wing voters ($b_i = 0.20$, $p = 0.005$ and $b_i = 0.04$, $p \leq 0.000$ respectively).

Table 4 introduces analyses predicting voter utility for the MHP. Except for the significant proximity association for the central voter, the picture is quite similar. The proximity formula is significantly associated with voter utility for the centrist voter ($b_i = 0.89$, $p = 0.024$). The proximity formula is also a strong significant predictor of the MHP' utility for the right-wing voter. Although the directional formula is also associated, the relationship is not in the expected direction ($b_i = 0.47$, $p < 0.000$ and $b_i = -0.03$, $p = 0.001$ respectively). R^2 score is greater for the proximity formula in both the center and right-wing groups.

Table 5 presents results for the voter utility for the HDP. Similar to the results for the MHP, the proximity formula is significantly associated with voter utility for the central voter ($b_i = 1.05$, $p = 0.001$). Moreover, both formulas are significantly associated with HDP embracement for the right-wing voter ($b_i = 0.30$, $p \leq 0.000$ and $b_i = 0.04$, $p \leq 0.000$ respectively).

To reiterate, while predicting the voter utility for the AK Parti, the proximity formula is superior to the directional formula in the right-wing electorate group. In the left-wing and center groups, neither formula predicted the voter utility for the AK Parti. In the CHP case, the picture is similar. Both formulas significantly predicted the voter utility for the CHP for the right-wing voter groups only. Voter utility for the MHP is predicted significantly and in the expected direction by only the proximity formula and for the center and right-wing voters. Lastly, both formulas only predicted voter utility for the HDP of the right-wing group significantly, while only

the proximity formula predicted voter utility for the HDP in the centrist group.

Conclusion and Discussion

Recently, İnan and Arıkan-Akdağ (2024) have found that the proximity model is superior to the directional model in explaining the Turkish electorate's voting decisions. Their findings showed that Turkish voters are more likely to vote for those political parties that are ideologically closer to them than those that are on their side of the ideological spectrum and more but not too much extreme than their own ideological position. Moreover, it was previously found in the literature that right-wing candidates are more congruent with their voters than left-wing ones (Pedrazzani, Segatti 2022). More specifically, Tomz and Houweling (2008) suggested that the use of either model according to them is related to the own positioning of the voters on the ideological spectrum. Departing from these findings and to further elaborate them, we hypothesized that proximity formula, which prioritizes ideological distance more than the directional one, is a more applicable tool for the right-wing electorate than for the left-wing one in Türkiye. Thus, this research compared two models of party competition in terms of their applicability across different voter ideological camps. By incorporating voter ideological position into the well-known spatial equation and controlling for other correlates of voting preference such as education, income, political information, gender, and age, this research found that voter ideology plays an important role in the applicability of the formulas proposed by proximity and directional models. In other words, our findings revealed that the applicability of the proximity and directional formulas are closely associated with voter's ideological position. Although the proximity formula still seems to be superior to the directional one in general, which ideological group's voter utility is being predicted seems to play an important role in the applicability of both formulas. Our finding improves our understanding of the two rival spatial models of party competition, indicating to the role of voter's ideology. It also improves findings of Pedrazzani and Segatti (2022) by incorporating the spatial models of party competition into the ideology-congruence relationship. On the other hand, it improves Tomz and Houweling's (2008) as well as Merrill and Grofman's (1999) view by providing results of a single-country test in the relationship between voter's ideology and spatial models of party competition. This finding is important in itself, yet, beside its theoretical importance, it also provides important implications for political parties of the left and the right if they want to understand how their supporters make their voting decisions.

Table 2

Comparison of models for left-wing, center and right-wing voters (dependent variable: Like-Dislike AK Parti [0-10])

	Left			Centre			Right		
	Proximity		Directional	Proximity		Directional	Proximity		Directional
	b	(se)	b	(se)	b	(se)	b	(se)	b
Model of Voting (Proximity/Directional)	0.09	(0.10)	Omitted	0.72	(0.35)	-0.02	1.04***	(0.20)	-0.05**
Education (Ref.: No Education)									
Primary/Lowest Secondary	-0.15	(1.17)	0.07	(1.14)	2.88	(4.15)	1.24	(1.90)	0.27
Post-Secondary	-1.63	(1.19)	-1.30	(1.14)	3.11	(4.37)	-1.35	(2.03)	-2.07
University	-2.01	(1.22)	-1.79	(1.20)	1.80	(4.18)	0.67	(2.12)	-0.67
Political Information	0.49	(0.33)	0.54	(0.33)	-1.71	(1.01)	-0.22	0.37	-0.17
Income (Ref.: Lowest Quintile)									
Second Quintile	-0.06	(0.83)	0.05	(0.81)	1.73	(2.22)	2.42	(2.52)	-1.12
Third Quintile	-0.62	(0.87)	-0.48	(0.86)	4.45	(2.43)	3.67	(2.62)	-1.53
Fourth Quintile	-0.15	(0.83)	-0.07	(0.83)	1.03	(1.98)	0.72	(2.13)	-2.35
Highest Quintile	-0.18	(0.89)	-0.10	(0.89)	2.25	(2.17)	1.11	2.26	-3.22*
Gender (Ref.: Male)	1.02*	(0.49)	0.97	(0.49)	-0.27	(0.73)	-0.59	1.91	0.06
Age	0.00	(0.01)	0.00	(0.01)	-0.00	(0.05)	-0.01	0.05	-0.03
Constant	1.20	(2.26)	0.17	(1.98)	6.70***	(5.15)	6.31***	5.56	11.76***
Adjusted R^2	0.0843		0.0856		-0.0353		-0.2063		0.1468
N. of cases	83		83		37		129		129

