AN APPLICATION OF PROSPECT THEORY ON ANALYSIS OF STRATEGIC
VOTING: THE EFFECT OF INCUMBENCY ON REFERENCE POINT

by

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ABSTRACT

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Prospect theory is one of the most influential decision making theories in social sciences. However, it has been ignored by the literature of strategic voting in which expected utility theory is widely preferred. In this study, I apply two claims of prospect theory, reference point dependency and loss aversion, on the analysis of strategic voting. The purpose of this study is to understand the impact of voter's reference point on the probability that a voter casts strategic vote in election. Hypotheses are derived from a formal model which incorporates reference point and loss aversion into the analysis of strategic voting. The model predicts that voters, whose most preferred party or candidate is the incumbent, are more prone to vote strategically than voters, whose least preferred party or candidate is the incumbent. In addition to this, when the place of the incumbent in preference ranking of the voter in which, voter ranks parties/candidates in order of preference, increases; probability of strategic voting increases as well. To test these predictions, experiments were conducted with student and farmer subjects. Also, statistical analyses were done with survey data from the 2015 British Election Studies (BES) for the 2010 and the 2015 UK General Elections. Results from experiments and statistical analyses provide support for predictions of this study.

Özet

STRATEJİK OY VERME DAVRANIŞI ANALİZİNE BİR BEKLENTİ TEORİSİ
UYGULAMASI: İKTİDARIN REFERANS NOKTASINA ETKİSİ

Faruk Aksoy

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Anahtar Sözcükler: Stratejik oy, Beklenti Teorisi, Kayıp Hoşnutsuzluğu, Referans
noktasına bağımlılık

Sosyal bilimlerde Beklenti teorisi (Prospect Theory) karar alma süreçlerini
açıklayan en etkili teorilerden birisidir. Ancak, beklenen fayda(expected utility)
teorisinin sıkça kullanıldığı stratejik oy verme davranışı üzerine yapılmış çalışmalarda
ihmal edilegelmiştir. Bu çalışmada, beklenti teorisinin iki temel savı olan referans
noktasına bağlımlılık(reference point dependency) ve kaybetme hoşnutsuzluğu (loss
aversion) stratejik oy verme davranışının analizine eklemlenmektedir. Bu çalışmadaki
temel amaç, seçmenin referans noktasının stratejik oy verme ihtimali üzerini etkisini
araştırmaktır. Referans noktası bağımlılığı ve kaybetme hoşnutsuzluğunun uygulandığı
bir modelden iki ana hipotez türetilmiştir. Buna göre, seçim öncesinde, en çok tercih
ettiği parti(the most preferred party) yada aday iktidarda olan seçmenlerin, en az tercih
ettiği parti(the least preferred party) yada aday iktidarda olan seçmenlere nazaran
stratejik oy vermeye daha meyilli olması beklenmektedir. Bununla birlikte, iktidardaki
parti yada adayın, seçmenin partileri/adayları onlara hissettiği yakınlığa göre
konumlardırdığı sıralamadaki yeri yükseldikçe, seçmenin stratejik oy verme ihtimalinin
artması beklenmektedir. Bu tahminleri test etmek için öğrenci ve çiftçilerin katıldığı
deneyler yapılmıştır. Ayrıca, 2015 British Election Studies anket verileri kullanılarak
2010 ve 2015 Birleşik Krallık Genel Seçimleri için istatistiksel analizler yapılmıştır.
Deneylerin ve istatistiksel analizlerin sonuçları hipotezleri destekler niteliktedir.

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Chapter 1

Introduction:

Strategic voting, which traditionally means casting one's vote for the second most preferred party or candidate, is one of the most studied topics in the literature of voting behavior. Scholars mostly seek to find conditions that make strategic voting a more beneficial option for voters. Effects of different electoral systems, electoral expectations, institutional setting, personality etc… on the probability that people cast their vote strategically, are widely discussed in the literature. Also, formal models are very common to theorize strategic voting. In fact, expected utility theory is the main tool to model strategic voting. However, the assumptions of expected utility theory have been criticized by psychological oriented theories when explaining human behavior. One of the most common psychological based theories which criticize these assumptions is prospect theory which is applied throughout various fields in social science for various issues. However, in strategic voting literature, prospect theory has been ignored by scholars, in this study; there will be an application of prospect theory to the analysis strategic voting. This application offers a new condition, satisfaction level from status-quo, which alters the probability of strategic voting. Applying prospect theory offers a new insight from a different perspective when analyzing strategic voting as a political behavior.

Two interrelated concepts of prospect theory might help to explain strategic voting. According to prospect theory, when people choose among alternative options, they evaluate these options and their expected outcomes as loses and gains. Besides, to determine losses and gains, people resort to a reference point which is a natural zero point. If the expected outcome of an option is worse than reference point, it is coded as

loss. On the other hand, if it is higher than the reference point, it is coded as a gain. This distinction becomes more meaningful when the second concept of prospect theory is included into the argument. People give more importance to avoiding expected losses than increasing their expected gains. This is called loss aversion which is depicted by motto that "loss looms larger than gain". So, in more generic terms, people are more prone to choose the option which ensures to avoid expected loss over the option that increases possible gain even the expected utility of latter is higher than the former. Evaluating options regarding reference point and loss aversion takes several forms in different applications which will be discussed in detail in next paragraphs.

How can this argument be applied to the analysis of strategic voting? First of all, a reference point should be defined to analyze strategic voting according to prospect theory. One possible conceptualization of the reference point might be the following: Each voter has a preference ranking in which parties or candidates are listed in an order as the most preferred party, the second most preferred party, the third most preferred party etc… The satisfaction level of the voter increases when the place of the incumbent on voter's preference ranking increases. In other words, the incumbency of the most preferred party[1] is the ideal condition for the voter. When the status-quo drifts apart from the ideal condition, the satisfaction level of the voter decreases. So, the distance of status-quo to the ideal position is defined as the satisfaction level of the voter. It is the reference point for the voter when she decides in the next election. She compares expected outcomes of the election with her pre-election satisfaction level before deciding the party that she votes

This argument reveals the research question of this study. What is the effect of voter's satisfaction level, in other words the reference point, on her probability of voting strategically? Under the specific conditions in which strategic voting is a reasonable option, people are more prone to vote strategically when they have higher reference point, or higher satisfaction level from the status-quo. In upcoming paragraphs there will be detailed explanation of proposed mechanism and there will be a formal model in which attributes of prospect theory are applied.

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[1] Analysis is applicable to both elections that parties compete and elections that candidates compete. So, party and candidate will be used interchangeably in first chapter.

In this chapter, there will be a proper definition and a literature review of strategic voting. Also, there will be a detailed description of prospect theory and a brief review of the literature as well. Then, the application of prospect theory will be explained in detail and it will be backed up with a formal model. Lastly in this chapter, testable hypotheses will be derived from the formal model.

In second chapter, an experimental study which was conducted with student and farmer subjects will be presented. Some of the hypotheses which are derived from the model will be tested within the experiment. In the third chapter, there will be an analysis of the UK parliamentary elections via the British Election Study dataset in which hypotheses of this study are tested. Lastly, there will be a conclusion chapter to sum up all of the arguments and findings.

1.1 What is strategic voting?

The definition of strategic voting is a package which necessarily explains why and when people vote strategically. Modern explanations of strategic voting depend on the Law of Duverger. The famous theory of Duverger states that countries which have plurality rule elections with single member districts tend to have two-party systems (Duverger, 1954). Two mechanisms embedded in plurality rule triggers this outcome. The first one is called the *mechanic effect*. Plurality rule with single member district favors large parties because, in each constituency, there is only one seat to allocate which is reserved for the party which wins the plurality of the votes. It means that there is an absolute winner in the election. On the other hand, since other parties win nothing, they are absolute losers. This feature of plurality rule with single member-districts affects the voting behavior of the electorate. This is called the *psychological effect*. Voters who support parties that have no chance to win the election know that if they vote for their most preferred party, they waste their vote since; their party cannot win any representation in plurality elections with single member district. Therefore, they vote for the party which has the credible expectation of the voters to win elections and its policy position is closer to her policy position than the other large party. This mechanism leads to two major parties dominating most of the seats in the legislature. Voters of parties which are not expected to gain first two seats in the election, vote for one of the effective parties regarding their preferences. Thus, votes aggregate for two parties in every election which naturally leads to a two party systems. All in all, people

vote for the most preferred effective party so as not to waste their votes by voting for their most preferred party.

In fact, strategic voting was properly defined by Downs. He argues that people consider the winning probabilities of parties and their preference toward these parties (Downs, 1957). What this means is, if the party that the voter most prefer has no chance to win elections, she may choose to vote for another party which has a higher chance of winning election and which she simultaneously prefers over other parties. This is called strategic voting.

As it can be deduced from the above-mentioned definition, only a subset of voters has an incentive to vote strategically. So, it is a viable option only for some of the voters. Who are those voters? An important part of the literature seeks to define the voters that have incentives for strategic voting. For example, Blais and Nadeau argue that people vote strategically when their most preferred candidate is expected to be placed last in the elections in which there are three competing candidates (Blais, 1996). Alvarez et al. state that voters whose most preferred candidate has a lower expected vote share than the second most preferred candidate are the subset that have an incentive to vote strategically (Alvarez; 2000). Most of these studies focus on the expected electoral standing of the most preferred party of the voter to define her as a probable strategic voter. Current studies in the literature redefine the meaning of "winning" the election. This leads to a change in the definition of strategic voting and voters that have an incentive to vote strategically. The reason behind this redefinition is to reveal the voters' probability of voting strategically under different electoral systems. For instance, people might vote strategically in PR systems to influence post electoral coalition formation especially where multi-party coalitions are common. This is called tactical coalition voting (Blais, 2014). The same phenomenon was underlined by Cox who states that people may conduct portfolio maximizing behavior rather than seat maximizing one. This means that they may consider the possible coalition options when they decide to vote. Therefore, people may vote strategically for another party other than their most preferred party to increase the chance of their most preferred party being in a coalition (Cox, 1997). Another example might be threshold insurance voting by which voters try to ensure that a prospective smaller coalition partner can reach the electoral threshold (Blais, 2014).

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Thus, strategic voting is not just an electoral tool which people can use only when their most preferred party has little chance to win the election. There are a number of considerations which people consider when voting strategically to reach a better electoral outcome; it is not only winning the election. Strategic voting is a type of electoral behavior which depends on an attitude that praises strategic consideration. In this respect, one of the most impressive definitions of strategic voting is stated by Abrahamson et al (2010). Sincere voting is to vote for the most preferred party without considering the possible outcomes of the election. It means that sincere voters act according to only their preferences towards parties. On the other hand, strategic voting means that voter evaluates all possible outcomes and their probabilities and casting their vote to reach the best outcome as much as possible (Abrahamson et al., 2010). They use the term *tactical vote* to explain voting for a party than the most preferred party. In that case, voting for the most preferred party might be a type of strategic voting as well if it is the best option among others. This is actually called a straightforward vote (Farquaharson, 1969).

So, the answers for the question of who votes strategically have expanded in the literature in recent years. The reason behind this expansion is observations that cannot be explained by a narrow definition of strategic voting, and related to this, other conditions that alter the probability of strategic voting. There will be a review of some of these conditions in the next section.

Nevertheless, in this study, the traditional definition of strategic voting will be used. Besides, to identify voters who have incentive to vote strategically, a necessary condition for strategic voting is defined: The most preferred party of the voter needs to have less chance of winning election than her second most preferred party and at least one more party should have higher expected vote share than the voter's most preferred party. If the voter casts a vote for her second most preferred party under this circumstance, then this is called strategic voting. I will elaborate why strategic voting is defined as such in the next section where conditions that alter the probability of strategic voting will be discussed.

1.2 Conditions that alter the probability of strategic voting:

1.2.1 Electoral Expectations:

To review some of these conditions, I will classify them into four categories. The first group of conditions is the electoral expectations. Actually, there are two important types of electoral expectations that are discussed with respect to their effects on voter's probability of voting strategically. The fist one is *marginality*. Marginality implies the vote share margin between the leading and runner-up candidates. For instance, in a three candidate race, marginality corresponds to the expected vote share difference between the candidate that is expected to finish the competition first and the candidate that is expected to finish the competition second. There are different arguments about the effect of this margin on the voter's probability of voting strategically. Suppose that three candidates participate in the election and the voter's most preferred candidate is the one who has the least chance to win the election. Also, voter's second most preferred candidate is the one who is expected to be the runner-up in the election. The general tendency of the literature suggests that when the margin between the leading candidate and the runner-up decreases, the voter's probability of casting a strategic vote increases (Fisher, 2002). If the race between the leader and the runner-up candidates is close, voters of the trailer candidate feel that their vote might change the outcome of elections and consequently be more inclined to vote strategically. However, Myatt (2000) argues that when this margin increases, voters of the trailer candidate are more prone to cast strategic vote especially in large constituencies (Myatt, 2000a). In other words, the perception that other people will vote strategically decreases the voter's probability of voting strategically (Myatt, 1999a). In this line of argument, the assumption that the common knowledge about vote share is deployed. Therefore, individuals cannot be sure all together who the leading candidate is. Thus, others' strategic voting is a negative feedback which makes the individual voter less inclined to vote strategically (Myatt, 1999b).

The second type of expectation is the *distance from contention*. It refers to the expected vote share difference between the most preferred party and the second most preferred party in the given example in the last paragraph. When distance from contention increases, voters of the trailer candidate are more prone to vote strategically (Myatt, 2014).

1.2.2 System Characteristics:

One of the most discussed topics about the conditions that alter the voter's probability of voting strategically is the electoral system of the country. Originally, Duvergian causal explanation for strategic voting focuses on plurality elections with low district magnitude. So, strategic voting is depicted as a part of plurality elections. In his seminal work, Cox states that proportional representation vanishes strategic voting especially where the district magnitude is more than five (Cox, 1997). If district magnitude is more than five, people cannot obtain clear information about the possible seat allocation. But, as it was indicated, voter may show portfolio maximizing behavior with considering coalition possibilities rather than showing seat maximizing behavior. Still, according to Cox, first past the post systems exhibit a more suitable environment for strategic voting. This attitude in the literature caused an enrichment of definitions of strategic voting. In fact, some studies argue that proportional electoral rules and plurality rule are equally suitable for strategic voting (Abrahamson et al, 2010).

