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Subjective well-being, satisfaction with public services and election outcomes in Turkey

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ABSTRACT

There is an emerging literature to explain the variation in voting behavior by subjective well-being (or 'happiness') measures beyond standard economic and financial variables that economic voting models assert. This paper contributes to this new line of research by testing whether subjective well-being indicators are significant predictors of the June 2015 elections in Turkey. Using the 2013 wave of Life Satisfaction Surveys that is representative at the provincial level, our findings indicate that low levels of subjective well-being ('discontent') have a strong predictive power on the outcome of elections at the local level, accounting for provincial demographic and socioeconomic covariates, and possible reverse causality. We also use additional questions on satisfaction with public services and find that the Turkish electorate is more responsive to particular policies of the incumbent party rather than general economic conditions, or their general well-being.

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1. Introduction

An extensive empirical literature finds widespread evidence of a positive relationship between voting behavior and the state of the economy. In most Western democracies, as well as in a number of low-income democracies, the economy seems to be determinate (Lewis-Beck and Stegmaier, 2000). However, the magnitude of economic voting varies significantly across countries and time (Duch and Stevenson, 2008). It is even possible, albeit rare, to find cases where incumbents lost elections despite favorable economic conditions.

Based on retrospective voting theory, this literature assumes that voters consider changes in their utility level and elect those whom they consider competent and effective, and uses economic indicators as proxies for voter's utility. On the other hand, a number of studies argue that there are other factors beyond the economy that may have a strong impact on election outcomes. For example, Bellucci (1984) refers to the historical context in 1980 s Italy, Nannestad and Paldam (1995) emphasize the institutional structure, such as the strong social state in Denmark, and Duch and Stevenson (2008) point out the perception of competence. Moreover, studies in psychology add group and status threat (Knowles and Tropp, 2018), preferences for authoritarianism (MacWilliams, 2016) and moral values (Enke, 2020) to the list.

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Recently, there has been an interest in finding a more comprehensive measure of well-being that goes beyond standard economic variables (Stiglitz et al., 2010). Many national statistics offices have begun collecting data on subjective well-being (SWB) to measure societal progress along the economic performance. Now a new literature is emerging and testing whether overall happiness¹ or discontent could be a good predictor of election outcomes (Liberini et al., 2017; Ward et al., 2020; Ward, 2020).

We contribute to this new strand of literature testing whether subjective well-being played a role in the June 2015 general elections in Turkey, a country which has been classified as partially free by Freedom House in 2015 and that hence differs from the countries in which the hypothesis was tested in earlier studies. We use province-level data collected by TurkStat in 2013, and test whether the average subjective well-being score, as well as the level of discontent, defined as the share of the population who have low SWB, can predict the outcome of elections in each province.

Our second contribution is testing whether satisfaction from particular public services provided by the national government, specifically health, education and security services, has predictive power regarding election results, that is, whether voters are more focused on specific policies and activities of the government rather than on general economic trends or overall happiness.

Theoretical models of retrospective voting behavior are based on a principal-agent framework. Voters are either facing a moral hazard problem and voting to keep competent politicians in power while punishing them if they fail to deliver higher welfare, thus providing incentives for politicians to work harder as in Barro (1973), or an adverse selection problem, where they can only observe their own welfare and learn about the incumbents' type and prefer them over unknown contenders as long as they are satisfied with their performance as in Fearon (1999).

Empirical testing of retrospective voting therefore relies on measures of welfare or utility of voters. What constitutes a good measure of welfare is, however, still an ongoing debate. Most studies use economic and financial indicators as proxies of peoples' "decision utility" based on revealed preferences. An alternative or complementary approach is to invoke the "experienced utility" (Kahneman et al., 1997), the pleasure derived from consumption. Recently there is a growing literature considering whether subjective well-being along with standard variables, such as macroeconomic trends and financial well-being, can explain or predict voting outcomes.

The first study relating SWB to voting behavior is by Liberini et al. (2017). Using a large panel of data (BHPS), they show that subjective well-being explains significant variation in voting intentions controlling for the usual economic and financial indicators in the United Kingdom between 1996 and 2008. They find that people who are satisfied with their lives are more likely to vote for the incumbent and the magnitude of the estimated coefficient is higher than the one for improvement in financial situation.

Studying a long-run panel of general elections in Europe, Ward (2020) finds that well-being is a strong predictor of election results. National measures of subjective well-being are able to explain more of the variance in the governing party's vote share than standard macroeconomic indicators typically used in the economic voting literature. In contrast to Liberini et al. (2017), the main findings of the paper are based on aggregate data. Nonetheless, using panel surveys for the UK and Germany and controlling for individual fixed effects, the author confirms the findings of the aggregated analysis.

A third study using Gallup Daily Poll data aggregated at the county level shows that subjective well-being is a strong predictor of Trump's victory in the US in 2016 after controlling for an extensive list of factors (Ward et al., 2020) such that a one standard deviation change in SWB in battleground states could have reversed the election results. They conclude that the overall cognitive assessment of welfare has a strong bearing on electoral decisions.

Our main results are pertaining to the June 2015 elections in Turkey, in which the governing party, AKP (Justice and Development Party), lost nine points in the elections. Consistent with retrospective voting theory and earlier empirical studies we find a strong positive correlation with average happiness and vote share of the incumbent party. One particular concern with this finding is the existence of possible endogeneity, that is, whether average subjective well-being is higher in provinces that have stronger ideological inclinations towards the incumbent. When we control for the average vote share of the AKP in previous elections, the significant relationship between average happiness and vote share disappears, but our variable measuring discontent still has significant predictive power.

Satisfaction with public services, on the other hand, turns out to be a stronger predictor of election outcomes, even controlling for endogeneity. This is indicative of voters being more focused on particular policies of the government rather than on economic conditions and overall subjective well-being, both of which could be affected by factors that are exogenous to policies and actions of the incumbent party.