Significance levels: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$;

Entries are multiple linear regression coefficients with standard errors in parentheses.

Source: Data: Comparative Study of Electoral Systems (2015).

Table 3

Comparison of models for left-wing, center and right-wing voters (dependent variable: Like-Dislike CHP [0-10])

	Left				Centre				Right			
	Proximity		Directional		Proximity		Directional		Proximity		Directional	
	<i>b</i>	(<i>se</i>)	<i>b</i>	(<i>se</i>)	<i>b</i>	(<i>se</i>)	<i>b</i>	(<i>se</i>)	<i>b</i>	(<i>se</i>)	<i>b</i>	(<i>se</i>)
Model of Voting (Proximity/Directional)	0.36	(0.21)	0.28	(0.23)	0.46	(0.32)	-0.09	(0.09)	0.20***	(0.07)	0.04***	(0.01)
Education (Ref.: No Education)												
Primary/Lowest Secondary	5.86**	(2.00)	5.04*	(2.00)	2.68	(3.34)	2.26	(3.47)	-0.71	(0.95)	-0.67	(0.92)
Post-Secondary	6.99**	(1.97)	6.42**	(1.98)	2.70	(3.48)	1.34	(3.64)	-1.11	(1.02)	-1.17	(0.99)
University	6.82**	(2.07)	6.32**	(2.09)	4.36	(3.43)	3.73	(3.49)	-0.72	(1.06)	-0.87	(1.03)
Political Information	0.29	(0.57)	0.28	(0.58)	0.44	(0.87)	0.74	(0.85)	0.00	(0.19)	0.03	(0.18)
Income (Ref.: Lowest Quintile)												
Second Quintile	2.79	(1.41)	2.80	(1.43)	1.81	(1.86)	1.88	(1.91)	-0.14	(0.70)	-0.05	(0.68)
Third Quintile	0.65	(1.48)	0.71	(1.50)	1.50	(2.08)	2.35	(2.04)	1.13	(0.71)	1.16	(0.69)
Fourth Quintile	1.92	(1.44)	1.65	(1.45)	3.14	(1.76)	3.43	(1.79)	1.49*	(0.72)	1.71*	(0.70)
Highest Quintile	2.40	(1.53)	2.01	(1.56)	0.96	(1.91)	1.70	(1.83)	0.90	(0.69)	1.00	(0.67)
Gender (Ref.: Male)	1.19	(0.85)	1.47	(0.86)	2.18	(1.45)	2.98	(1.61)	-0.04	(0.31)	-0.02	(0.30)
Age	0.06	(0.02)	0.07*	(0.02)	0.06	(0.04)	0.04	(0.04)	0.00	(0.01)	-0.00	(0.019)
Constant	-3.88	(3.41)	-4.21	(3.44)	-2.39	(4.63)	-3.16	(4.71)	3.07*	(1.44)	0.97	(1.25)
Adjusted R^2	0.1848		0.1696		0.1973		0.1641		0.0981		0.1421	
N. of cases	83		83		37		37		129		129	

Significance levels: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$;

Entries are multiple linear regression coefficients with standard errors in parentheses.

Source: Data: Comparative Study of Electoral Systems (2015).

Table 4

Comparison of models for left-wing, center and right-wing voters (dependent variable: Like-Dislike MHP [0-10])