There are also some studies which analyze strategic voting in some other electoral systems. For example, scholars analyze strategic voting behavior in majority run-off elections and they reach different results. Some scholars suggest that in the first round, people are more prone to vote sincerely and even their most preferred candidate is the trailer one because they have a chance to coordinate against the least preferred candidate in the second round (Martinelli, 2002). Others argue that people may cast strategic vote in the first round as well to choose the candidate which their most preferred candidate will compete with in the second round (Bouton, 2015).

Moreover, effects of other electoral institutions on voter's likelihood of voting strategically are examined in the literature. For example, Blais and Erişen argue that when the electoral threshold in a country increases, incentives for voting strategically increase as well (Blais & Erişen, 2014). Also, as it was discussed in the previous part, there is a type of strategic voting which is defined as threshold insurance voting (Blais, 2014).

Another systemic factor that alters the voter's probability of voting strategically is the democratic conditions of the country. It is the general argument that in consolidated democracies, people are more prone to vote strategically (Scheiner, 2009). In new democracies and in countries that have poorly institutionalized party systems,

citizens are less inclined to vote strategically (Scheiner, 2009). All these arguments depend on the fact that in consolidated democracies and in countries which have institutionalized party systems, identifying the political position of candidates is easier. There are more information channels for voters to learn about candidates and their expected vote shares in election. It means that people can predict who the challenger is or which party's policy position is closer to them. Thus, they are able to determine whether strategic voting is a better option or not. However, there are some counter arguments. For example, Duch and Palmer (2002) suggest that voters in Hungary, a post-communist democracy, tend to cast strategic votes as the Duvergian law suggests. Voters abandon small parties to strategically vote for larger parties (Duch, 2002).

Media are another important factor in democratic processes. As it can be predicted, the effect of media on voter's probability of voting strategically is another issue which is discussed in the literature. The most prominent finding of the literature is that when an individual voter believes that media can influence other voters' decision, she is more prone to vote strategically (Cohen, 2009).So, if an individual believes that media is capable of persuading other voters, her probability of casting a strategic vote increases.

1.2.3 Individual level characteristics:

The most recognized individual characteristic which alters voter's likelihood of voting strategically is the strength of the party affiliation of the voter. It is well documented in the literature that when the strength of a voter's affiliation towards her most preferred party increases, she is less prone to vote strategically. Also, when her strength of affiliation towards her second most preferred party increases, it is more probable that she casts a strategic vote (Blais; 1996). Another finding in the literature about party affiliation suggests that non-partisans and weak or small party's voters are more prone vote strategically (Blais, 2010).

There are some other studies which focus on different individual characteristics of the voters. For instance, Erişen and Blais suggest that personality traits of voters affect their inclination to cast a strategic vote. They argue that *openness to experience* and *emotional stability* as personality traits increase the voter's likelihood of voting strategically, because these personality traits help people making rational calculations. On the other hand, agreeableness decreases the likelihood of the voter to vote

strategically since agreeable people make less rational calculations and conduct less competitive behavior. (Erişen, 2014).

1.2.4 Party characteristics:

There are not many studies on how characteristics of parties in a political system affect the likelihood of voters to vote strategically. One of the arguments about the relationship between strategic voting and party characteristic is about ethnic parties. Studies suggest that voters of ethnic parties are more prone to vote sincerely because; they do not care about winning elections (Chandra, 2009). But, Chandra (2009) argues that those voters may cast strategic votes especially in countries where patronage politics is highly prominent in the political setting. It is because, in such democracies, citizens are highly dependent on the state resources and therefore, they have greater incentive not to waste their vote (Chandra, 2009). Another argument about party characteristic can be found in the paper of Magaloni in which she analyzes PRI survival in Mexico. She argues that there is no reason for opposition voters to cast strategic vote for the strongest opposition party since there was no clue about the decline of the hegemonic party in Mexico (Magaloni, 2008).

The incumbency of the most preferred party or candidate is a type of condition that alters the probability of the voter to vote strategically. It is also a type of party or candidate characteristic. This study contributes to the strategic voting literature in two respects. Firstly, it introduces a type of party characteristic that alters the voter's likelihood of voting strategically. Secondly, it applies prospect theory on the decision making process of strategic voting. Besides, the model in this paper despite the fact that it is simple and incomplete, is the first attempt to model strategic voting with prospect theory rather than expected utility theory. It tries to introduce a voting function that is converted into a value function which has attributes of prospect theory.

1.3 Conceptualization:

In this study, I will try to represent a different conceptualization of strategic voting. As it was explained in the preceding review, there is a necessary condition for the voter to cast a strategic vote: The most preferred party of voter must have less chance for winning the election than her second most preferred party and there should be at least one more party which has a higher expected vote share than the most preferred party. It is a necessary but not sufficient condition for the voter to cast a

strategic vote. All other conditions that were discussed are neither necessary nor sufficient conditions. However, when some of them are combined with this necessary condition, their combination is sufficient for voter to cast strategic vote. These conditions are defined as INUS conditions (Mahoney, 2009). If a necessary condition is supplied with a group of these conditions, it makes them all together sufficient to lead a particular outcome. For example, if the most preferred party of the voter has less chance of winning the election than her second most preferred party, it means that the necessary condition occurs. However, it may not be enough for the voter to vote for her second most preferred party. If the expected vote share difference between her most preferred party and her second most preferred party is high enough and she also has an emotionally stable personality, then it is more likely that she may vote strategically. On the other hand, if her most preferred party has a chance to win the election, strategic voting is not a rational option for her. Originally, INUS cause argument is defined as a deterministic explanation, but it may be possible to convert it to a probabilistic explanation. If necessary condition occurs, then each new added INUS condition increases the voter's likelihood of voting strategically. Besides, it might be possible that specific combinations of INUS causes may increase or decrease the likelihood of the voter to vote strategically. For example, in a country where electoral threshold and PR rules are implemented, occurrence of the necessary condition may increase voter's probability of voting strategically, but in a country where electoral threshold and majority run-off rules are implemented occurrence of the necessary condition of strategic voting may decreases the likelihood of the voter to vote strategically. Also, combination of INUS causes may increase or decreases each other effects on strategic voting.

Incumbency of the most preferred candidate is also type of INUS cause. It needs the necessary cause to show its effect on strategic voting. Also, it might affect and be affected by other INUS causes. So, the hypothesis is that incumbency of the most preferred party increases the probability of strategic voting of the individual voter; also, there might be relationships between other INUS variables and the incumbency of the most preferred candidate. It is useful a way to see whether there are spillover effects between variables and in this way possible multicollinearity between independent variables can be detected.

It is important to highlight that all variables have separate causal relationships with the dependent variable. A combination of them just increases the probability of the occurrence of the dependent variable. The combination does not necessarily have separate causal explanation, it just increases the probability. As I will discuss in the next section, in this study prospect theory is applied to explain the relationship between the incumbency of the most preferred party and strategic voting.

1.4 Prospect Theory:

Rational choice theory for decision making is a widely applied framework in political science. One of the variants of rational choice theory is expected utility theory which explains individual's choices with respect to the probability of occurrence of events and the utility that individual takes from them. Expected utility theory assumes that people make rational calculations when they choose an option over others: When people make choice among different options, they calculate the expected utility of each option. To do this, they multiply the probability of the occurrence of an outcome with the subjective utility that people gain from this particular outcome. This calculation is made for each probable outcome of an option. Then, results of these multiplications are summed up to calculate expected utility from choosing an option. To decide between options, they compare the expected utilities of these options. After the comparison, they choose the option which has the highest expected utility. It is still the most preferred theory in social sciences, political science and strategic voting literature.

However, there are several theories that criticize the assumptions of expected utility theory. Some of them do not give up these assumptions, but they propose that the validity of these assumptions depend on the availability of viable information when making rational calculations and people's willingness to pay attention to the issue. So, if there is not enough and viable information to make a rational calculation and if they do not have enough time and/or energy to make these calculations, the assumptions of expected utility theory becomes void.

Most of the theories that criticize expected utility theory are psychologically oriented theories. These theories underline the cognitive capacity and biases of human beings. One of the foremost psychologically oriented theories is *bounded rationality*. It suggests that some of the cognitive biases may prevent people from making rational calculations when they need to choose over alternatives (Simon, 1955).

Like others, prospect theory provides one of the most important theoretical criticisms of expected utility theory. Comparing properties of prospect theory with expected utility theory might be a good way to explain prospect theory itself. First of all, prospect theory defines decision problems. A decision problem consists of options, possible outcomes and the consequences of these options and probabilities of occurrence for these outcomes of options. It is the same in expected utility. To predict the act, outcomes of options are multiplied by their probabilities and then they are summed up. Then, expected utilities of options are compared. The option that has the higher utility is predicted as being the expected behavior. Prospect theory assigns weighting function for probabilities and the value function for options and outcomes of which the properties and the way in which they are different than their counterparts in expected utility theory.

Firstly, prospect theory diverges from expected utility in terms of the decision maker's perception of the decision problem. It defines decision frames in which decision makers construct conceptions about options, outcomes and probabilities regarding the formulation of the decision problem, norms, habits and personal characteristics. The decision of the voter depends on these frames.

The concept of decision frames is against the assumption of transitivity of expected utility theory. This means that a rational individual decides according to a consistent preference ranking in each instance. Preference ranking does not change due to the formulation of a problem. However, series of experimental studies find evidence that the preferences of people may reverse. The utility from a particular option may change for an individual even if the expected utility of that option stays the same under different conceptualizations of the same problem.

According to prospect theory, the reference point of a decision problem is a key for voter's preference reversal. The reference point refers to the current real or hypothetical status of the commodity which will change according to individual's decision. It divides outcomes of options as gains and losses with respect to a natural zero point. For example, the salary of a decision maker in her previous job is the reference point when she evaluates the salaries which are offered to her by different companies. If the offer is higher than the salary that she was paid in her previous job, she perceives herself in a gain frame. However, if the offer is lower than the salary that

she was paid in her previous job, she perceives herself in a loss frame. So, if a particular outcome is below the reference point, it is coded as a loss and if it is above the reference point, it is coded as a gain. Prospect theory suggests that the magnitude of a reference point affects the decision of people. The reason behind this is that people are more sensitive towards losses than gains. So, losses loom larger than gains (Kahneman, 1981). This is called *loss aversion*. Thus, when the reference point of an individual changes, her decision for the very same problem might change as well. Also, people are more risk averse in the gain domain and they engage more risk seeking behavior in the loss domain.

Another criticism towards expected utility theory is about invariance. This means that the decision of the individual should not depend on how outcomes and probabilities are described. So that framing of outcomes and probabilities should not change the preferences. But, prospect theory suggests that framing matters. The ratio-difference principle is one of the explanations for how and why framing the options may change the preferences of people. The ratio-difference principle suggests that the impact of positive differences of two values diminishes when their ratio decreases. For example, the difference between 10 and 20 percent is higher than difference between 80 and 90 percent since $\frac{20}{10} > \frac{90}{80}$. So, it is more effective to say that the unemployment rate decreases from 20% to 10% than saying that the employment rate increases from 80% to 90%. Even if these differences objectively have the same value, framing makes the former change more valuable than the letter change which may cause preference reversal[2]. It is a property of both value and weighting functions.

All these properties are reflected in an S shaped value function. It is concave above the reference point and convex below it. Also, it is steeper below the reference point than above it. This means that the difference between 100 and 120 has lower subjective value than the difference between 0 and 20. This is called *diminishing sensitivity* and it is explained by the ratio-difference principle. Additionally, value difference between -10 and -20 is higher than value difference between 10 and 20 since the value function is steeper under the reference point. This is called *loss aversion*.

Another divergence of prospect theory from expected utility theory is about probabilities of occurrence. Rather than evaluating probabilities with their objective

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[2] See Problem 9 and 10 in Analysis of Political Choices.

values, prospect theory offers decision weights. This is represented as a weighting function. The basic characteristic of a weighting function is that it over weights low probabilities, while it under weights middle and high probabilities. Therefore, people perceive low probabilities higher than their objective values while they perceive high and overall probabilities lower than their objective values. This is called as the *conservatism bias* which is one of the most studied cognitive biases (Hilbert, 2012). Also, the weighting function does not behave well at the edges. It means that if the probability of the outcomes turns impossibility to possibility or possibility to certainty, it has more impact on the decision (Fox, 2000). So, if a probability increases from 0% to 1% and from 99 percent to 100 percent, this change is perceived as higher than its objective value. This is called *bounded subadditivity* (Tversky, 2000).

In previous paragraphs, there was a description of prospect theory depending on how it differs from expected utility theory. From this point on, there will be a description of how this process operates as a mechanism. Prospect theory divides decision making process into two phases: editing and evaluation phases. In editing phases, people organize and reformulate options and outcomes to simplify their choices. There are several operations in the editing phase. The first one is *coding*. This operation codes options and/or problem as losses or gains with respect to the reference point. Another one is *segregation* which distinguishes sure loss and gains from probable ones. It defines risky and riskless components as well if there are any. *Cancellation* is also an operation that cancels out same outcomes and probabilities. There is also the *simplification* operation that rounds up probabilities and outcomes. The last one is *detection dominance* which highlights dominant alternatives over others (Kahneman, 2000). After the editing phase, people make the utility calculation with edited properties in the evaluation phase. So, all properties of prospect theory operate in the editing phase of the decision making process.