After three months of unsuccessful discussions to form a coalition following the June elections, the president announced new elections in November of the same year. These resulted in the AKP regaining its losses from June. We also show that neither economic nor SWB variables can explain the AKP's recovery, but satisfaction with public services, particularly health services, still have some significant predictive power. This finding may indicate that voters are more inclined to punish governments for their failures on issues on which they have direct control.

2. Election outcomes

The AKP was established in August 2001 with the leadership of a reformist faction of Islamist tradition, bringing together a wide range of political views ranging from social conservatives to social democrats. After a decade of unsuccessful coalition governments,

¹ SWB and happiness may arguably not refer to the same state; however, we use both terms interchangeably in this paper.

Turkey faced a severe financial crisis in early 2001. The governing coalition formed by social democrats, liberals and nationalists collapsed, and new elections were announced in mid-2002, to be held in November of the same year. The elections resulted in the ejection of all parties that had been represented in the Parliament previously, and despite its short history, the AKP won 34.3 % of the votes and two-thirds of the seats.

Implementing sound economic policies, such as rule-based decision-making rather than discretion, and allowing economic institutions that were formed after the crisis to operate independently, in the first few years the AKP government bolstered competition, reduced the fiscal deficit, enabled high growth rates, and reduced inequality and inflation. Apart from economic policies, consecutive AKP governments emphasized higher quality education and healthcare for all, as well as security, arising from the clashes between Turkish security forces and separatist Kurdish militia.

In the following two general elections in 2007 and 2011, the AKP increased its vote share to 46.5 % and 49.8 %, respectively, and won enough seats in Parliament to form single party government.² Despite early success in most economic issues, there were signs of slowing economic growth, worsening or not improving economic inequality and deterioration in institutions (Acemoğlu and Üçer, 2019), yet none of these diminished the popularity of the AKP until 2015.

In 2015 elections were held in June. The AKP's vote share declined by more than 9 points and decreased to 40.7 %. Interestingly, the AKP lost votes in each and every province (Fig. 1), even in its strongholds, such as Konya (a little more than 4 %). For the first time since its launch, the AKP could not obtain a majority of the seats and took up talks to form a coalition government. Talks with the second largest party in the new parliament, the Nationalist Movement Party (MHP), ended unsuccessfully. Meanwhile, the president denounced talks that had started before the June elections between the interim government and Kurdish politicians, which was followed by serious and deadly terrorist attacks by ISIS and Kurdish insurgents in various parts of the country. In August, before the time for further discussions to form a new government expired, the president announced new elections to be held in November. In the new elections, the AKP increased its popular vote share back to 49.4 %, secured 317 seats in the Parliament and formed yet another single party government, which was further backed by the MHP. Similar to the June elections, though in the other direction, the AKP's votes increased in all provinces, more so in AKP strongholds (Fig. 2).

3. Data

The main variables of interest are vote shares of the incumbent AKP in the June and November 2015 elections in each of the 81 provinces. We derive these variables using data obtained from the Supreme Election Council. Table 1 shows that the AKP's vote share exhibits significant variation across provinces, ranging from 8.8 % to 66.8 % in June, and has an even wider range in the November elections. To control for possible reverse causality that we discuss in the next section, we have also constructed an AKP_{Base} variable, which is the average vote share of the AKP in the previous three elections. The variation of the AKP's vote share across provinces has been persistent.

Our first hypothesis concerns whether subjective well-being or satisfaction with nationally provided public services has a bearing on the AKP's vote share. While Life Satisfaction Surveys (LSSs) have been conducted in Turkey by the Turkish Statistical Institute (TurkStat, 2013) each year since 2003, provincial level (representative) subjective well-being measures are only available for 2013, and the satisfaction variables used in this paper are derived from this particular wave. The surveys cover a set of satisfaction measures along with demographic data on individuals, but do not include any questions about the political inclination of respondents. Thus we are not able to perform individual-level analysis. Our "life satisfaction" measure is based on the question "All things considered, how happy are you with your life?" with 1 corresponding to *Very Unhappy* and 5 to *Very Happy*.

We construct three different measures of subjective well-being. The first is a simple average score in each province. Previous research on determinants of happiness has shown that it varies across demographic groups. For example, younger (or married) people have higher SWB compared to older people (or bachelors, or divorcees, who typically have the lowest SWB). If the age distribution varies across provinces (or, for any reason, the marriage and divorce rates vary across provinces), the average SWB could be misleading. We adjust our measure for individual determinants of SWB and obtain what Di Tella et al. (1999) label a country's level of "pure" subjective well-being. We regress SWB on a set of demographic variables such as gender, age, education, income, marital status, etc., for the entire sample. The mean residual life satisfaction calculated for each province is our second measure, which we call "Pure SWB".³ In our regression analysis, we standardize both Average SWB and Pure SWB across provinces to make the interpretation of the estimated coefficients easier.

Ward (2020) reports that negative changes in SWB are a much stronger predictor of the government vote share than positive ones. Our third measure is based on this premise and comprises the share of those who declare themselves "Very Unhappy" or "Unhappy" in each province. We refer to this new variable as the "level of discontent." We provide the sample statistics in Table 1. As with the vote shares, there are significant variations in SWB measures, particularly in the Pure SWB and discontent measures.

As a second hypothesis, we test whether satisfaction about public services plays a role in voters' decisions beyond economic well-being and overall life satisfaction. The LSSs have additional questions relating to satisfaction with each of the public services

² The AKP's election successes are not limited to general elections. In local elections in 2004, 2009 and 2014 the party won over 40 % of the popular votes in each. In two referendums to modify sections of the constitution, first to limit the power of the military in 2010, and later to switch to a new presidential regime in 2014, the AKP stood on the winning side. Finally, in the first Presidential election held in 2014, the AKP's candidate, its president Erdoğan, won 52 % of the votes in the first round and became the first president of the country elected by popular vote.

³ The results of determinants of happiness are provided in the supplementary material (Table S1) to this article.