	Left			Centre			Right					
	Proximity		Directional	Proximity		Directional	Proximity		Directional			
	b	(se)	b	(se)	b	(se)	b	(se)	b	(se)		
Model of Voting (Proximity/Directional)	0.21	(0.11)	Omitted		0.89**	(0.24)	0.05	(0.09)	0.41***	(0.11)	-0.03**	(0.01)
Education (Ref.: No Education)												
Primary/Lowest Secondary	0.35	(1.32)	1.16	(1.28)	5.47*	(2.57)	3.75	(3.13)	-0.77	(1.81)	-0.38	(1.87)
Post-Secondary	0.17	(0.31)	0.97	(1.27)	6.67*	(2.64)	5.87	(3.23)	0.73	(1.96)	1.28	(2.02)
University	0.29	(1.35)	0.93	(1.34)	4.39	(2.62)	3.10	(3.20)	-0.81	(2.03)	-0.07	(2.10)
Political Information	-0.69	(0.36)	0.65	(0.37)	0.43	(0.72)	-0.85	(0.78)	0.19	(0.36)	-0.07	(0.37)
Income (Ref.: Lowest Quintile)												
Second Quintile	0.23	(0.92)	0.63	(0.91)	-1.84	(1.41)	0.11	(1.73)	1.35	(1.34)	1.63	(1.39)
Third Quintile	-0.27	(0.95)	-0.02	(0.96)	0.59	(1.58)	2.14	(1.87)	2.90*	(1.36)	3.32*	(1.41)
Fourth Quintile	0.37	(0.92)	0.60	(0.93)	0.42	(1.25)	0.44	(1.54)	3.29*	(1.40)	3.67*	(1.45)
Highest Quintile	0.18	(0.99)	0.55	(1.00)	1.95	(1.33)	2.01	(1.63)	3.25*	(1.34)	3.88**	(1.38)
Gender (Ref.: Male)	0.36	(0.54)	0.29	(0.55)	1.77	(1.10)	2.05	(1.35)	-0.57	(0.60)	-0.80	(0.62)
Age	-0.01	(0.01)	-0.01	(0.01)	0.03	(0.03)	-0.00	(0.04)	0.01	0.02	0.01	(0.02)
Constant	4.72	(2.48)	2.38	(2.22)	-3.20	(3.33)	-0.68	(4.01)	2.23	(2.55)	1.26	(2.65)
Adjusted R ²	0.0231		-0.0163		0.3172		-0.0285		0.2310		0.1714	
N. of cases	83		83		37		37		129		129	

Significance levels: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$;
 Entries are multiple linear regression coefficients with standard errors in parentheses.

Source: Data: Comparative Study of Electoral Systems (2015).

Table 5

Comparison of models for left-wing, center and right-wing voters (dependent variable: Like-Dislike HDP [0-10])

	Left			Centre			Right					
	Proximity		Directional	Proximity		Directional	Proximity		Directional			
	b	(se)	b	(se)	b	(se)	b	(se)	b	(se)		
Model of Voting (Proximity/Directional)	0.38	(0.24)	-0.12	(0.28)	1.05**	(0.28)	-0.06	(0.10)	0.30***	(0.06)	0.04***	(0.00)
Education (Ref.: No Education)												
Primary/Lowest Secondary	-5.09*	(2.16)	-5.58*	(2.18)	-8.84**	(2.91)	-8.07*	(3.59)	1.00	(0.67)	1.58*	(0.67)
Post-Secondary	-6.04**	(2.14)	-6.34**	(2.18)	-8.98**	(3.02)	-9.46*	(3.74)	1.08	(0.72)	1.57*	(0.72)
University	-6.20**	(2.25)	-6.62**	(2.28)	-9.69**	(2.98)	-9.04*	(3.68)	0.87	(0.74)	1.32	(0.73)
Political Information	-0.31	(0.61)	-0.29	(0.62)	0.49	(0.74)	-0.77	(0.96)	0.10	(0.13)	0.10	(0.12)
Income (Ref.: Lowest Quintile)												
Second Quintile	-3.64*	(1.52)	-3.26*	(1.56)	0.17	(1.79)	-2.67	(1.99)	-0.19	(0.47)	-0.17	(0.46)
Third Quintile	-0.23	(1.60)	-0.14	(1.64)	-4.32*	(1.78)	-5.46*	(2.17)	0.22	(0.49)	0.40	(0.46)
Fourth Quintile	-2.54	(1.55)	-2.63	(1.57)	-0.98	(1.64)	-3.90*	(1.77)	0.04	(0.50)	0.27	(0.47)
Highest Quintile	-2.36	(1.65)	-2.26	(1.70)	-0.81	(1.61)	-2.68	(1.88)	0.16	(0.47)	0.30	(0.45)
Gender (Ref.: Male)	-2.03*	(0.92)	-2.01*	(0.97)	-2.92*	(1.26)	-2.51	(1.56)	0.00	(0.21)	0.03	(0.21)
Age	-0.05	0.03	-0.06*	(0.03)	-0.10*	(0.03)	-0.10*	(0.04)	0.01	(0.00)	0.00	(0.00)
Constant	15.17***	(3.68)	15.21***	(3.74)	18.69***	(3.83)	16.66***	(4.90)	1.22	(0.90)	-1.98*	(0.92)
Adjusted R ²	0.1955		0.1701		0.4790		0.2073		0.1195		0.1746	
N. of cases	83		83		37		37		129		129	

Significance levels: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$;

Entries are multiple linear regression coefficients with standard errors in parentheses.

Source: Data: Comparative Study of Electoral Systems (2015).

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