There are many applications of prospect theory in different fields of social sciences. One of the most famous applications in the political science literature is the incumbent oriented voting hypothesis. People code benefits of moving away from the status-quo as gains and the cost of moving away from it as losses. Since losses loom larger than gains, moving away from the status-quo is less desirable (Quattrone, 1988). In that respect, a challenger whose policies are perceived better may not win an election because when voters make a cost benefit analysis, they overweight the costs. This may

cause the objectively more beneficial alternative to be seen as less beneficial *vis-a- vis* the incumbent (Levy, 2003). There are different variants of incumbency oriented voting. For instance, the challenger has more chance when there is an economic crisis, since voters' benefit from changing the incumbent increases. It may balance the loss aversion and increase the chance of the challenger vis-à-vis the incumbent. Thus, people are more inclined to choose the risky option which is the challenger whose performance is unknown (Kahneman, 1979). Also, prospect theory is applied to explain the asymmetry between the effect of economic recession and the effect of economic prosperity on voting behavior. Economic recession is evaluated as a loss while economic prosperity is evaluated as a gain. Therefore, recession affects voting behavior more than economic prosperity (Bloom, 1975). Moreover, using the same logic, negative attitudes towards candidates are more effective on voting behavior than positive attitudes towards candidates (Kernell, 1977). Prospect theory is also applied to policy reform processes. Societies are risk averse about policy reforms since policy reforms are coded as gains (Alesina, 2014).

Manipulation of the reference point is another issue in the literature. Tversky and Kahnemann show that when legislation on women's rights is framed as the elimination of discrimination toward women, people support legislation, but if it is framed as the improvement of women rights, support for legislation decreases. The former frames the initial condition as a loss, so there is discrimination towards women in society. But the latter frames the initial condition that the women's rights have already been guaranteed at some level and that legislation will improve them. Therefore, it is a gain. Since losses loom larger than gains, people support legislation more when it is framed as elimination of discrimination (Kahneman, 2000). Moreover, Nincic argues that when the president of the U.S frames an intervention as "protective" he has more electoral and congressional support than when he frames it as "promotive" (Nincic, 1997). In that case, protective implies loss while promotive implies gain.

There are applications of prospect theory on international relations as well. Jervis suggests that since states that support the status-quo are in a loss frame, they take more risk to defend the status-quo than the states that want to change it (Jervis; 1992). Also, Stein applies prospect theory to territory disputes between states. He suggests that states which lose territory do not update the ex-ante territorial status-quo as a reference point. They continue to use it as reference point. But, states that gain this territory

update their reference point according to the new territorial status-quo. This causes that both states to perceive themselves in a loss frame and both to engage in risk seeking behavior (Stein, 1991).

Conflict Resolution has been another field of study where prospect theory has been applied. Concession aversion is one form of loss aversion in which parties perceive their concession as losses. On the other hand, concessions of the opposite party are perceived as gains. It causes an impasse since losses are more important than gains on the negotiation table (Kahneman, 2000).

1.5 Application:

To apply prospect theory to the analyses of strategic voting, first of all, the reference point which determines the losses and gains from an election should be identified. The reference point for the electoral decision is defined in this study as the satisfaction level from the status-quo. The reference point of the voter depends on the place of incumbent within the preference ranking of the voter. This means that the satisfaction level of the voter from the status-quo increases, when the incumbent's place in the voter's preference ranking increases. In other words, the satisfaction level of the voter gets the highest value when her most preferred party or candidate is the incumbent and it gets the lowest value when her least preferred party or candidate is the incumbent.

The second step is applying the editing phase on the analysis of strategic voting. The voter compares her satisfaction levels of expected electoral outcomes to the reference point to code outcomes of the election as losses or gains. To evaluate strategic voting in that manner, we need to include the necessary condition of strategic voting into the analysis. When the most preferred party or candidate has little chance to win the election, voting for the second most preferred party or candidate who has more chance to win the election becomes a viable option for the voter. It is important to note that, if the necessary condition of strategic voting does not occur, then strategic voting is not a viable option for the voter. Under the necessary condition of strategic voting, the voter may waste her vote if she votes for her most preferred party or candidate. This is because voting for the most preferred party or candidate under this condition aims to increase the winning chance of the most preferred party or candidate, but this outcome has little chance of occurring since the most preferred party or candidate has little chance to win the election.

If voter chooses to vote sincerely when the necessary condition of strategic voting occurs, it means that she tries to increase her satisfaction level from the status-quo before the election by increasing the probability of her most preferred party or candidate winning the elections. So, she tries to increase her expected satisfaction level after the election, if it is compared with the satisfaction level before the election. It implies that the voter's reason to vote sincerely is to maximize gain from the election when she compares the expected election outcome and reference point. On the other hand, if she votes for her second most preferred party or candidate, she aims to prevent the less preferred party or candidate from winning the election. It means that she tries to minimize her satisfaction level loss when she compares her satisfaction level before the election and expected satisfaction level after the election.

As the third step, loss aversion is incorporated into the analysis. Since, loss looms larger than gain, the voter prioritizes to minimize her loss from the election than maximize her gain from it. So, she chooses to vote strategically to minimize her loss from the election or voting sincerely to maximize her gain.

The fourth step of the analysis is to detect how the variation of the reference point changes the voter's probability of voting strategically. To explain the argument, let's compare the voter's decision when her most preferred party or candidate is the incumbent and her decision when her less preferred party or candidate is the incumbent. If her most preferred party is the incumbent, then her satisfaction level from the status-quo attains the highest value. In that case, her possible satisfaction level gain from the election stays at the minimum, but her possible satisfaction level loss reaches the maximum. On the other hand, if her less preferred party or candidate is the incumbent, her satisfaction level from the status-quo is at the lowest value. So, her possible satisfaction level loss from the election is at a minimum and her possible satisfaction level gain from the election is at a maximum. As it was discussed, strategic voting aims to minimize the loss with decreasing the chance of the less preferred party or candidate to win the election. Therefore, if the voter's less preferred party or candidate is the incumbent, she has less to lose from the election with regard to the reference point. Because of this, she is less prone to vote strategically than the voter whose most preferred party or candidate is the incumbent. So, a higher satisfaction level increases the amount of probable losses from the election and decreases the amount of possible gains from it. This means that as the option that aims at decreasing the amount of loss,

strategic voting becomes the more viable option, when satisfaction level of the voter from the status-quo increases.

1.6 Model:

To depict the application of prospect theory on strategic voting more discretely, I try to model the strategic voting by including a reference point and voter's satisfaction level into the calculation. Before the formulation of the Model, an important point needs to be taken into perspective. This model is not able to explain voting turnout or protest vote of the voter. So, there is an assumption that the individual voter votes either sincerely or strategically.

This model is based on the assumption that there are three candidates who contest in the election. Candidate i is the most preferred candidate of the voter and the voter's preference towards her is x_i. Candidate s is the second most preferred candidate of the voter and the voter's preference towards her is x_s. The third and the least preferred candidate of the voter is t and the preference of the voter towards her is x_t. So, the preference order of the voter is:

$$x_i > x_s > x_t$$

(1.1)

The winner is determined by plurality rule which means that the candidate who gets the plurality of the votes in the first round will win the election. So, there is no second round. This model is applicable not only to the presidential election where candidates compete with each other, but also to parliamentary elections where parties compete with each other in districts in which the magnitude is one. If district magnitude is one, it means that there is only one seat to allocate in each district. Thus, in each single district, the election operates as if it were a presidential election. Also, this is applicable to local level executive elections. So, it is possible to use the party rather than the candidate when the actors that participate in the elections are named. I will name those actors as candidates for the sake of simplicity, but they can be named as parties as well.

As in the original model form of prospect theory, this model contains two functions: Probability function $\pi(x)$ and value function $V(x)$. To calculate the utility

function of the individual voter from the election with regard to the candidate that she votes and the status-quo, these two functions are multiplied with each other.

$$U = \pi(x).V(x)$$

(1.2)

The first part of the utility function $\pi(x)$ represents winning probabilities of the candidates. *Candidate i* as the most preferred candidate is the one who is less expected to win the election, while *Candidate s* has more chance to win the elections. *Candidate t* is the one who is most likely to win elections. These conditions are denoted with expected vote shares:

$$\pi(i) < \pi(s) < \pi(t)$$

(1.3)

The combination of preferences and probabilities constructs the necessary conditions of strategic voting as it was discussed in previous parts. *Candidate i* as the most preferred candidate is the one who is less expected to win elections, while *Candidate s* has more chance to win the election. *Candidate t* is the one who is most likely to win the election.

The second part of the utility functions is the *value function*. The value function reflects the possible improvement in satisfaction level with regard to the election result. I use modified logistic function as the value function:

$$V(x) = \frac{1}{1+.e^{-v(x)}}$$

(1.4)

The reason behind the usage of logistic functions as the value functions is that logistic function has the same shape as the original value function of prospect theory with two exceptions. Firstly, values of logistic function are between 0 and 1. In original prospect theory, there is no such restriction on values. Secondly, unlike the value function of the prospect theory, the slope of the graph for both negative and positive values of x, in this case *v(x)*, are the same. The first property of the function does not cause a problem, but the second one contradicts with prospect theory. But, as I will discuss in the next paragraph, preference towards the status-quo as the parameter of interest will handle this problem and make the logistic function compatible with

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prospect theory. Below, you can find the hypothetical graph of the value function of the original prospect theory and the graph of the original logistic function.

Figure 1.6.1 Graph of Prospect Theory[3]
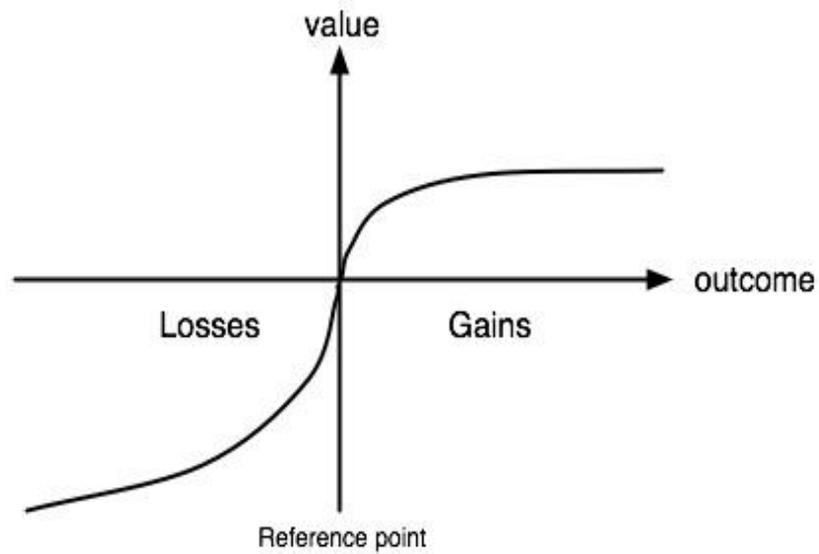
Figure 1.6.2 Logistic Function
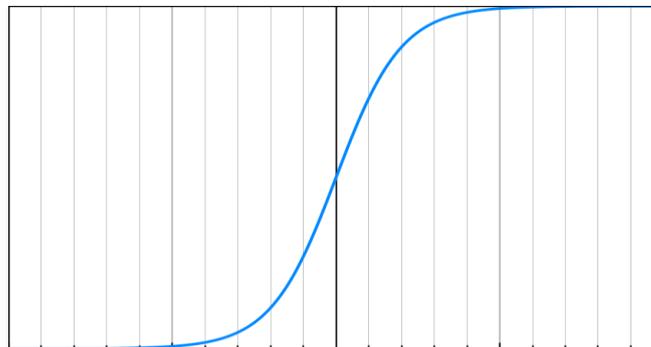
The voting function of the model $v(x)$ represents the utility of voting for a particular candidate. It is different from the value function since value function shaped according to reference point. It also represents the x axis of the graph of the value function:

$$v(x) = (x_v - \delta x_{sq})$$

(1.5)

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[3] Kahnemann, 1981

x_v is the preference towards the candidate who voter is planning to vote for. It can obtain two values: x_i is the value of the voter's preference for the most preferred candidate and x_s is the value of voter's preference towards her second most preferred candidate, where $x_i > x_s$. Also, $(x_v - \delta x_{sq})$ is the difference between the voter's preference for the candidate that she votes for and her preference towards the incumbent candidate which is represented by δx_{sq}. It can obtain values such as x_v. It represents the improvement in amount of the satisfaction level with regard to the vote cast in the election. Therefore, the voting function has a higher value for the voters whose preference towards the incumbent candidate is lower. Furthermore, δ represents the factor that decreases the value of preference for the incumbent *vis a vis* preference towards the voted candidate.

To apply reference point on the value function, the logistic function needs to be modified. The reference point represents, as explained before, the satisfaction level regarding the difference between the preference towards the incumbent and the preference towards the most preferred candidate. In formal terms, it is equal to $(\delta x_{sq} - x_i)$. So, the point that *v(x) =0*, is the inclination point where the voter casts a vote for the incumbent candidate, should represent the reference point. It is important because, it codes losses and gains. To equal the reference point of the function to the satisfaction level of the voter, a coefficient (β) is added to the Model. So, value function represents satisfaction level of the voter if:

$$1 + \left(\delta x_{sq} - x_i\right) = \frac{1}{1 + \beta e}$$

(1.6)

When the equation is solved;

$$\beta = \frac{\left(x_i - \delta x_{sq}\right)}{\left(1 + \left(\delta x_{sq} - x_i\right)\right).\,e}$$

(1.7)

The satisfaction level of the voter is added to 1 because; it is originally lower than zero. Since the logistic function takes values between 0 and 1, it should be modified to make it positive. Adding 1 to satisfaction level normalizes the value of the satisfaction level as the reference point of the voter and makes it an inclination point for

the value function. So, this equation calculates the value of β which equates the value function to the satisfaction level of the voter when the voting function- x axis of graph- is equal to zero. In that way, β ensures that the satisfaction level of the voter is the reference point of the graph.

The main aim of the model is to understand the effect of the satisfaction level of the voter on the voter's likelihood of voting strategically. So, the question is when does the voter choose to vote strategically rather than vote sincerely according to the model? To reveal this, one may compare the utility of strategic voting and the utility of sincere voting for the individual voter. If the former is higher than the latter, then one may expect that the voter uses her vote strategically in the election.