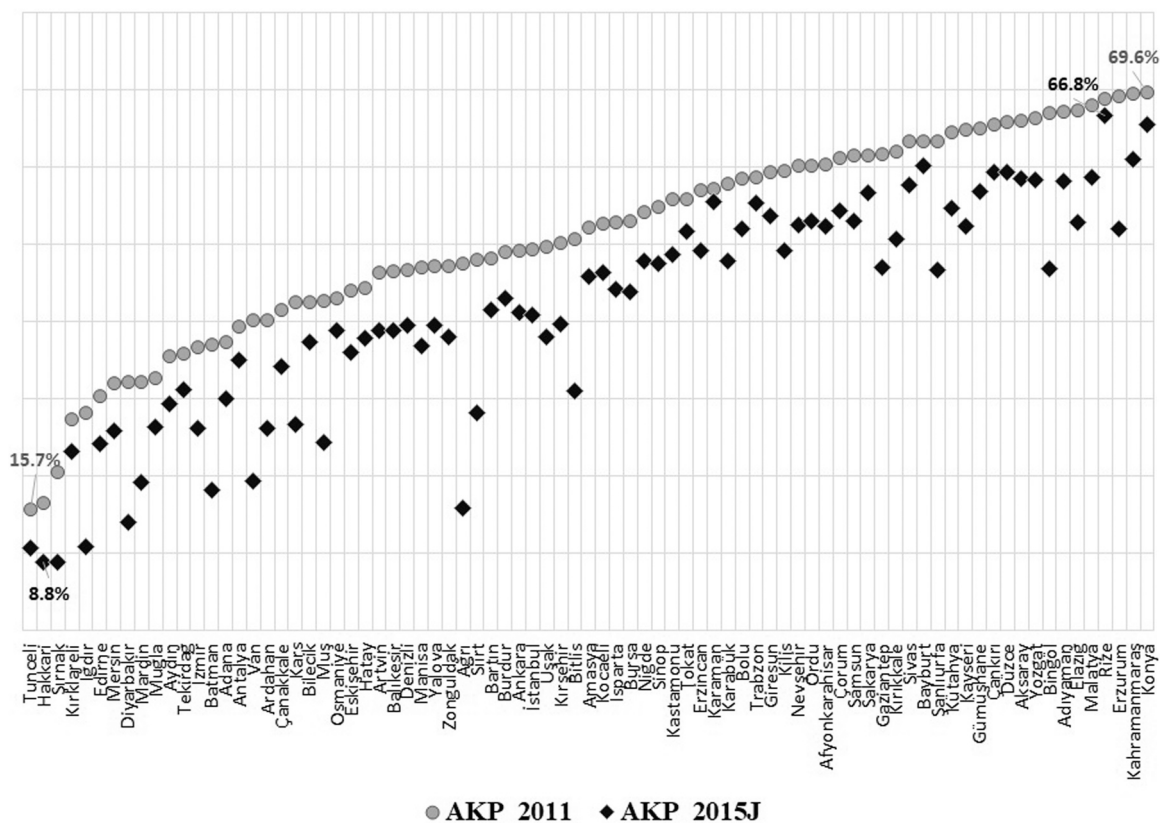


Fig. 1. AKP Vote Share - 2011 vs. 2015 June elections.

administered by the national government. We have chosen three such questions – “Are you satisfied with health/education/security services?” – to investigate whether satisfaction with public services had changed the vote share of the incumbent party. We have chosen these three questions because they apply to all individuals.⁴ More importantly, however, successive AKP governments put special emphasis on these three services. At the time the survey was conducted, there was a serious discussion about privatizing the health services. In 2012, a so-called education reform was implemented with much objection from the opposition. Last but not least, security, particularly related to terrorism, is always kept on the agenda by the AKP. The rating scales of these questions are similar to happiness, 1 represents *Very Unsatisfied* and 5 *Very Satisfied*. As before, we use the average score in a province to measure satisfaction with public services (SPS) in that province and standardize across provinces.

We control for economic well-being by using the unemployment rate in 2013 and growth of per capita gross value added generated in each province between 2011 and 2015.⁵ A third variable to measure economic well-being that is used in the analysis is derived from LSS based on the so-called “economic ladder question”: “*Imagining that the person in the lowest welfare state in Turkey is on step 0 and the highest state is on step 10, on which step do you consider yourself?*” As is the case with the subjective well-being question, we calculate the average score across all individuals in each province and standardize across provinces.

Our econometric specifications also include three additional provincial level controls, the urbanization rate, the share of university graduates and the share of religious people, the last one derived from the Life Satisfaction Survey based on the question whether the individual has an interest in religion.

4. Models and estimation results

Our main question is whether subjective well-being and satisfaction with public services explain incumbent voting (in our case the vote share of the AKP) in Turkey beyond conventional economic variables that are common in retrospective voting models. We use a set of linear probability models over 81 provinces of the following form:

⁴ There are questions about satisfaction from a larger set of public services, for example about judicial services. However, if an individual had no case in the courts, the typical response was “no opinion”. For all services other than those included here the share of non-response was above 30 % and thus they were not used in our analysis.

⁵ All other possible available macroeconomic variables are at a much more aggregated level, either national or regional covering more than one province.