So, it means that:

$$Utility\ of\ Strategic\ Vote > Utility\ of\ Sincere\ Vote,$$

$$\pi(s) \cdot \frac{1}{1 + \beta e^{-(x_s - \delta x_{sq})}} > \pi(i) \cdot \frac{1}{1 + \beta e^{-(x_i - \delta x_{sq})}}$$

(1.8)

The solution for the equation implies that the voter casts a strategic vote when;

$$\frac{(\pi(s) - \pi(i)).}{\beta} > e^{\delta x_{sq}} \cdot (\pi(i). e^{-x_s} - \pi(s). e^{-x_i})$$

(1.9)

If β is written in terms of the satisfaction level of the voter:

$$\frac{(\pi(s) - \pi(i)). (1 + (\delta x_{sq} - x_i)). e}{(x_i - \delta x_{sq})} > e^{\delta x_{sq}} \cdot (\pi(i). e^{-x_s} - \pi(s). e^{-x_i})$$

(1.10)

This calculation depends on two related operations. The voter should decide which behavior is dominant. This depends on the evaluation of probabilities and preferences. If right side of the equation is negative, then sincere voting is the dominant option. Since the left side of the equation is negative due to $(\pi(s) - \pi(i))$ being negative. The utility of sincere voting is greater than the utility of strategic vote. In this case, the expected satisfaction level improvement of the voter does not change the equation. However, if the left side of the equation is positive, then strategic voting may

have a higher utility than sincere voting. This depends on whether the expected vote share of the second most preferred candidate is higher than the expected vote share of the most preferred candidate which is a part of the necessary condition, and preferences towards these parties. Also, in this case, the satisfaction level from status-quo $(\delta x_{sq} - x_i)$ increases the probability of strategic voting as the equation indicates.

As model the indicates, when the satisfaction level of voter with regards to her preference difference between the incumbent and the most preferred candidate increases; the reference point of the voter increases. This means that the value of the possible gain from elections decreases while the possible value of loss from election increases because; more values are below the reference point. Sincere voting increases the probability of gain while strategic voting decreases the probability of loss and since loss looms larger than gains, the probability of voting strategically is higher for the voters who have a higher satisfaction level. Therefore, the first hypothesis is that:

Hypothesis 1: When the satisfaction level of the voter from the status-quo increases, the probability of the voter to vote strategically increases as well.

Let's compare the conditions where the least preferred candidate of the voter and the most preferred candidate of the voter is the incumbent. When necessary condition of strategic voting occurs, strategic voting is the dominant option for both of them. But, in the case that the least preferred candidate is the incumbent, the voter has a lower reference point. Both utility of strategic and sincere voting are almost on the positive side of the graph and so are in the gain frame. But, if her most preferred candidate is the incumbent, she has a higher reference point. The utility of strategic voting corresponds to the negative side of the graph, so it is in the loss frame and sincere voting nearly corresponds to the reference point. Due to loss aversion which is represented by steeper slope of negative side, voters whose most preferred candidate is the incumbent perceive the utility difference between strategic and sincere voting more than voters whose least preferred candidate is the incumbent. So, the following second hypothesis is a specific application of hypothesis 1:

Hypothesis 2: Voters, whose most preferred candidate is the incumbent, are more prone to vote strategically than voters whose least preferred candidate is the incumbent.

It is also possible to derive the hypothesis about the effect of the expected vote share margin between the voter's second most preferred candidate and the voter's most preferred candidate on the probability of the voter casting a strategic vote:

Hypothesis 3: As the vote share gap between the voter's second most preferred candidate/party and the voter's most preferred candidate/party increases, the probability of the voter to vote strategically increases as well.

The last hypothesis is about whether an increase in the expected vote shares difference alters the effect of the satisfaction level of the voter or not:

Hypothesis 4: When the vote share gap between the voter's second most preferred candidate and the voter's most preferred candidate decreases, the effect of the satisfaction level on the strategic voting decision increases.

In the next chapter, hypothesis 2, 3 and 4 will be tested with an experimental study. Then, these hypotheses will be tested with data from the British Electoral Studies data set for 2010 and 2015 elections.

Chapter 2:

The Experiment

This chapter is reserved for the analysis of hypotheses with an experimental study. There will be two independent analyses of experimental data to test various hypotheses. Firstly, there will be regression analyses to test individual level hypotheses. Then, Kruskal-Wallis H tests will be conducted to test modified aggregate level hypotheses. Before these statistical tests, I will explain why the experiment is an appropriate method for this study. After that, there will be explanation of the experiment, the experimental settings and procedures.

2.1 Why Experiment?

There are advantages and disadvantages to using experiment as a method for this study. First of all, as discussed previously people may vote strategically when the necessary condition occurs in the electoral context. The second preferred candidate should have higher chance of winning the election than the most preferred candidate and there should be at least one more candidate that has a higher expected vote share than the most preferred candidate. It is sometimes hard to find such instances representatively in actual data. Nevertheless, experiments give leverage to construct the necessary condition by experimental settings. Also, in actual settings, it is hard to find enough cases including conditions that increase the voter's probability of voting strategically such as electoral rule, distance of parties or candidates or as the main research interest of this study; satisfaction level from status-quo.. Experiments enable us to construct and manipulate these conditions as well. Also, randomization as one of the main virtues of the experimental design, gives leverage for the causal inference. Of course, there are also disadvantages using an experimental method to study on strategic voting. The most important problem is that experiment cannot sufficiently reflect the

actual party preferences of the subjects. In this study, there is a hypothetical election and presidential candidates. Furthermore, preferences for these candidates are given to the subject. This may not be sufficient to measure the effect of the preferences on strategic voting since; people may not feel the same level of affiliation to hypothetical candidates and actual candidates. Actually, in the pre-test questionnaire, there is a question which measures the subject's strength of actual party affiliation. It might be the case that people transpose strength of their party affiliation to the hypothetical candidates.

2.2 Why Presidential Elections?

The presidential election context is chosen as it offers one of the most appropriate settings for the strategic voting. Presidential elections are zero-sum games in which there is only one winner. In presidential elections, district magnitude is one while the only district is the whole country. There is only one seat to allocate and candidates who finish the election in position other than the first place win nothing from the election. It means that a vote for a candidate who has little chance of winning the election implies wasting the vote as is indicated by the Law of Duverger. So, electorates who intend to vote for candidates who have little chance of winning election have little chance to be represented. This increases the voter's likelihood of voting strategically. When voters perceive that the candidate who they prefer the most, cannot win the election, since voting for this candidate gives them nothing with regard to their policy position and cannot change the absolute winner, they may prefer the candidate who has a chance to win the election and the more preferable among other candidates who has chance of winning the election.

2.3 Experimental Settings:

In the experiment, subjects are asked how they might vote in a hypothetical presidential election. There are three candidates who are participating in the hypothetical elections. For subjects, the preference rankings about the three presidential candidates are given in the text. Candidate Fatih Evren is the most preferred candidate where candidate Ali Yılmaz is the second most preferred one. The other candidate İrfan Gürkaynak is the least preferred one among them. There are also results of three different polls in which the predicted vote shares of the candidates before the election

are shown. The vote share differences of candidates are approximately same in the three polls.

The experimental setting tries to ensure the necessary condition for strategic voting. The necessary conditions for strategic voting are set in the experiment as follows: Fatih Evren as the most preferred candidate is displayed in third place where Ali Yılmaz as the second preferred candidate is shown in second place by three different polls which are given in the experiment. Also, polls show that the least preferred candidate İrfan Gürkaynak is expected to finish the election in first place. Thus, Fatih Evren as a candidate who enjoys sincere votes is the one who has the least chance of winning the election. On the other hand, Ali Yılmaz as the second most preferred candidate enjoys strategic voting since; Fatih Evren has little chance of winning the presidential election.

The expected vote share difference between candidates in first and second place is fixed approximately at 1%. It increases subjects' perception of being pivotal in the elections if they vote strategically. It is possible to add this difference as a variable rather than a constant into the experiment. However, turning it to a variable increases the number of groups which means that there should be more subjects to make causal inference. Because of the limitations of finding more subjects, the difference between the first and the second candidate is given as a constant.

After reading the given information, subjects are asked to choose one of the options that indicate their possible voting behavior in hypothetical elections. There are seven options for the subjects to show their voting inclinations. They can vote for one of the three candidates, they can abstain or they can select the option that they are undecided. Voting for Fatih Evren and Ali Yılmaz represented with four options to detect the variance in the subject's choice: I certainly vote for Fatih Evren, I probably vote for Fatih Evren, I certainly vote for Ali Yılmaz or I probably vote for Ali Yılmaz.

Four groups are constructed to detect the effect of two independent variables on the dependent variable. The first independent variable is the satisfaction level. In group 1 and group 3, Fatih Evren, the most preferred candidate, is the incumbent president before the elections while in group 2 and group 4, İrfan Gürkaynak, as the least preferred candidate, is the incumbent president. As the manipulation, the incumbency is highlighted in four different sections of the text. First, when candidates are introduced,

the current president is designated explicitly. Second, when candidates' policy proximities are defined, again the current president is highlighted. Thirdly, when three different polls are introduced, the current president is written with adjective of "President". Finally, options to vote for the current president have same adjective as well. By this way, the experiment tries to reveal changing in subject's inclination to vote for her second most preferred candidate with regard to whether incumbent is her most preferred candidate or her least preferred candidate.

Voting for Ali Yılmaz, as the second most preferred candidate, implies voting strategically, so that experiment compares tendency of subjects to vote for Ali Yılmaz who encounter Fatih Evren as president and participants who encounter Fatih Evren as the opposition candidate.

The second independent variable is the difference of shown vote shares between Ali Yılmaz and Fatih Evren. This variable tries to reveal the effect of the expected vote share the difference between the most preferred candidate and the second most preferred candidate on voter's probability of voting strategically. In the first and second groups, difference between the vote shares of Ali Yılmaz and Fatih Evren is approximately 7,5% ,on the average for three polls, while in the third and the fourth groups, it is approximately 22,5% on the average for three polls. By this way, the experiment may be able to show whether voter's sincere candidate's distance from contestation affects her probability of voting strategically or not.

The table below shows how independent variables changes in different groups. In the first group, the most preferred candidate is the incumbent and the gap between him and the second most preferred candidate is low. In the second group, difference between the most preferred candidate and the second most preferred candidate is low again, but in this group the most preferred candidate is not the incumbent. In the third and fourth groups, the gap between the two candidates is high, but in the third group, the most preferred candidate is the incumbent while in the fourth group the least preferred candidate is the incumbent.

Table 2.3.1: Groups

Incumbency of the most preferred candidate

		Incumbent	Not Incumbent
The gap between the most and the second-most preferred candidate	Low	Group 1	Group 2
	High	Group 3	Group 4

2.4 Dependent Variable:

Before passing on to the statistical analysis, two different coding schemes of the dependent variable which were used for both statistical analyses will be briefly discussed. As the first coding scheme, voter's likelihood of voting strategically as the dependent variable is coded with regard to responses of the subjects as follows: Firstly, if the subjects choose the option "I may abstain" or if they choose "I may vote for İrfan Gürkaynak", they are excluded from the analysis. If the subjects' response to experimental question is other than "I may abstain" or "I may vote for İrfan Gürkaynak", then: If subjects choose "I would certainly vote for Fatih Evren", it is coded as "1", if they choose "I would probably vote for Fatih Evren", it is coded as "2". If the subjects' response is "I would be undecided", it is coded as "3". "I would probably vote for Ali Yılmaz" is coded as "4" while "I would certainly vote for Ali Yılmaz" is coded as "5". So, this variable is designed to increase when the subjects' inclination to vote strategically increase.

The second coding scheme is to construct a binary dependent variable. It is coded for subjects who choose "I would certainly vote for Fatih Evren" and "I would probably vote for Fatih Evren" as "0" and for subjects who choose "I would probably vote for Ali Yılmaz" as "1".

2.5 The pre-test survey:

Before the experiment, subjects answered a pre-test questionnaire. It contains demographic questions such as age, gender, education level etc…. Also, there are three questions to measure their actual voting choices. One question asks whether they voted in the previous elections or not while the other one asks whether they plan to vote in next elections or not. The third question attempts to measure the strength of party affiliation on a four point Likert-scale. Lastly, in the pre-test survey, there is a question to measure the risk attitude of the subject. They are asked to choose between two discount options: they can choose a definite 10% discount on the ticket price or they can choose to flip a coin; if it is head, they will get 20% discount on the ticket price, but if it is tail, they get no discount. As it can be observed both options has some expected utility, but if the voter chooses second option, it implies that she is a risk-seeker, while if she choose the first option she is risk-averse. It is important to note that subjects are in gain frame according to the prospect theory. It implies that they are expected to be more risk averse. So, even under this condition, if a voter chooses the risky option, it means that she has a strong tendency for the risk-seeking behavior.

2.6 The Pilot:

Before the experiment, it is important to test whether intended manipulation in the experiment will be successful or not. To learn this, there should be a pilot study in which the manipulation check is done. Manipulation in this experiment is changing the incumbency in between the most preferred candidate and the least preferred candidate across different groups. In the first and the third groups, it is given that the most preferred candidate is the incumbent while in the second and the fourth groups, it is given that the least preferred candidate is the incumbent. To ensure the construct validity of the experiment, it is important to be sure that voters pay attention to who the incumbent is. The information pertaining to the the incumbency position of a candidate constitutes the necessary condition of this study. If they are not aware of who the incumbent is, the experimental question cannot measure the effect of incumbency on strategic voting. One of the possible ways to understand this is to generate a contradiction about incumbency. As it was indicated, subjects are informed four times within the text about who the incumbent is. In the pilot study, subjects read a text which informs them that İrfan Gürkaynak is the current president, but in the part which includes options that ask them to vote for a candidate, Fatih Evren is defined as the

current president. So, there is a contradiction introduced into the text of the questionnaire. First, subjects are asked to answer the experimental question that has the contradictory information regarding the incumbency embedd into it. After collecting the experiment sheets, they are asked to write down whether they noticed any contradiction in the text on a piece of paper. This procedure was applied to 19 students at Yıldırım Beyazıt University. 14 out of 19 students noticed the contradiction in the text correctly. Actually, some of them asked me about the contradiction as they were responding to the questionnaire. Therefore, it might be possible to say that most of the subjects were aware of who the incumbent is. In fact, there might be another way, which maybe more accurate, to check the manipulation. Subjects may be asked to write down who the incumbent is after experimental sheets are collected. In that way, for all subjects, I may be sure whether they are aware of whom the incumbent is or not. However, in most of the experiments, I did not conduct them myself; therefore, I do not want to complicate the experimental procedure. Certain concerns about the implementation of experimental procedure may arise. However, it was not possible to conduct experiments for farmer subjects. Also, subjects may realize the incumbent just after it is asked even though they cannot see the text after the experiment. So, the correct answer may not necessarily show that they noticed who the president is when they answered the question. In fact the best way may be to triangulate these pilots. But still, it can be claimed that the most of the subjects noticed who the president is.