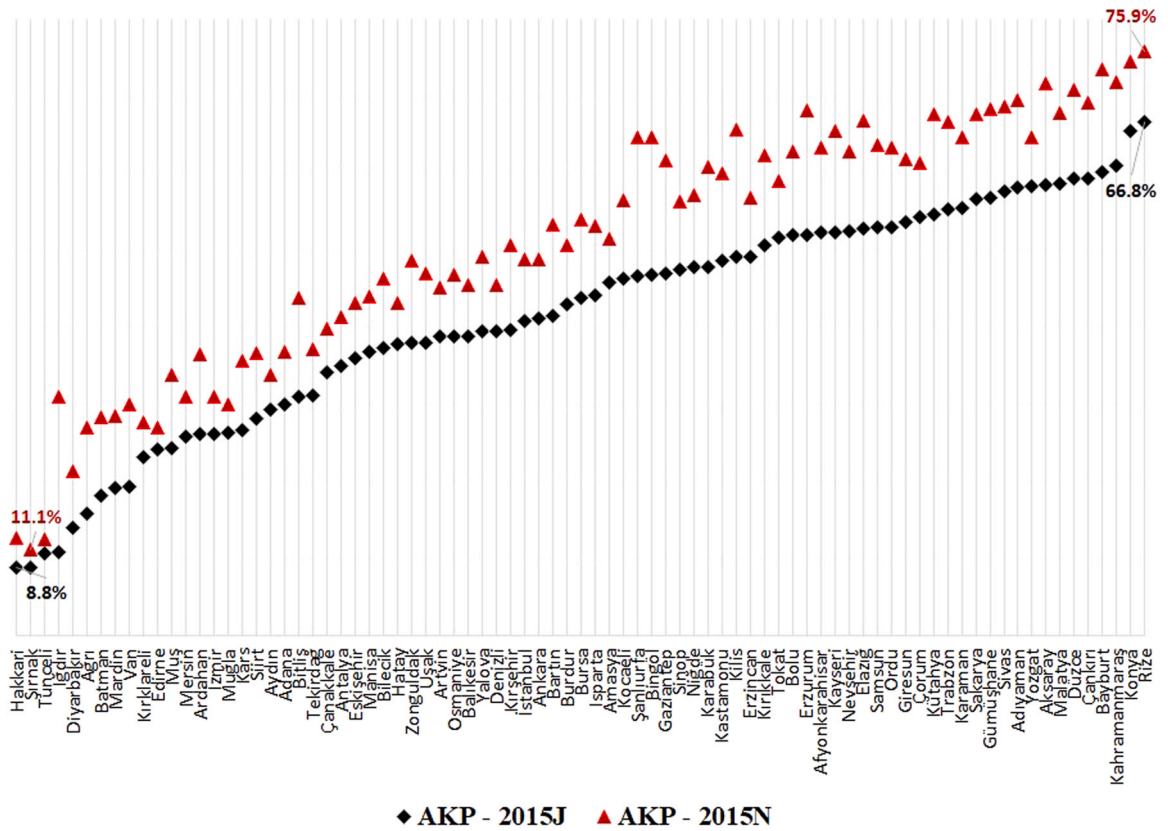


Fig. 2. AKP Vote Share - 2015 June vs. 2015 November elections.

Table 1
Descriptive statistics

| | Mean | Std. Dev. | Min | Max |
|--------------------------------|-------|-----------|--------|-------|
| AKP Vote Share (June_2015) | 0.414 | 0.145 | 0.088 | 0.668 |
| AKP Vote Share (November_2015) | 0.509 | 0.162 | 0.111 | 0.759 |
| AKP_Base | 0.438 | 0.124 | 0.115 | 0.640 |
| Unemployment rate | 0.088 | 0.039 | 0.042 | 0.234 |
| Growth | 0.117 | 0.017 | 0.072 | 0.174 |
| Avg. ELQ | 4.036 | 0.527 | 1.479 | 4.953 |
| Avg. SWB | 3.567 | 0.123 | 3.174 | 3.965 |
| Avg. Pure SWB | 0.021 | 0.101 | -0.270 | 0.330 |
| Share of Unhappy | 0.111 | 0.040 | 0.056 | 0.248 |
| Avg. Satisfaction - Health | 3.675 | 0.145 | 3.138 | 3.927 |
| Share of Unhappy - Health | 0.135 | 0.055 | 0.055 | 0.378 |
| Avg. Satisfaction - Education | 3.613 | 0.167 | 2.986 | 4.055 |
| Share of Unhappy - Education | 0.140 | 0.060 | 0.064 | 0.427 |
| Avg. Satisfaction - Security | 3.806 | 0.137 | 3.405 | 4.184 |
| Share of Unhappy - Security | 0.079 | 0.041 | 0.032 | 0.263 |
| Urbanization rate | 0.757 | 0.125 | 0.346 | 0.998 |
| Share of university graduates | 0.123 | 0.028 | 0.069 | 0.234 |
| Share of religious people | 0.411 | 0.122 | 0.112 | 0.741 |

Notes: Averages over 81 provinces.

$$y_j = \alpha s_j + e'_j \beta + x'_j \gamma + \epsilon_j \tag{1}$$

where y_j is our dependent variable indexed over provinces. Our first model uses the AKP's vote share in the June 2015 elections as the dependent variable.

We also test whether well-being or satisfaction with policies enabled the AKP to increase its vote share five months later in the November elections, which we term as "recovery", and our dependent variable in this case is defined as

Table 2
Bivariate regressions

| Dependent Variable: AKP's Vote Share in 2015 June Elections | | | | | | |
|---|----------------------|--------------------|---------------------|---------------------|---------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Unemployment | -1.739*** (0.282) | | | | | |
| Growth | | 1.843** (0.735) | | | | |
| Avg. ELQ | | | 0.061*** (0.012) | | | |
| Avg. SWB | | | | 0.066*** (0.013) | | |
| Pure SWB | | | | | 0.058*** (0.016) | |
| Discontent | | | | | | -1.820*** (0.335) |
| R-squared | 0.215 | 0.047 | 0.176 | 0.208 | 0.160 | 0.247 |

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

$\Delta AKP = (AKP_{2015N} - AKP_{2015J})$. It is quite possible that the events between the two elections may have changed voters' decisions. Our aim is to test whether our measures of satisfaction are strong enough to overcome such changes in the political atmosphere.

The vector e_j controls economic variables, unemployment and growth to capture economic voting behavior, and includes an average of the individual level economic well-being indicator *Avg. ELQ* which is derived from LSS. x_j is the vector of other provincial control variables including the urbanization rate, share of university graduates and the share of religious people.

The main coefficient of interest is α , which provides an estimate of the relationship between the AKP vote share and subjective well-being or satisfaction with public services. s_j is the measure of subjective well-being represented by three different variables, *Avg. SWB*, *Pure SWB* and *Discontent* or measures of satisfaction with public services to test our second hypothesis (as with well-being we use both average scores and the share of the unsatisfied within the province, alternatively).

4.1. June 2015 elections

Before proceeding with the model, we run bivariate regressions with each of the subjective and economic well-being variables in order to observe the extent to which they explain the AKP's vote share in June 2015. Table 2 shows that all coefficients of economic variables have the expected signs and are significant, confirming the economic voting hypothesis. A one percent increase in the provincial unemployment rate decreases the AKP's vote share by 1.74 % and a one percent increase in per capita GDP growth increases it by 1.84 %, whereas a one standard deviation increase in the average economic well-being score increases the AKP's vote share by 6.1 %.

Similarly, all SWB measures also have the expected signs and are significant. A one standard deviation increase in the average and pure SWB score increases the AKP's votes by 6.6 % and 5.8 %, respectively, and a one percent increase in the share of discontented

Table 3
Subjective well-being and AKP vote share

| Dependent Variable: AKP's Vote Share in 2015 June Elections | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) |
| Unemployment | -1.825** (0.338) | -1.143** (0.478) | -0.842* (0.488) | -0.873* (0.488) | -0.653 (0.467) |
| Growth | 1.032 (0.768) | 1.538** (0.756) | 1.666** (0.737) | 1.519** (0.722) | 1.762** (0.726) |
| Avg. ELQ | | 0.053** (0.020) | 0.039* (0.021) | 0.046** (0.020) | 0.039* (0.022) |
| Avg. SWB | | | 0.043*** (0.013) | | |
| Pure SWB | | | | 0.042*** (0.013) | |
| Discontent | | | | | -1.317*** (0.398) |
| R-squared | 0.234 | 0.360 | 0.430 | 0.435 | 0.448 |

Notes: Regressions include urbanization rate, share of university graduates and share of religious people as controls. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

people reduces the AKP's votes by 1.82 %. More importantly, however, the correlation of the well-being scores with the incumbent vote share is similar to that of the economic variables, and even higher if we consider our measure of *Discontent*.

The baseline model includes only those variables that are relevant for the retrospective voting theory: provincial unemployment and the growth rate. The first column of [Table 3](#) provides the results of this specification. In the second column we add average subjective economic well-being of voters. The results support the economic voting theory, an increase in the unemployment rate significantly reduces the incumbent's vote share, and increases in the growth rate and economic well-being of citizens significantly increase it. In the next three columns we augment the model by adding subjective well-being measures. The inclusion of either SWB measure increases the explanatory power of the model significantly. A one standard deviation increase in average well-being or pure well-being increases the AKP's vote share by 4.2 % in that province, whereas a one percent increase in the share of unhappy individuals decreases the incumbents' votes by 1.3 %. It should also be noted that the size of the coefficients of economic well-being and SWB are very close to each other. Our findings indicate that subjective well-being matters beyond macroeconomic and economic well-being and they constitute a significant component of the voters' decision.⁶

It is also possible that the effect of subjective well-being is non-linear, that is, the effect may vary depending on the economic performance.⁷ Thus, we run our regressions by interacting our well-being measures with economic growth and unemployment. In [Table 3A](#) we report the estimated marginal effects. For our well-being measures we have evaluated these margins at minimum, average and maximum observed growth/unemployment rates.⁸ As expected, the effect of average well-being is higher in provinces where the economic performance, whether regarding higher growth or lower unemployment, was higher. Interestingly, however, the effect of discontent goes in the opposite direction. In provinces where the economic performance is relatively better, the share of discontented people decreases the AKP's vote share more relative to provinces with a lower economic performance. Thus, this finding supports our argument that there is more to voting behavior than economic performance.

An important issue arising with this specification is the possibility of reverse causality. The subjective well-being score in some provinces might be higher either because they voted for the AKP in the previous elections and hence may well feel better because their chosen party is in power, or, as long as the incumbent party has the power to follow preferential policies, the AKP might have provided better services in those provinces that voted heavily for them, consequently resulting in higher SWB or policy satisfaction scores. In order to address this problem we use the AKP's average vote share in the previous three elections (2002, 2007 and 2011) as a proxy for the AKP base, denoted as AKP_{Base} , and our dependent variable is modified as a deviation of the AKP vote shares in the June 2015 elections from its base ($AKP_{2015J} - AKP_{Base}$).⁹

In [Table 4](#), we report our estimation results by using the deviation of AKP votes from its base to tackle possible reverse causality. First, the magnitudes of all coefficients are significantly smaller, including macro variables and subjective economic well-being. More importantly, however, the subjective well-being coefficients turn to be non-significant, except for the coefficient of discontent. In fact, the only variable that matters in this set of regressions is our measure of discontent. Our results suggest that reverse causality is important in the Turkish context, and once controlled for, subjective well-being becomes insignificant, unlike reported in previous studies ([Ward et al., 2020](#); [Liberini et al., 2017](#)), except for our 'discontent' measure, the share of unhappy citizens. Our results suggest that negative feelings are more important, possibly because people attribute lower well-being to government actions, but higher well-being to their own efforts, as suggested by [Ward et al. \(2020\)](#).

Once again, the possible non-linearity in the effects is controlled for by using interaction terms in our model ([Table 4A](#)).¹⁰ The results are similar when well-being measures are interacted with growth, though the effects are more pronounced at the lower and upper end of economic performance. Thus, the reported results in [Table 4](#) are apparently missing the variation in responses to well-being in different economic conditions. Our finding that discontent plays a more significant role in provinces that performed better in terms of economy holds even when we consider possible endogeneity.

Next, we turn our attention to the second hypothesis whether satisfaction with public services plays a role in voters' decisions. We use the deviation of incumbent's vote share from its base as our dependent variable, as previous results suggest that endogeneity is important. Our findings ([Table 5](#)) interestingly reveal that all public service satisfaction variables turn out to be significant and have a non-negligible impact on the vote share of the AKP, while we could not find evidence for subjective well-being earlier. For instance, a one standard deviation increase in average satisfaction in health services increases AKP votes by 2.4 % and a one standard deviation increase in average satisfaction in education and security services increases it by 1.8 %. Interacting these variables with levels of growth and unemployment shows a similar pattern with earlier results only for

⁶ Using the variance inflation factor (VIF) and condition numbers, we find no significant evidence for multicollinearity among our explanatory variables.