2.7 Experimental Procedure:

Experiments are conducted in eight different institutions. Four of them are universities. 140 subjects are students of Ankara, Kırıkkale, Elazığ and Bingöl Universities. The remaining 158 subjects are the farmer members of the Turkey Cattle Breeders' Association in four different cities; Ankara, İstanbul, Aydın and Mersin. Actually, experiments are conducted in Harran University, Kars, Tekirdağ and Erzincan Cattle Breeders' Associations as well. However, data from these institutions are excluded from the analysis basically for the two main reasons. First, some of the subjects who participate in the experiments from some of the Turkey Cattle Breeders' City Association are not farmers; they are the administrative staff of the associations. Second, hand-writing on experimental sheets and answers for questions undeniably resemble each other and therefore, they are excluded from the analysis.

It gives us an important leverage to use both students and farmers as subjects in the experiment. Since Sears' article on problems of using only students in social psychology experiments, causing researchers to cast doubt on causal inference with experimental data gathered only from student subjects. It is argued that this damages the external validity of the research since generalizing results for the whole population with only data from a particular group may break causal inference (Sears, 1986). To deal with this problem, scholars who use only students as subjects in experiment widely refer *conservative bias* to increase the external validity of their research. It suggests that particular attributes of students may make it harder to find relationship between the dependent and independent variables. For example, students are less susceptible to group norms than the population (Sears, 1986). So, an experiment which tries to identify a relationship between a group norm and type of behavior with student subjects benefits from the conservative bias. If the researcher can identify a relationship between a group norm and a behavior with student subjects, she can generalize her result since; if it is valid for a group that it is less susceptible to group norms, it is also valid for the population whose average of susceptibility is higher than students. In recent years, some scholars stand against the criticism regarding using only student subjects in experiments. For example, Druckman and Kam suggest that if there is not a factor or feature that significantly differentiates students from the population with regard to the research interest, results from experiments with student subjects can be generalized. According to them, the best way to handle this problem is to compare the student group with a non-student group (Druckman, 2011). In this study, the comparison of the results for farmers and students may reveal different effects of treatments on different groups. Also, control variables may enable us to identify which attribute of a particular group might alter the effects of independent variables. In this way, it may increase the external validity of the experiment and makes it possible to generalize the result from the students to the population.

Students participated to the experiment in classroom settings. Experiments were distributed in the last 15 minutes of a class hour. They were not offered any material benefits for participating in the experiment. They were randomly assigned to particular groups. On the other hand, farmers participated in the experiment during weekly visit by staff of the city association in villages. They were also not offered any material benefits.

Subjects signed informant consent first, and then answered the pre-test questions. After these, they answered the experimental question.

In fact, experiments for students are more like a laboratory experiment while experiments for farmers are more like a survey experiment. In laboratory experiments, researchers can control and create the settings of the experiment. In survey experiments, researchers intervene with the survey questions and the survey can be conducted via phone, online or in-person. These are ideal types; experiments might combine features of different types (Druckman, 2011). Experiments in this study combine features of different type.

2.8 Descriptive Statistics:

To present the row data, there are two tables which show the number of options that are chosen by the subjects in each groups and the mean value of the continuous dependent variable for each group. Mean values are calculated by excluding subjects that choose the options "I may abstain" or "I may vote for İrfan Gürkaynak". In both analyses, these subjects were excluded. So, 32 data from the experiment are missing. In the tables, "experiment" column refers to four experimental groups.

Table 2.8.1: Descriptive Statistics 1

Experiment	Vote							Total
	-2	-1	1	2	3	4	5	Total
1	5	1	16	14	16	19	6	77
2	8	5	27	23	5	10	3	81
3	5	0	13	17	12	15	8	70
4	4	4	18	16	16	11	4	73
Total	22	10	74	70	49	55	21	301

Table 2.8.2: Descriptive Statistics 2

experiment	mean
1	2.428571
2	1.506173
3	2.471429
4	2.054795
Total	2.099668

2.9 Regression Analysis:

For the individual level analysis, OLS regressions were conducted. Three hypotheses which are derived from the model will be tested:

Hypothesis 1: Voters, whose most preferred candidate is the incumbent, are more prone to vote strategically than voters whose least preferred candidate is the incumbent.

Hypothesis 2: As the vote share gap between the most preferred candidate and the second most preferred candidate increases, voter's probability of voting strategically increases as well.

Hypothesis 3: When the vote share gap between the second most preferred and the most preferred candidate decreases, the effect of satisfaction level on strategic voting decisions increases.

To do the regression analysis, subjects whose most preferred candidate is the incumbent president are coded as "1" while subjects whose least preferred candidate is the incumbent are coded as "0". So, variable "incumbent" is one if the subject is assigned to the first or the third groups and it is zero when s/he is assigned to one of the second or the fourth groups. Another variable "margin" is created to analyze the effect of the margin between the second most preferred and the most preferred candidates. If the assigned margin is high (22.5), it is coded as one and if it is low (7.5), it is coded as

zero. The former corresponds to the subjects in the third and the fourth groups while the latter corresponds to subjects in the first and the second groups.

Also, variable *profession* is coded as one for farmers and it is coded as zero for students. *Party affiliation* measures the strength of the subjects' real life affiliation to their most preferred party. It is coded as one, for the option that indicates the lowest affiliation, and it is coded as four for the option that indicates the highest affiliation. Variable *risk* is coded as zero for the risk averse subjects while it is coded as one for the risk seekers.

The regression tables below show statistical analyses. The first table shows the regression analysis for both students and farmers. The analysis reflects that when the subject's most preferred candidate is the incumbent, the voter's likelihood to cast a strategic vote increases with $p < 0.01$ significance level. This implies that voters, whose most preferred candidate is the incumbent, are more inclined to vote strategically. Also, variable *profession* negatively correlates with the likelihood of strategic voting. It means that students have a higher inclination to vote strategically than farmers. It has a significance level of $p < 0.05$. The last variable *margin* shows whether subjects encounter high difference between the most preferred and the second most preferred candidate or not does not significantly affect the dependent variable.

The second regression table shows the separate analyses for students and farmers. As it can be observed, the incumbency of the most preferred candidate increases the likelihood of a casting strategic vote for both groups. But, it has a higher significance level for students ($p < 0.01$) than farmers ($p < 0.05$). Moreover, the results for expected vote share margin between the most preferred candidate and the second most preferred candidate are significant for farmers at $p < 0.1$ significance level, but are not significant for the student participants. Results also show that control variables; level of real life party affiliation and risk attitude; do not significantly affect the probability of strategic voting. For farmers, there are two more control variables which are education and age. Only education significantly affects the likelihood of strategic voting. The education level of farmers increases their tendency to vote strategically.

Table 2.9.1: Regression Results: Overall

	M1 b/t	M2 b/t
incumbent	0.510***	0.495***
	(3.29)	(3.21)
margin	0.206	0.195
	(1.33)	(1.26)
Prof		-0.326**
		(-2.18)
Constant	2.192***	2.369***
	(16.38)	(15.20)
R-squared	0.0449	0.0616
Number of cases	269	269

* p<0.10, ** p<0.05, *** p<0.01

Table 2.9.2: Regression Results by Profession

	Student b/t	Farmer b/t
incumbent	0.584***	0.451**
	(2.65)	(1.99)
margin	-0.0306	0.381*
	(-0.14)	(1.70)
PartyA	-0.0666	-0.121
	(-0.57)	(-1.01)
Risk	-0.201	-0.00107
	(-0.77)	(-0.00)
Age		0.00419
		(0.38)
Education		0.226**
		(2.29)
Constant	2.612***	1.437**
	(8.90)	(2.10)
R-squared	0.0620	0.0991
Number of cases	136	130

* p<0.10, ** p<0.05, *** p<0.01

Also, it is possible to analyze similarly with the binary dependent variable which is coded for subjects who choose "I would certainly vote for Fatih Evren" and "I would probably vote for Fatih Evren" as 0 and for subjects who choose "I would probably vote for Ali Yılmaz" as 1 respectively.

Below you can find the results of the logistic regression. As it can be observed results for effect of incumbency are the same except for the farmers. But, it is still nearly significant at $p < 0.10$ level with p value= 0.101

Table 2.9.3: Logistic Regression 1

	M1 b/t	M2 b/t	M3 b/t
vote1			
incumbent	0.875***	0.867***	0.866***
	(3.00)	(2.97)	(2.93)
margin		0.185	0.160
		(0.64)	(0.55)
Prof			-0.597**
			(-2.05)
Constant	-1.099***	-1.182***	-0.880***
	(-5.03)	(-4.62)	(-3.02)
R-squared			
Number of cases	220	220	220

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table 2.9.4: Logistic Regression 2

	Student b/t	Farmer b/t
vote1		
incumbent	0.975**	0.769
	(2.34)	(1.64)
margin	-0.164	0.536
	(-0.41)	(1.17)
Risk	-0.528	-0.103
	(-1.08)	(-0.15)
PartyA	-0.142	-0.0917
	(-0.63)	(-0.39)
Age		0.00951
		(0.40)
Education		0.550**
		(2.56)
Constant	-0.389	-3.349**
	(-0.72)	(-2.12)
R-squared		
Number of cases	109	110

* p<0.10, ** p<0.05, *** p<0.01

The last question of this section is on how the effect of the incumbency on strategic voting changes for subjects that encounter low or high margins. It points out the third hypothesis of this study in which the effect of difference between vote share of the second most preferred candidate and the most preferred candidate alters the effect of incumbency on strategic voting. Below, you can find the results of the OLS regression. Results suggest that when the margin is low, whether the incumbent candidate is the most preferred one or the least preferred one alters the voter's likelihood of voting strategically significantly. However, when this margin is high, this relationship disappears. Thus, this findings support the third hypothesis of this study. Furthermore, profession of the subject does not affect the dependent variable significantly.

Table 2.9.5: High vs. Low Margin

	Low1 b/t	Low2 b/t	High1 b/t	High2 b/t
incumbent	0.686***	0.738***	0.323	0.237
	(3.22)	(3.45)	(1.43)	(1.02)
PartyA		-0.0787		-0.118
		(-0.70)		(-0.98)
Risk		0.126		-0.455
		(0.45)		(-1.53)
Age		-0.00186		0.00134
		(-0.15)		(0.08)
Education		0.162		0.342**
		(1.33)		(2.14)
Prof		-0.283		0.293
		(-0.89)		(0.80)
Constant	2.103***	1.887**	2.492***	1.514
	(13.81)	(2.52)	(15.61)	(1.62)
R-squared	0.0703	0.141	0.0157	0.0796
Number of cases	139	139	130	129

* p<0.10, ** p<0.05, *** p<0.01

2.10 Comparison of the groups:

There is another statistical way to detect the relationship between the dependent and independent variables. Comparison of the mean and the median of the dependent variable for experimental groups may reveal the treatment effect of experiment. However, causal inference made from the comparison of groups cannot be applied to individual voters. Because, the means and the median are aggregate level data, so making inferences about individuals causes the ecological fallacy problem. Nevertheless, these comparisons enable us to analyze how vote shares of candidates may change with regard to their status as the incumbent or the opposition. So in this part, causal inferences will be done taking into account the vote shares of different candidates. This gives leverage when coming to conclusions about not only the effect of

incumbency on individual voters as the previous part implies, but also the effect of incumbency on the number of strategic votes that candidates lose.

Conventionally, ANOVA is the common method to compare groups. ANOVA has an assumption of normal distribution which means that the dependent variable in each group approximately has a normal distribution. But, the dependent variable, likelihood of strategic voting, for experimental groups in this study is not normally distributed. Therefore, to make a more robust test, I use Kruskal-Wallis tests which do not require normally distributed dependent variable. The Kruskal-Wallis test ranks values of the dependent variables and compares their median rather than their means. In this way, it deals with data which are not normally distributed.

There will be several comparisons between different groups to understand how the incumbency of a candidate may affect her probability to loss votes because of strategic voting and how the expected vote share margin between the most preferred and the second most preferred candidates affects the most preferred candidate's probability of losing votes due to strategic voting.

To answer the question of how the incumbency of a candidate may affect the probability to loss votes because of strategic voting, there will be two comparisons; between group 1 and group 2 and group 3 and group 4. In this way, it is possible to estimate the aggregate responses of the voters whose most preferred candidate is assigned as the incumbent and voters whose least preferred candidate is assigned as the opposition by fixing the gap between the most and the second most preferred candidates.

Testing how the expected vote share margin between the most preferred and the second most preferred candidates affects the most preferred candidate's probability of losing votes due to strategic voting requires fixing the effect of incumbency and to observe variance in the responses of the subjects who encounter different levels of gap. Throughout to procedure, there will be comparisons between group 1 and group 3 and group 2 and group 4.

Finally, comparisons of the median difference between group 1 and group 2, and group 3 and group 4 may reveal whether the expected vote share difference between the most preferred candidate and the second most preferred candidate alters the effect of the

most preferred candidate's incumbency on the probability that he suffers from losing support due to strategic voting.

So, in light of the original hypotheses, there might be three modified hypotheses for the aggregate level of analysis:

Hypothesis 1: The incumbent candidate suffers from losing support because of strategic votes more than the candidate that is in opposition.