⁷ We thank an anonymous referee for pointing out this possibility.

⁸ Here and henceforth, we only report marginal effects evaluated at the aforementioned selected values. Estimation results ([Table S2](#)) and figures showing the marginal effects at various levels of growth and unemployment ([Fig. S1](#)) are provided in the [supplementary material](#).

⁹ Alternatively, we could have used the AKP's vote share in the previous election in 2011. However, taking into account one single election to tackle the endogeneity issue may not be reliable as there could be many other reasons surrounding that particular election and people may have voted for the party for some special reason even though they do not fully embrace the values represented by the AKP. For example, the HDP (Peoples' Democratic Party) did not enter the 2011 elections as a party but had independent candidates in certain provinces and did not nominate any in others. The personalities of these candidates may have an impact on voters' decision, especially in the eastern and southeastern part of Turkey, or in the absence of their representatives, voters may have opted for the AKP.

¹⁰ See estimation results ([Table S3](#)) and figures showing the marginal effects at various levels of growth and unemployment ([Fig. S2](#)) in the [supplementary material](#).

Table 3A
Marginal effects of SWB measures (interactions with economic variables in Table 3)

| | Avg. SWB int. w/ | | Pure SWB int. w/ | | Discont. int. w/ | |
|--|------------------|----------|------------------|----------|------------------|-----------|
| | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. |
| Unemployment | -0.811 | -0.995* | -0.859* | -0.977* | -0.678 | -0.943* |
| Growth | 1.780** | 1.739** | 1.520** | 1.610** | 1.847** | 1.921** |
| Marginal Effect of Well-being Measure evaluated at values of Interacted Variable | | | | | | |
| at min. value | -0.004 | 0.058*** | -0.005 | 0.057*** | -0.650 | -2.008*** |
| at mean value | 0.048*** | 0.045*** | 0.048*** | 0.045*** | -1.311*** | -1.525*** |
| at max. value | 0.114*** | 0.007 | 0.115*** | 0.008 | -2.149** | 0.006 |

Table 4
Controlling for endogeneity

| Dependent Variable: $(AKP_{2015J} - AKP_{Base})$ | | | | |
|--|---------------------|---------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) |
| Unemployment | -0.402** (0.188) | -0.380** (0.183) | -0.401** (0.185) | -0.262 (0.192) |
| Growth | 0.430 (0.333) | 0.439 (0.340) | 0.430 (0.335) | 0.494 (0.336) |
| Avg.ELQ | 0.019** (0.008) | 0.018** (0.008) | 0.019** (0.008) | 0.015* (0.008) |
| Avg. SWB | | 0.003 (0.005) | | |
| Pure SWB | | | 0.000 (0.006) | |
| Discontent | | | | -0.375** (0.173) |
| R-squared | 0.386 | 0.388 | 0.386 | 0.426 |

Notes: Regressions include urbanization rate, share of university graduates and share of religious people as controls. Robust standard errors in parentheses.*** p<0.01, ** p<0.05, * p<0.1.

Table 4A
Marginal effects of SWB measures (interactions with economic variables in Table 4)

| | Avg. SWB int. w/ | | Pure SWB int. w/ | | Discont. int. w/ | |
|--|------------------|----------|------------------|----------|------------------|----------|
| | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. |
| Unemployment | -0.357* | -0.415** | -0.392** | -0.394** | -0.291 | -0.396** |
| Growth | 0.525 | 0.455 | 0.430 | 0.423 | 0.590 | 0.566 |
| Marginal Effect of Well-being Measure evaluated at values of Interacted Variable | | | | | | |
| at min. value | -0.032** | 0.006 | -0.028** | -0.000 | 0.384 | -0.694** |
| at mean value | 0.006 | 0.003 | 0.003 | -0.000 | -0.369** | -0.471** |
| at max. value | 0.057** | -0.005 | 0.045* | 0.002 | -1.324*** | 0.234 |

satisfaction from health services. Satisfaction from other public services only matters at the mean values (Table 5A).¹¹ Similar conclusions can also be drawn from our measures of not being satisfied with public services. Thus, our findings indicate that voters in Turkey are more responsive to particular policies of the incumbent party rather than general economic conditions or their general well-being.

4.2. November 2015 elections

After a sharp drop in the AKP's vote share in the June elections, the party increased its share to the previous level within five months. We suspect that this swing in such a short time period cannot be explained by any macro variables and well-being measured

¹¹ See estimation results (Table S4) and figures showing the marginal effects at various levels of growth and unemployment (Fig. S3) in the supplement.

Table 5
Satisfaction with public services

| Dependent Variable: ($AKP_{2015J} - AKP_{Base}$) | | | | | | |
|--|---------------------|--------------------|--------------------|----------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Unemployment | -0.192 (0.213) | -0.225 (0.216) | -0.215 (0.226) | -0.204 (0.208) | -0.243 (0.207) | -0.190 (0.220) |
| Growth | 0.558* (0.335) | 0.582 (0.367) | 0.639* (0.383) | 0.468 (0.316) | 0.533 (0.353) | 0.552 (0.352) |
| Avg.ELQ | 0.007 (0.008) | 0.013 (0.008) | 0.012 (0.007) | 0.011 (0.007) | 0.015* (0.008) | 0.014* (0.007) |
| Avg. Health | 0.024*** (0.008) | | | | | |
| Avg. Educ | | 0.018** (0.007) | | | | |
| Avg. Secur | | | 0.018** (0.008) | | | |
| % Unsat.-Health | | | | -0.420*** (0.139) | | |
| % Unsat.-Educ | | | | | -0.294** (0.124) | |
| % Unsat.-Secur | | | | | | -0.451** (0.188) |
| R-squared | 0.485 | 0.440 | 0.428 | 0.482 | 0.447 | 0.445 |

Notes: Regressions include urbanization rate, share of university graduates and share of religious people as controls. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

before the events between the two elections. We run the same set of regressions using the difference in vote shares between the two elections as our dependent variable and report our results in [Tables 6 and 7](#). We also use the outcome of the June elections as a control to assess whether the swing is stronger in those provinces that voted more (less) against the incumbent in June.