Hypothesis 2: When the vote share margin between the most preferred candidate and the second most preferred candidate increases, the probability that the most preferred candidate suffers from losing support due to strategic voting increases as well.

Hypothesis 3: When the expected vote share margin between the most preferred candidate and the second most preferred candidate increases, the effect of incumbency the of the most preferred candidate on the probability that he suffers from losing support due to strategic voting decreases.

Comparisons regarding the hypotheses are summarized in the table below.

Table 2.10.1: Comparisons

	Comparison 1	Comparison 2
Hypothesis 1	Group 1 vs. Group 2	Group 3 vs. Group 4
Hypothesis 2	Group 1 vs. Group 3	Group 2 vs. Group 4
Hypothesis 3	Group1-Group2 vs. Group3-Group4	

2.11 Results:

To test the first hypothesis, Two Kruskal Wallis H tests were conducted. The first comparison was made between the median values of group 1 and group 2. It showed that there is statistically significant difference in the probability of voting strategically between two groups (chi-squ= 9.804, p= 0.0017). So, the median of group 1 is higher than the median of group 2 and this difference is statistically significant. Second, the comparison was made between the median values of group 3 and group 4. For this comparison, there is not a statistically significant difference in the dependent variable between the two groups (chi-squ= 1.877, p= 0.1707). The median of group 3 is higher than group 4, but it is not statistically significant. Results of these tests support the first hypothesis that the incumbent candidate suffers more from losing support due to strategic voting. Even though the median difference between group 3 and group 4 is not statistically significant, median of group 3 still higher than the median of group 4. It might be argued that when the expected vote share difference between the most preferred candidate and the second most preferred candidate is sufficiently high, the importance of the satisfaction level decreases for voters and they are more prone to vote strategically.

To test the second hypothesis, two Kruskal Wallis H tests were conducted as well. The first comparison was made between the median values of group 1 and group 3. It showed that there is no statistically significant difference in dependent variable between two groups (chi-squ= 0.008, p= 0.9288). A second comparison was made between the median values of group 2 and group 4. It showed that there is almost a statistically significant difference in the probability of strategic voting between two groups at p<0.05 level (chi-squ= 3,760, p= 0.0525). So, the median of group 4 is higher than median of group 2 and this difference is statistically significant. Results shows that high expected vote share margin between the most preferred candidate and the second most preferred candidate increases the most preferred candidate's probability of losing support because of strategic votes. But, when the gap is smaller this treatment effect is not be observed.

For the last hypothesis, there might be comparisons of median differences with the results of four Kruskal Wallis H tests. The median difference between group 1 and group 2 is higher than the median difference between group 3 and group 4. It implies that the incumbency of the most preferred candidate has a stronger effect on the

probability that he suffers from losing support due to strategic votes where the vote share gap between the most preferred candidate and the second most preferred candidate is higher.

2.12 Discussion:

Both OLS regressions for the individual level and Kruskal Wallis H tests for the aggregate level support the incumbency effect on likelihood of strategic voting. Also, results for the individual level and the aggregate level analyses show that an increase in expected vote share gap between the most preferred candidate and second most preferred candidate decreases the incumbency effect. Furthermore, results for the second hypothesis at the aggregate level analysis fit with the expectations as well. However, the individual level analysis for the second hypothesis does not fit with expectations. Actually, this might be a natural result of the experimental settings. Since the margin has two values as zero and one, the real independent effect of the margin on strategic voting might not be revealed with this analysis. In a real life setting, the margin is a continuous variable which obtains numbers of values. Making it a binary variable as low and high may prevent this study from revealing the real effect of the gap between the most preferred candidate and the second most preferred candidate on the strategic voting behavior of subjects. In the next chapter, an analysis of strategic voting in the 2010 and the 2015 UK elections will reveal the strong effect of the gap between the most preferred candidate and the second most preferred candidate on voter's likelihood of voting strategically.

On the other hand, result suggests that at both the individual and the aggregate levels, the high margin between the second most preferred candidate and the most preferred candidate decreases the effect of incumbency on strategic voting. So, if this margin is very high, the incumbency effect on strategic voting disappears.

Another important point to discuss is the comparison of students and farmers in the individual level analysis. As the results of our analyses suggest students are more prone to vote strategically than farmers under the treatment effect. The incumbency of the most preferred candidate increases the voter's probability of voting strategically for both groups, but it has a higher significance level for students. Also, the expected vote share margin between the most preferred candidate and the second most preferred candidate significantly affects the voter's probability of voting strategically for farmers,

but it is not statistically significant for students. So, it might be said that farmers are more sensitive to this margin than students.

The difference between students and farmers in terms of their probability of voting strategically might be result of the levels of their education. As results suggest farmers who have higher levels of education are more prone to vote strategically than farmers who have lower levels of education. Since one of the characteristic differences between farmers and students is their level of education, this might be one of the reasons why such a difference in terms of their probability of voting strategically emerges.

Lastly, it is important to note that subjects do not transpose their actual party affiliations when they answer experimental question. As it can be observed in next chapter, the strength of party affiliation for the most preferred party decreases the likelihood of strategic voting and the strength of preference towards the second most preferred candidate increases the likelihood of strategic voting. This might damage experimental realism. But still, this problem can be ignored owing to the leverage of experimental study to control other parameters that alter strategic voting. In next chapter, there will be analysis of how party affiliations for the most preferred party and the second most preferred party affect the effect of incumbency on voter's probability of voting strategically.

Chapter 3:

Analysis of UK General Elections:

In the previous chapter, results of experiments support the hypothesis that voters whose most preferred candidate is the incumbent are more prone to vote strategically than voters whose most preferred candidate is in the opposition. However, experiment as a method has two shortcomings to analyze strategic voting. Since preferences are given in experiment, it is not possible to apply satisfaction as a level because, it was reduced whether the most preferred party is incumbent or not. Also, it was not possible to control the effect of variance in level of preferences on strategic voting. Analysis in real settings deals with these shortcomings of experimental study while experimental study offers more controlled settings which are not possibly ensured by data analysis. Also, randomization is another leverage of the experiment for causal inference

In this chapter, there will be a data analysis of Wave 4 of The British Election Study Internet Panel for detecting strategic voting in the 2010 and the 2015 UK Parliamentary elections. It was the latest data set available when I started to study. The UK is chosen since; its electoral rule is Single Member District plurality in which the Law of Duverger would work. It is because; parties who cannot finish first place in constituencies are absolute losers. Only the winner is elected. As it was discussed, it increases incentives to vote strategically since; a vote for the party who does not have a chance of winning the election in a constituency is a wasted vote. Therefore, voters whose most preferred party does not have the chance of winning the election in their constituency may cast a strategic vote for the party which has the chance of winning the election and prefer this party over other contenders who have a chance of winning the election. Also, it is categorized as a "two and a half system" in which there are three effective parties, even if the 2015 parliamentary elections, we witnessed the rise of the

Scottish National Party and the UK Independence Party. Furthermore, it has a system where the incumbent party is likely to end up as the 3rd party at the district level. Thus, the United Kingdom is one of the most studied countries in the strategic voting literature because of these features.

Analyzing the 2010 and the 2015 elections enable us to test the hypotheses of this study which are derived from the model in the first chapter. The first hypothesis is the main hypothesis, namely that when the satisfaction level of the voter from the status-quo increases, voter's likelihood of voting strategically increases as well. The second hypothesis is about the voter's expected vote share difference between the second most preferred party and the most preferred party. When, this difference is increasing, the voter's likelihood of voting strategically increases as well. There will be various analyses with different independent variables to test these hypotheses. Also, two different operationalizations of the dependent variable, one as a binary and the other as a continous scale, are used in the statistical analyses below.

In this chapter, possible strategic voters will be identified with the method which is widely used in the strategic voting literature. Then, the operationalization of the dependent and independent variables will be presented. After that, the results of the regression analyses that test the hypotheses of this study will be presented. The chapter will end with a discussion of the results and their implications for further research.

3.1 Strategic Voters:

Analyzing the strategic voting as a highly context dependent behavior, is not a simple process. Strategic voting is a feasible option just for a subset of voters. To define these voters, we need to implement the necessary condition of the strategic voting .Possible strategic voter is the one whose most preferred party has less chance of winning the election than her second most preferred party and there should be at least one more party that has a higher expected vote share than her most preferred party. Therefore, to define possible strategic voters we need to define:

1- Expected or actual rankings of parties in every constituency according to vote shares,

2- The most preferred party of the voter.

3- The second most preferred party of the voter.

Table 3.1.1 represents strategic voters with regards to their type of constituencies, their most preferred and their second most preferred party which is subjected to strategic voting. For votes that were cast in the 2010 election, parties' ranks are determined by elections results in constituencies. For the 2015 elections, these rankings are constructed regarding voter's expectations on ranking of parties in their constituencies. Below, you can find the table that posits possible strategic voters and parties that they may vote strategically for.

Second, the most and the second most preferred parties of the voter should be determined. In this analysis, only the Conservative Party, the Labour Party and the Liberal Democratic Party and their voters are included in the analysis. The most preferred party is the one which the voter feels closest to her. The second most preferred party is defined as the party that the voter feels closer to than the other party in the analysis. For each individual participant, her preference ranking for parties is constructed. Regarding their feeling thermometer, there are six possible preference ranks. This is shown in Table 3.1.2.

As the binary dependent variable *strategic prospect* for the 2015 elections and *strategic past* for the 2010 elections are defined. A vote for the most preferred party is coded as 0 and strategic vote is coded as 1. For the 2010 election, I use the actual votes of participants in 2010 elections to code the variable. For the 2015 election, it is coded with respect to the answer to which party they plan to vote for. It is important to remember that pre-election surveys could not predict the result of elections adequately for 2015 in UK. Table 3.1.3 converges voter types and constituency types to determine who the possible strategic voters are with regard to their constituencies and types of their votes. For instance, in constituency type A, the Labour Party voters are possible strategic voters. If the second most preferred party of the voter is Conservative Party (type 3), her vote for the Conservative Party is defined as a strategic vote but if the second most preferred party of voter is the Liberal Democrat Party, then her vote for the Liberal Democrats is defined as strategic vote. If she votes for Labour Party, it is defined as a sincere vote.

Table 3.1.1: Constituency

	Relative Election Rank of Parties in Constituencies	Strategic Voters	Vote for
A	1-Conservatives 2-Liberal Democrats 3-Labour	Labour	Liberal Democrats/Conservatives
B	1-Liberal Democrats 2-Conservatives 3-Labour		
C	1-Labour 2-Liberal Democrats 3-Conservatives	Conservatives	Liberal Democrats/Labour
D	1-Liberal Democrats 2- Labour 3-Conservatives		
E	1-Labour 2-Conservatives 3-Liberal Democrats	Liberal Democrats	Conservatives/Labour
F	1-Conservatives 2-Labour 3-Liberal Democrats		Labour/Conservatives

Table 3.1.2: Preference Order

Type	The most preferred party	Preference Ranking	The second most preferred party
1	Conservative	CON>LAB>LD	Labour
2	Conservative	CON>LD>LAB	Liberal Democrats
3	Labour	LAB>CON>LD	Conservatives
4	Labour	LAB>LD>CON	Liberal Democrats
5	Liberal Democrats	LD>CON>LAB	Conservatives
6	Liberal Democrats	LD>LAB>CON	Labour

Table 3.1.3: Strategic Voters

Type of Constituency	Type of Voter	Most Preferred Party	Strategic Vote
A	3	Labour	Conservative
A	4	Labour	Liberal Democrats
B	3	Labour	Conservative
B	4	Labour	Liberal Democrats
C	1	Conservative	Labour
C	2	Conservative	Liberal Democrats
D	1	Conservative	Labour
D	2	Conservative	Liberal Democrats
E	5	Liberal Democrats	Conservative
E	6	Liberal Democrats	Labour
F	5	Liberal Democrats	Conservative
F	6	Liberal Democrats	Labour

3.2 Independent Variables:

The focus independent variable for this analysis is the satisfaction level of the voter from the status-quo. Variable *satisfaction* is created to measure it as follows.

Voter's preference average towards incumbent parties - voter's preference towards her most preferred party.

So, the equation that determines the satisfaction level of the voter before the 2010 election is:

Voter's preferences towards Labour Party – Voter's preferences towards her most preferred party

The equation for satisfaction level of voter before the 2015 election is:

$$\frac{Voter's\ preference\ towards\ Conservative\ Party + Voter's\ preference\ towards\ Liberal\ Democrat\ Party}{2} -$$

$$Voter's\ preference\ towards\ her\ most\ preferred\ party$$

The second independent variable is the *strategic margin* which represents the vote share difference between the most preferred and the second most preferred parties in constituencies in the 2010 election. It is calculated as:

Vote share of the most preferred party in voter's constituency in 2010 election - Vote share of the second most preferred party in voter's constituency in 2010 election

For the 2015 elections, it represents the voter's expectation of the vote share difference between the most preferred and the second most preferred parties in constituencies. So it is calculated as:

Expected vote share of the most preferred party in voter's constituency in 2015 election - Expected vote share of the second most preferred party in voter's constituency in 2015 election

Also, I created three more independent variables to measure the utilities of the voters from the elections with regard to the party that she votes for. The first one is *sin* for the 2015 election and *usincereP* for the 2010 election which are equal to the multiplication of the expected vote share of the most preferred party and her preference towards it. This is the utility of the voter when she votes for her most preferred party. The second one is *str* for the 2015 elections and *ustrategicP* for the 2010 election which are equal to the multiplication of the expected vote share of the second most preferred party and her preference towards it. The last one is *least* for the 2015 elections and *uleastP* for the 2010 election which are equal to the multiplication of the expected vote share of the least preferred party and her preference towards it.

3.3 Data Analysis:

3.3.1 2010 Election:

First, the results of the analysis for the 2010 UK General Elections will be presented. The problem here is that the utility variables are constructed with the data from 2015, so there are two assumptions: Preferences of the voters are the same in both the 2010 and the 2015 elections and also, the voters' expectations about the vote shares have been quite similar with the election results. Therefore, it is not a robust analysis; however, it might give an insight about the relationship between focus independent variables and the dependent variable.

The table below represents the regression results. The satisfaction level of the voter from the status-quo increases her likelihood of voting strategically. It is statistically significant for each step. Also, when the utilities that gained from voting for the most preferred party and the least preferred party increase; voter's probability of voting strategically decreases. On the other hand, when the utility from voting for the second most preferred party increases, voter's probability of voting strategically increases as well. So, results fail to falsify the hypothesis that when voter's satisfaction level increases, her likelihood of voting strategically increases as well.

Table 3.3.1.1: Regression 1

	M1 b/t	M2 b/t
strategicpast		
satisfaction2010	0.270***	0.345***
	(6.81)	(7.44)
Party identification		-0.651***
		(-3.17)
usincereP		-0.00484***
		(-2.77)
ustrategicP		0.00446***
		(3.06)
uleastP		-0.00295**
		(-1.99)
Constant	0.0618	1.546***
	(0.52)	(3.07)
R-squared		
Number of cases	446	446

* p<0.10, ** p<0.05, *** p<0.01

3.3.2 2015 Elections:

To conduct an analysis more discretely, a modification of the dependent variable for the 2015 election is made. To operationalize the dependent variable as the likelihood of strategic voting, I convert the binary dependent variable to a continuous variable. To do that, I use the data from the question about certainty of vote intention. The data set contains data that show voters' certainty about their vote intention in the 2015 election. Firstly, I coded the vote for the most preferred party as "-1" and vote for the second most preferred party as "1". Then, I multiply it with the certainty level of the vote with regard to the answer of participants to the question about certainty. Options vary

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between 1 and 7 and so, between "I am completely certain" to "I am completely uncertain". Therefore, the dependent variable can take the values between -7 and 7 except for zero. 7 represents that the participant is completely certain about voting for her second most preferred party and -7 represents that she is completely certain about voting for her most preferred party. So, when the frequency of the dependent variable increases, the likelihood of strategic voting increases as well.

The table below represents the OLS regression results for the continuous dependent variable. The satisfaction level of the voter from the status-quo is statistically significant positive effect on her likelihood of voting strategically into the model when the effect of party identification is controlled. So, regression results offer some evidence for the argument that when the satisfactions level of the voter from the status-quo increases, she is more prone to vote strategically. All of the three utility variables have statistically significant effects on voter's likelihood of voting strategically. When the utility of voting for the most preferred party and voting for the least preferred party increases, voter's likelihood of voting strategically decreases. Also, as it is expected, when the utility of voting for the second most preferred party increases, voter's likelihood of casting a strategic vote increases as well.

Table 3.3.2.1: Regression 2

	M1 b/t	M2 b/t	M3 b/t
satisfaction2015	0.342***	0.161	0.232**
	(3.48)	(1.40)	(1.99)
sin		-0.00659***	-0.00671***
		(-3.96)	(-4.08)
str		0.0110***	0.0102***
		(7.38)	(6.76)
least		-0.00288	-0.00432**
		(-1.39)	(-2.06)
Party identification			0.880***
			(3.01)
Constant	-3.310***	-5.353***	-6.439***
	(-8.42)	(-7.68)	(-8.28)
R-squared	0.0316	0.171	0.192
Number of cases	373	348	348

* p<0.10, ** p<0.05, *** p<0.01

Results for the same analysis with the binary dependent variable are presented below. For the satisfaction level of the voter, results are again statistically significant in the model at p<0.10 when party identification is controlled for. However, any significant effect of the utility of voting for the least preferred party disappears in this analysis.

Table 3.3.2.2: Regression 3

	M1 b/t	M2 b/t	M3 b/t
strategicprospect			
satisfaction2015	0.196**	0.141	0.167*
	(2.55)	(1.45)	(1.67)
sin		-0.00347***	-0.00370***
		(-2.94)	(-3.00)
str		0.00641***	0.00608***
		(5.80)	(5.42)
least		-0.00181	-0.00262
		(-1.21)	(-1.64)
Party identification			0.463**
			(2.24)
Constant	-1.127***	-2.462***	-3.101***
	(-4.44)	(-4.68)	(-4.94)
R-squared			
Number of cases	374	349	349

* p<0.10, ** p<0.05, *** p<0.01

In the second group of the analysis, rather than utilities, independent control variables signify the level of preferences towards parties. Table 3.3.2.3 below represents the regression results for the continuous dependent variable. The satisfaction of the voter has a statistically significant positive effect on voter's likelihood of voting strategically again when the party identification of the voter is controlled for. Also, the difference between the expected vote shares of the second most preferred party and expected vote share of the most preferred party is statistically significant in each level of analysis. So, when this margin increases, the voter's likelihood of voting strategically increases as well. Effects of level of preferences towards parties are statistically significant as well. When the preferences towards the most preferred party and the least

preferred party increase; the voter's probability of voting strategically decreases. On the other hand, when the voter's preference towards the second most preferred party increases; her likelihood of voting strategically increases as well. Party identification is again included to control for unobserved effects of being a sincere voter of a particular party.

Table 3.3.2.3: Regression 4

	M1 b/t	M2 b/t	M3 b/t	M4 b/t
satisfaction2015	0.342***	0.331***	0.140	0.244**
	(3.48)	(3.54)	(1.18)	(2.00)
strategicmarpro		0.0488***	0.0488***	0.0476***
		(6.41)	(6.59)	(6.51)
affiliationm			-1.221***	-1.103***
			(-3.82)	(-3.48)
secondlike			0.465***	0.392***
			(3.57)	(3.00)
thirdlike			-0.302**	-0.400***
			(-2.02)	(-2.66)
Party identification				0.920***
				(3.34)
Constant	-3.310***	-5.119***	-4.961***	-6.080***
	(-8.42)	(-10.92)	(-4.96)	(-5.84)
R-squared	0.0316	0.129	0.185	0.209
Number of cases	373	371	371	371

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

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Table 3.3.2.4 represents the regression analysis for the binary dependent variable. The difference between the expected vote shares of the second most preferred party and the expected vote share of the most preferred party is again statistically significant in each level of analysis. Effect of satisfaction of the voter on voter's likelihood of voting strategically is statistically significant again if only party identification is controlled for.

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Table 3.3.2.4: Regression 5

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	M1 b/t	M2 b/t	M3 b/t	M4 b/t
strategicprospect				
satisfaction2015	0.196**	0.222***	0.143	0.192*
	(2.55)	(2.62)	(1.31)	(1.69)
strategicmarpro		0.0334***	0.0350***	0.0356***
		(5.52)	(5.42)	(5.39)
affiliationm			-0.660***	-0.624**
			(-2.64)	(-2.48)
secondlike			0.409***	0.367***
			(3.76)	(3.31)
thirdlike			-0.236**	-0.294**
			(-2.09)	(-2.47)
Party identification				0.552***
				(2.64)
Constant	-1.127***	-2.536***	-3.204***	-3.971***
	(-4.44)	(-6.39)	(-3.86)	(-4.38)

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R-squared				
Number of cases	374	372	372	372

_____

* p<0.10, ** p<0.05, *** p<0.01

3.4 Discussion:

All these regression results give some insight about the relationship between the voter's satisfaction level from the status-quo and her probability of voting strategically. For the 2015 election, there is a positive correlation between the satisfaction level and the probability of strategic voting which is statistically significant, but when utilities or preferences towards parties are controlled for, the significance level drops just below p<0.1 level. On the other hand, when the most preferred party of the voters also controlled for, the satisfaction level again becomes statistically significant. What might be the possible effect of the most preferred party of the voter on strategic voting? Actually, when one looks at the aggregate data, the Conservative party's voters have much lower levels of strategic voting than Labour and Liberal Democrats and their level of strategic voting do not change so much in between the 2010 and the 2015 elections. It seems that there are some characteristics of the conservative voters which prevent them

from voting strategically. It is not about the level of affiliation towards the most preferred party. The mean value of the party affiliation for conservative voters towards their most preferred party is 7.79 with standard deviation 1.44 where the mean value of Labour voters is 7.66 with standard deviation 1.59 and the mean value of Liberal Democrat voters is 7.51. Also, it is not about the level of affiliation towards the second most preferred party because the mean value of the affiliation towards the second most preferred party of conservative voters is 4.02 with standard deviation 1.76 where the mean value of Labour voters is 3.85 with standard deviation 1.84. Therefore, there might be an unobserved characteristic of conservative voters that may prevent them from voting strategically.

For the 2010 elections, the results for the satisfaction level are more straightforward, but as it was discussed, since preference variables corresponds to the 2015 answers, there is an assumption that voters' preferences have not changed between 2010 and 2015. Although, it decreases the robustness of the analysis; the findings still support the main hypothesis of this study. Actually, the data set contains the casted vote of subjects in the 2005 elections. The satisfaction level of 2005 significantly affects the probability of strategic voting at $p<0.01$ level.

Finally, the expected vote share difference between the second most preferred party and the most preferred party increases voter's probability of voting strategically as it was expected. Also, both the utility variables and preference variables affect likelihood of voting strategically significantly in an expected way.

Chapter 4

Conclusion:

Applying prospect theory to analyze strategic voting provides a new insight namely that the satisfaction level of the voter from the status-quo increases the probability of strategic voting. Experimental results support the first hypothesis that voters whose most preferred candidate is the incumbent are more prone to vote strategically than voters whose least preferred candidate is the incumbent. Also, a comparison of groups supports this argument for aggregate level data. So, the incumbent candidate loses more support than the opposition candidate because of strategic voting. Comparison between voters whose most preferred candidate is the incumbent and voters whose least preferred candidate is the incumbent has a specific mechanism. Since voters whose most preferred candidate is the incumbent, are in a loss frame or at the reference point for any outcome of the election; the utility difference between strategic voting and sincere voting is higher than voters whose least preferred candidate is the incumbent. Voters whose the least preferred candidate is the incumbent are in a gain frame or at the reference point for any outcome of election. Therefore, the utility difference between strategic voting and sincere voting is lower for them.

Beyond this specific mechanism, prospect theory predicts that when the satisfaction level of the voter from the status-quo increases, the voter's probability of voting strategically increases as well. This is the focus hypothesis of this study. Analyses of the BES data sets for the 2010 and the 2015 elections provide some support to affirm this hypothesis. The aim of strategic voting is to prevent the loss of the satisfaction level of the voter by means of lowering the chance of the least preferred party from becoming the incumbent. On the other hand, the motivation behind sincere

voting is to increase the satisfaction level gain by increasing the chance of the most preferred party to become the incumbent or stay as the incumbent. When the satisfaction level increases, the voter faces more loss and less gain. If it is combined with loss aversion, when voter's satisfaction level increases; the voter's probability of voting strategically as the option to avoid loss, increases as well.

Also, results from the data analysis supports the argument that the expected vote share margin between the second most preferred party and the most preferred party, which is one of the most prominent findings of the strategic voting literature, increases the voter's probability of strategic voting. However, experimental data did not reveal this relationship; it might be because, the independent variable is binary as it was discussed in chapter 2.

Nevertheless, results in chapter 2 suggest that sufficiently a high margin between the second most preferred candidate and most preferred candidate decreases the effect of whether the incumbent candidate is her most preferred candidate or her least preferred candidate on strategic voting. Results are the same for the aggregate level as well.

4.1 Discussion:

An important caution about the mundane realism of the experiment should be made. Experimental design cannot include the strength of party affiliation which is a determinant of strategic voting in real life into the analysis. Also, as it was indicated, there is not a significant correlation between the strength of the voter's party affiliation in real life and the probability of strategic voting in the experiment. So, subjects do not transpose strength of their party affiliation in experimental setting. One of the findings from the analysis of BES survey data is that when the strength of party affiliation and preferences included into analysis, they decrease the effect of the satisfaction level from the status-quo. Therefore, it is the basic weakness of the experiment in this study. However, the experiment provides leverage of controlling unobserved determinants of strategic voting.

There might be possible improvement in terms of methodology and extensions. Time-series cross-sectional data might be better suited to test the effects of the satisfaction level on voter's probability of strategic voting. Including different countries and elections improves the rigor of the analysis, but since just subset of voters are

possible strategic voters and strategic voting should be preference and constituency specific, the coding procedure of such analysis is extremely complex.

In terms of extensions, such relationship might be tested for different electoral rules rather than the single member district plurality rule. It is possible that such a relationship may occur under different electoral rules. Of course, such an analysis may require defining different reference points. It may be helpful to extend the reference point argument for different consideration.

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Appendix A

Pre-test Survey:

<u>**Aşağıdaki soruları cevaplayınız:**</u>

1- *Yaşınız?*

2- *Cinsiyetinizi belirtiniz.*

A-Erkek   B-Kadın

3- *Aylık gelirinizin bulunduğu aralığı belirtiniz.*

A- 0-1000TL.

B- 1000- 2500TL.

C- 2500- 5000TL.

D-5000TL ve üzeri.

4- *Mesleğinizi yazınız.*

5- *Eğitim düzeyinizi belirtiniz.*

A- İlkokul

B- Ortaokul

C- Lise

D- Üniversite

E- Lisansüstü

6- *Medeni halinizi belirtiniz.*

A-Evli   B-Bekar

7- *Bir önceki genel seçimlerde oy kullandınız mı?*

A-Evet   B-Hayır

8- *Önümüzdeki genel seçimlerde oy kullanmayı düşünüyor musunuz?*

A- Evet   B-Hayır

9- *Kendinizi herhangi bir siyasi partiye bağlı hissediyor musunuz? Bağlılık düzeyinizi aşağıdakilerden hangisi en iyi tanımlar?*

A- Sıkı sıkıya bağlıyım.

B- Bağlıyım.

C- Kısmen bağlıyım.

D- Hiç bir partiye bağlı değilim.