As expected, neither economic nor well-being variables are significant¹² even when well-being measures are interacted with growth and unemployment rates ([Tables 6 and 6A](#)).¹³ While not reported, the only two variables that have some significance in these regressions are the share of university graduates and of religious people in provinces. Thus, the events between the two elections affected the voters' decision, making the usual economic and well-being considerations inconsequential.

On the other hand, considering the terrorist attacks in the summer of 2015, we expect an increase in the AKP's vote share in those provinces where satisfaction with public security services is higher. [Table 7](#) shows that this variable is only marginally significant. Only satisfaction with health services matters, a one standard deviation increase in average satisfaction increases the AKP's vote share by 1.1 % relative to the June elections. Earlier results obtained by interacting satisfaction measures with economic variables still hold ([Table 7A](#)¹⁴). In this set of regressions, however, the variable capturing the deviation of AKP votes from its base ($AKP_{2015J} - AKP_{Base}$) is significant in all specifications and indicates that the AKP recovered faster in provinces where it lost more votes.

4.3. Robustness

The AKP comes from Islamist tradition, but also embraces nationalist ideas. The National Movement Party (MHP) has been the champion of nationalist policies for decades. While the MHP entered the 2015 elections as opposition, after the elections it strongly supported the AKP's stand and policies. It is possible that conservative and nationalist voters may have been divided between these two parties in the 2015 elections. In fact, the AKP increased its seats in Parliament by 58 in the November elections, whereas the seats of the MHP decreased from 80 to 40, implying a close positioning of both parties on the political spectrum. We also run the entire analysis combining the vote share of these two parties.

The results that are reported in the [Supplementary Material \(Tables S7-S12\)](#) online do not change our main conclusions in any significant way. We find even stronger support that subjective well-being, particularly the share of unhappy population, affects the combined vote share of these two parties in the June elections. Despite the MHP being in the opposition, the combined vote share of those two parties seems to be positively related to satisfaction with public services. These findings indicate that the AKP and the MHP have been addressing the same constituencies' values and demands. As with the AKP vote share, we could not find any significant relation between economic or well-being variables and the November elections.

¹² Only past economic growth is marginally significant.

¹³ See estimation results ([Table S5](#)) and figures showing the marginal effects at various levels of growth and unemployment ([Fig. S4](#)) in the supplement.

¹⁴ See estimation results ([Table S6](#)) and figures showing the marginal effects at various levels of growth and unemployment ([Fig. S5](#)) in the online supplement.

Table 5A
Marginal effects of satisfaction with public services (interactions with economic variables in Table 5)

| | Avg. Health int. w/ | | Avg. Educ int. w/ | | Avg. Secur int. w/ | | Un.Health int. w/ | | Un.Educ int. w/ | | Un.Secur int. w/ | |
|--|---------------------|----------|-------------------|---------|--------------------|---------|-------------------|-----------|-----------------|----------|------------------|----------|
| | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. |
| Unemployment | -0.179 | -0.214 | -0.224 | -0.182 | -0.215 | -0.209 | -0.209 | -0.215 | -0.242 | -0.264 | -0.190 | -0.214 |
| Growth | 0.564* | 0.566 | 0.595 | 0.576 | 0.621 | 0.634 | 0.463 | 0.621 | 0.541 | 0.541 | 0.552 | 0.552 |
| Marginal Effect of Well-being Measure evaluated at values of Interacted Variable | | | | | | | | | | | | |
| at min. value | 0.007 | 0.027** | 0.021 | 0.013 | 0.024* | 0.017 | 0.038 | 0.038 | -0.317 | -0.399 | -0.438 | -0.606 |
| at mean value | 0.025*** | 0.024*** | 0.017** | 0.018** | 0.017** | 0.017** | -0.429*** | -0.419*** | -0.294** | -0.308** | -0.451** | -0.492** |
| at max. value | 0.047** | 0.015 | 0.013 | 0.032 | 0.007 | 0.019 | -1.021*** | -0.086 | -0.265 | -0.020 | -0.466 | -0.128 |

Table 6
Recovery

| Dependent Variable: $(AKP_{2015N} - AKP_{2015J})$ | | | | | |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| | (1) | (2) | (3) | (4) | (5) |
| Unemployment | -0.033 (0.118) | -0.085 (0.133) | -0.067 (0.137) | -0.062 (0.136) | -0.083 (0.132) |
| Growth | 0.392* (0.228) | 0.448* (0.234) | 0.457* (0.239) | 0.446* (0.236) | 0.450* (0.242) |
| Avg.ELQ | 0.006 (0.005) | 0.009 (0.005) | 0.008 (0.006) | 0.008 (0.006) | 0.009 (0.006) |
| Avg. SWB | | | 0.003 (0.004) | | |
| Pure SWB | | | | 0.004 (0.004) | |
| Discontent | | | | | -0.008 (0.146) |
| $(AKP_{2015J} - AKP_{Base})$ | | -0.130 (0.085) | -0.133 (0.086) | -0.130 (0.084) | -0.132 (0.095) |
| R-squared | 0.258 | 0.290 | 0.295 | 0.300 | 0.290 |

Notes: Regressions include urbanization rate, share of university graduates and share of religious people as controls. Robust standard errors are in parentheses.*** p<0.01, ** p<0.05, * p<0.1.