10- *En çok kullandığınız haber kaynağı:*

A- Gazete   B- TV   C- Online haber siteleri   D- Sosyal medya   E- Diğer:

11- *Alış-veriş yaptığınız bir mağazanın ödeme sırasında size aşağıdaki indirm seçenekleri sunduğunu düşünün;*

A- Etiket fiyatı üzerinden koşulsuz %10 indirim.

ya da,

B- Kasiyerin yapacağı yazı-tura atışında eğer yazı gelirse etiket fiyatı üzerinden %20 indirim tura gelirse indirimsiz etiket fiyatı.

Hangi seçeneği tercih ederdiniz? Seçtiğiniz şıkkı işaretleyiniz.

Group 1

Ülkenizde başkanlık seçiminin yaklaşmakta olduğunu farzedin. Seçime Fatih Evren, Ali Yılmaz ve İrfan Gürkaynak başkan adayı olarak katılacaktır. Fatih Evren, ülkenin şu anki başkanıdır. Seçimde en fazla oyu alacak olan aday ülkenin yeni başkanı olacaktır.

İzlediği politikalarla ve savunduğu görüşler ile bir önceki seçimde de oy vermiş olduğunuz Fatih Evren size en yakın adaydır. Fatih Evren şu anda başkalık koltuğuda oturmaktadır.

İkinci aday Ali Yılmaz'ın savunduğu bazı politikalara karşı olsanızda belli başlı fikirleri sizin görüşlerinizle uyuşmaktadır. İrfan Gürkaynak'a göre fikirleri ve vaad ettiği politikalar sizin için daha makuldür.

Diğer aday İrfan Gürkaynak sizin fikirlerinize tamamen zıt görüşlere sahiptir. Seçimi kazanması ülkenin istemediğiniz şekilde yönetilmesine sebep olacaktır.

Seçimlerden yaklaşık bir ay önce, üç farklı araştırma şirketi, adayların seçimde alacakları oy oranlarını belirleyebilmek için yaptıkları anketlerde aşağıdaki sonuçlara ulaşmışlardır.

Araştırma Şirketi A'nın oy oranı tahminleri :

Başkan Fatih Evren: %28.4   Ali Yılmaz: %35.5   İrfan Gürkaynak: % 36.1

Araştırma Şirketi B'nin oy oranı tahminleri:

Başkan Fatih Evren: %26.2   Ali Yılmaz: %36.7   İrfan Gürkaynak: %37.1

Araştırma Şirketi C'nin oy oranı tahminleri:

Başkan Fatih Evren: %29.7   Ali Yılmaz: %34.9   İrfan Gürkaynak: %36.4

Yukarıda verilen bilgilerle seçimde hangi adaya oy verirdiniz? Yanındaki kutucuğu işaretleyiniz.

☐ Kesinlikle Başkan Fatih Evren'e oy verirdim.

☐ Muhtemelen Başkan Fatih Evren'e oy verirdim.

☐ Kararsız kalırdım.

☐ Muhtemelen Ali Yılmaz'a oy verirdim.

☐ Kesinlikle Ali Yılmaz'a oy verirdim.

☐ İrfan Gürkaynak'a oy verirdim

☐ Oy Kullanmazdım

Group 2

Ülkenizde başkanlık seçiminin yaklaşmakta olduğunu farzedin. Seçime Fatih Evren, Ali Yılmaz ve İrfan Gürkaynak başkan adayı olarak katılacaktır. İrfan Gürkaynak, ülkenin şu anki başkanıdır. Seçimde en fazla oyu alacak olan aday ülkenin yeni başkanı olacaktır.

İzlediği politikalarla ve savunduğu görüşler ile bir önceki seçimde de oy vermiş olduğunuz Fatih Evren size en yakın adaydır.

İkinci aday Ali Yılmaz'ın savunduğu bazı politikalara karşı olsanızda belli başlı fikirleri sizin görüşlerinizle uyuşmaktadır. İrfan Gürkaynak'a göre fikirleri ve vaad ettiği politikalar sizin için daha makuldür.

İrfan Gürkaynak sizin fikirlerinize tamamen zıt görüşlere sahiptir. Seçimi kazanması ülkenin istemediğiniz şekilde yönetilmesine sebep olacaktır. İrfan Gürkaynak şu anda başkanlık koltuğunda oturmaktadır.

Seçimlerden yaklaşık bir ay önce, üç farklı araştırma şirketi, adayların seçimde alacakları oy oranlarını belirleyebilmek için yaptıkları anketlerde aşağıdaki sonuçlara ulaşmışlardır.

<u>Araştırma Şirketi A'nın oy oranı tahminleri :</u>

Fatih Evren: %28.4   Ali Yılmaz: %35.5   Başkan İrfan Gürkaynak: % 36.1

<u>Araştırma Şirketi B'nin oy oranı tahminleri:</u>

Fatih Evren: %26.2   Ali Yılmaz: %36.7   Başkan İrfan Gürkaynak: %37.1

<u>Araştırma Şirketi C'nin oy oranı tahminleri:</u>

Fatih Evren: %29.7   Ali Yılmaz: %34.9   Başkan İrfan Gürkaynak: %36.4

Yukarıda verilen bilgilerle seçimde hangi adaya oy verirdiniz? Yanındaki kutucuğu işaretleyiniz.

☐ Kesinlikle Fatih Evren'e oy verirdim.

☐ Muhtemelen Fatih Evren'e oy verirdim.

☐ Kararsız kalırdım.

☐ Muhtemelen Ali Yılmaz'a oy verirdim.

☐ Kesinlikle Ali Yılmaz'a oy verirdim.

☐ Başkan İrfan Gürkaynak'a oy verirdim

☐ Oy Kullanmazdım

Group 3

Ülkenizde başkanlık seçiminin yaklaşmakta olduğunu farzedin. Seçime Fatih Evren, Ali Yılmaz ve İrfan Gürkaynak başkan adayı olarak katılacaktır. Fatih Evren, ülkenin şu anki başkanıdır. Tek tur üzerinden yapılacak seçimde en fazla oy alan aday ülkenin yeni başkanı olacaktır.

İzlediği politikalarla ve savunduğu görüşler ile bir önceki seçimde de oy vermiş olduğunuz Fatih Evren size en yakın adaydır. Fatih Evren şu an başkanlık koltuğunda oturmaktadır.

İkinci aday Ali Yılmaz'ın savunduğu bazı politikalara karşı olsanız da belli başlı fikirleri sizin görüşlerinizle uyuşmaktadır. İrfan Gürkaynak'a göre fikirleri ve vaad ettiği politikalar sizin için daha makuldür.

Diğer aday İrfan Gürkaynak sizin fikirlerinize tamamen zıt görüşlere sahiptir. Seçimi kazanması ülkenin istemediğiniz şekilde yönetilmesine sebep olacaktır.

Seçimlerden yaklaşık bir ay önce, üç farklı araştırma şirketi, adayların seçimde alacakları oy oranlarını belirleyebilmek için yaptıkları anketlerde aşağıdaki sonuçlara ulaşmışlardır.

<u>Araştırma Şirketi A'nın oy oranı tahminleri :</u>

Başkan Fatih Evren: %18.4   Ali Yılmaz: %40.5   İrfan Gürkaynak: % 41.1

<u>Araştırma Şirketi B'nin oy oranı tahminleri:</u>

Başkan Fatih Evren: %16.2   Ali Yılmaz: %41.7   İrfan Gürkaynak: %42.1

<u>Araştırma Şirketi C'nin oy oranı tahminleri:</u>

Başkan Fatih Evren: %19.7   Ali Yılmaz: %39.9   İrfan Gürkaynak: %41.4

Yukarıda verilen bilgilerle seçimde hangi adaya oy verirdiniz? Yanındaki kutucuğu işaretleyiniz.

☐ Kesinlikle Başkan Fatih Evren'e oy verirdim.

☐ Muhtemelen Başkan Fatih Evren'e oy verirdim.

☐ Kararsız kalırdım.

☐ Muhtemelen Ali Yılmaz'a oy verirdim.

☐ Kesinlikle Ali Yılmaz'a oy verirdim.

☐ İrfan Gürkaynak'a oy verirdim

☐ Oy Kullanmazdım

Group 4

Ülkenizde başkanlık seçiminin yaklaşmakta olduğunu farzedin. Seçime Fatih Evren, Ali Yılmaz ve İrfan Gürkaynak başkan adayı olarak katılacaktır. İrfan Gürkaynak, ülkenin şu anki başkanıdır. Tek tur üzerinden yapılacak seçimde en fazla oy alan aday ülkenin yeni başkanı olacaktır.

İzlediği politikalarla ve savunduğu görüşler ile bir önceki seçimde de oy vermiş olduğunuz Fatih Evren size en yakın adaydır.

İkinci aday Ali Yılmaz'ın savunduğu bazı politikalara karşı olsanız da belli başlı fikirleri sizin görüşlerinizle uyuşmaktadır. İrfan Gürkaynak'a göre fikirleri ve vaad ettiği politikalar sizin için daha makuldür.

Diğer aday İrfan Gürkaynak sizin fikirlerinize tamamen zıt görüşlere sahiptir. Seçimi kazanması ülkenin istemediğiniz şekilde yönetilmesine sebep olacaktır. İrfan Gürkaynak şu an başkanlık koltuğunda oturmaktadır.

Seçimlerden yaklaşık bir ay önce, üç farklı araştırma şirketi, adayların seçimde alacakları oy oranlarını belirleyebilmek için yaptıkları anketlerde aşağıdaki sonuçlara ulaşmışlardır.

Araştırma Şirketi A'nın oy oranı tahminleri :

Fatih Evren: %18.4   Ali Yılmaz: %40.5   Başkan İrfan Gürkaynak: % 41.1

Araştırma Şirketi B'nin oy oranı tahminleri:

Fatih Evren: %16.2   Ali Yılmaz: %41.7   Başkan İrfan Gürkaynak: %42.1

Araştırma Şirketi C'nin oy oranı tahminleri:

Fatih Evren: %19.7   Ali Yılmaz: %39.9   Başkan İrfan Gürkaynak: %41.4

Yukarıda verilen bilgilerle seçimde hangi adaya oy verirdiniz? Yanındaki kutucuğu işaretleyiniz.

☐ Kesinlikle Fatih Evren'e oy verirdim.

☐ Muhtemelen Fatih Evren'e oy verirdim.

☐ Kararsız kalırdım.

☐ Muhtemelen Ali Yılmaz'a oy verirdim.

☐ Kesinlikle Ali Yılmaz'a oy verirdim.

☐ Başkan İrfan Gürkaynak'a oy verirdim

☐ Oy Kullanmazdım

Group Characteristics:

Group 1:

Variable	Obs	Mean	Std. Dev.	Min	Max
age	77	33.67532	14.00699	19	71
education	77	3.12987	1.28094	1	5
sex	77	.3376623	.4760139	0	1
partya	77	1.935065	.9505907	0	4
risk	77	.1688312	.3770592	0	1

Group 2:

Variable	Obs	Mean	Std. Dev.	Min	Max
age	81	33.62963	12.85928	19	66
education	81	3.432099	1.071661	1	5
sex	81	.4074074	.4944132	0	1
partya	81	1.864198	1.00937	0	4
risk	81	.1604938	.4017708	-1	1

Group 3:

Variable	Obs	Mean	Std. Dev.	Min	Max
age	70	31.82857	12.8998	19	65
education	70	3.5	.9743076	1	4
sex	70	.3714286	.4866755	0	1
partya	70	2.085714	.9592095	1	4
risk	69	.1304348	.3392485	0	1

Group 4:

Variable	Obs	Mean	Std. Dev.	Min	Max
age	73	33.65753	13.87666	18	71
education	73	3.205479	1.189758	1	4
sex	73	.1917808	.3964262	0	1
partya	73	1.890411	1.048301	1	4
risk	73	.2465753	.4340002	0	1

Appendix B

Data set that is used in third chapter is the fourth wave of British Election Studies Internet Panel that contains 16629 participants. It is conducted in March 2015 as an online survey by British Election Studies. It is retrieved from http://www.britishelectionstudy.com/data-objects/panel-study-data/

Below, you can find the questions which are used to measure several variables in data analysis:

1- To measure preferences of participants for parties, following questions is used:
How much do you like or dislike each of the following parties? (Participants' answers suppose to vary between 1 to 10 where 1 represents strongly dislike and 10 represent strongly like for each party)

2- To measure vote intention of participants, the following question is used:
If there were a UK General Election tomorrow, which party would you vote for?

3- To measure certainty of vote which converts binary dependent variable into continuous dependent variable; the following question is used:
You said that you would be most likely to vote for ....in a General Election. How certain are you that you would vote for this party?

4- To measure voter's expectations about vote shares of parties in their constituencies, participants' answers for following question is used:
How likely is it that each of these parties will win the General Election in your constituency?(participants' answers suppose to vary between 0 to 100 for each party)

Also, below you can find the descriptive statistics for probable strategic voters' satisfaction levels from status-quo:

| satisfaction2015 | Party identification | | | |
	Conservat	Labour	Liberal D	Total
-9.5	0	8	0	8
-9	0	3	0	3
-8.5	0	1	0	1
-8	0	4	0	4
-7.5	0	9	0	9
-7	0	8	0	8
-6.5	0	19	0	19
-6	0	12	0	12
-5.5	0	10	0	10
-5	1	7	2	10
-4.5	4	17	3	24
-4	3	13	6	22
-3.5	11	14	9	34
-3	13	6	7	26
-2.5	14	12	10	36
-2	25	4	12	41
-1.5	21	3	16	40
-1	21	1	14	36
-.5	13	1	17	31
Total	126	152	96	374

| satisfaction2015 | strategicprospect | | |
	0	1	Total
-9.5	8	0	8
-9	3	0	3
-8.5	1	0	1
-8	4	0	4
-7.5	8	1	9
-7	8	0	8
-6.5	18	1	19
-6	9	3	12
-5.5	10	0	10
-5	9	1	10
-4.5	21	3	24
-4	18	4	22
-3.5	26	8	34
-3	24	2	26
-2.5	30	6	36
-2	34	7	41
-1.5	34	6	40
-1	29	7	36
-.5	23	8	31
Total	317	57	374