Table 6A
Recovery – Marginal effects of SWB measures (interactions with economic variables in Table 6)

| | Avg. SWB int. w/ | | Pure SWB int. w/ | | Discont. int. w/ | |
|--|------------------|---------|------------------|---------|------------------|--------|
| | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. |
| Unemployment | -0.067 | -0.117 | -0.061 | -0.110 | -0.063 | -0.130 |
| Growth | 0.438* | 0.482** | 0.446* | 0.488** | 0.394* | 0.479* |
| Marginal Effect of Well-being Measure evaluated at values of Interacted Variable | | | | | | |
| at min. value | 0.008 | 0.007 | 0.003 | 0.010** | -0.351 | -0.120 |
| at mean value | 0.002 | 0.003 | 0.003 | 0.005 | -0.003 | -0.044 |
| at max. value | -0.006 | -0.008 | 0.003 | -0.012 | 0.437 | 0.195 |

Table 7
Recovery – Satisfaction with public services

| Dependent Variable: $(AKP_{2015N} - AKP_{2015J})$ | | | | | | |
|---|---------------------|--------------------|--------------------|---------------------|--------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Unemployment | -0.019 (0.122) | -0.012 (0.115) | 0.010 (0.117) | -0.022 (0.122) | -0.024 (0.114) | 0.013 (0.117) |
| Growth | 0.536** (0.230) | 0.545** (0.226) | 0.588** (0.238) | 0.496** (0.240) | 0.523** (0.230) | 0.540** (0.244) |
| Avg.ELQ | 0.005 (0.006) | 0.006 (0.006) | 0.005 (0.006) | 0.006 (0.005) | 0.007 (0.006) | 0.007 (0.005) |
| Avg. Health | 0.011** (0.005) | | | | | |
| Avg. Educ | | 0.009 (0.006) | | | | |
| Avg. Secur | | | 0.010* (0.006) | | | |
| % Unsat.-Health | | | | -0.195** (0.093) | | |
| % Unsat.-Educ | | | | | -0.152 (0.094) | |
| % Unsat.-Secur | | | | | | -0.255* (0.133) |
| $(AKP_{2015J} - AKP_{Base})$ | -0.202** (0.090) | -0.175* (0.092) | -0.170* (0.088) | -0.202** (0.089) | -0.181* (0.093) | -0.184** (0.089) |
| R-squared | 0.342 | 0.330 | 0.332 | 0.344 | 0.335 | 0.342 |

Notes: Regressions include urbanization rate, share of university graduates and share of religious people as controls. Robust standard errors are in parentheses.*** p<0.01, ** p<0.05, * p<0.1.

Table 7A
 Recovery – Marginal effects of satisfaction with public services (interactions with economic variables in Table 7)

| | Avg. Health int. w/ | | Avg. Educ int. w/ | | Avg. Secur int. w/ | | Un.Health int. w/ | | Un.Educ int. w/ | | Un.S Secur int. w/ | |
|--|---------------------|----------|-------------------|---------|--------------------|---------|-------------------|-----------|-----------------|---------|--------------------|---------|
| | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. | Growth | Unemp. |
| Unemployment | -0.024 | 0.079 | -0.011 | 0.119 | 0.009 | 0.063 | -0.016 | 0.095 | -0.021 | 0.002 | 0.015 | 0.036 |
| Growth | 0.528** | 0.494** | 0.554** | 0.532** | 0.592** | 0.550** | 0.491** | 0.491** | 0.548** | 0.548** | 0.537** | 0.537** |
| Marginal Effect of Well-being Measure evaluated at values of Interacted Variable | | | | | | | | | | | | |
| at min. value | 0.019** | -0.001 | 0.011 | -0.003 | 0.008 | 0.003 | -0.405** | 0.089 | -0.225 | -0.021 | -0.314 | -0.110 |
| at mean value | 0.010 | 0.010** | 0.009 | 0.010** | 0.010 | 0.009* | -0.183* | -0.188*** | -0.154* | -0.132 | -0.256* | -0.215 |
| at max. value | -0.002 | 0.050*** | 0.006 | 0.054** | 0.013 | 0.028* | 0.097 | -1.067*** | -0.064 | -0.483 | -0.183 | -0.546 |

We have also repeated our analysis for the major opposition. The election results indicate that voters considered the Republican People's Party (CHP) in the west and the People's Democratic Party (HDP) in the east as the alternative to the AKP (and MHP). Hence, we combined vote shares of these parties and formed our dependent variable. Once again, our findings (shown in Tables S13-S18 in the online supplement) concur with the conclusions above, although the sign of the coefficients is reversed.

5. Concluding remarks

Political agency models are based on a principal-agent framework between the voters and the incumbent government. Whether they emphasize moral hazard or adverse selection problems, they are centered on retrospective voting, that is, the electorate cannot directly observe the actions or competence of the incumbent government and makes judgments based on observable outcomes. Most empirical tests of these models use economic variables as the outcomes that voters are more likely to take into account. Recently, there is growing interest from governments and international institutions in subjective well-being and whether these measures can be integrated along with economic ones to understand the voting behavior of the general public. In this paper we tested the promise of such considerations in Turkey.

Our findings indicate that subjective well-being has some bearing on how people have voted in Turkey in the June 2015 elections. Although the possibility of reverse causality makes it harder to make a case for average well-being, our measure of "discontent" comes out as a strong predictor. In other words, voters with lower subjective well-being are more likely to punish the incumbent.

We have also used a set of measures of satisfaction with public services provided by the central government. We find that Turkish voters are more responsive to specific services and policies of the government. In fact, satisfaction with certain public services turns out to be more important than general well-being.

As expected, neither economic nor well-being measures have any predictive power when the elections are held under special conditions, such as the November 2015 election in Turkey. While we cannot provide direct evidence, our finding that the share of university graduates and religious people are the only significant correlates with vote shares indicates that ideological stances and polarization become more important in such circumstances.

It should also be noted that our findings are limited due to data availability. There is a time difference between elections and when subjective well-being data are collected. We rely on findings of earlier research that reported that the well-being of individuals does not change significantly over time. We also had to use provincial averages rather than individual level data, a promising venue for future research. Ward (2020) shows that his findings using aggregated well-being are in line with those based on individual well-being data for Germany and Britain. We do not suspect that this observation would be any different for the Turkish case.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.ecosys.2023.101096](https://doi.org/10.1016/j.ecosys.2023.101096).

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