Unfulfilled Winning Expectations Decrease Voter Satisfaction with Democracy

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Abstract

Every vote creates winners and losers, opening a satisfaction gap between the two. At a time when concerns are high for democracy, we do not know what exactly leaves substantial proportions of voters—losers—dissatisfied with the system. This paper provides causal evidence for the cognitive dissonance theory, which points at unfulfilled winning expectations. With a difference-in-differences design around the Brexit referendum, it finds that the result caused an additional 3% decrease in the Remainers' satisfaction if they were expecting to win the vote. The gap grows with the strength of expectations, and the losers to whom the result came as a complete surprise experienced almost a three times larger decrease in satisfaction, compared to the Remainers who were sure they would lose. If winning expectations affect how dissatisfied losers become after votes, then those who set expectations about voting outcomes have responsibilities for the stability of democracy.

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Introduction

Rarely is there so robust a finding in political science as the winner-loser gap. Studies one after another show that elections affect the voters' satisfaction with democracy—those voting for the winners leave the ballot box more satisfied with the way democracy works than those voting for the losers (Anderson, Blais, Bowler, Donovan, and Listhaug, 2005; Anderson and Guillory, 1997; Bol, Blais, Gillard, Lopez, and Pilet, 2018; Conroy-Krutz and Kerr, 2015; Henderson, 2008; Norris, 1999; Rich and Treece, 2018; Singh, Karakoç, and Blais, 2012; Singh, Lago, and Blais, 2011). It is all well and good if the winners are pleased, but dissatisfaction among the latter is of particular concern as the legitimacy of political decisions depends first and foremost on losers' consent (Anderson et al., 2005). Lose that consent, and the stability of democracy comes under threat (Anderson et al., 2005; Powell, 1982).

With democratic stability at stake, it is hard to underline the importance of understanding the losers' dissatisfaction enough. What do we already know? First, losers might be dissatisfied because they are unlikely to see their preferred policies implemented in the near future (Anderson et al., 2005, pp. 23–25). From this utilitarian perspective, it stands to reason then if the winner-loser gap is smaller where the winners command less power—in consensual as opposed to majoritarian systems (Anderson and Guillory, 1997; Wells and Krieckhaus, 2006), in elections for legislators rather than for heads of government (Anderson and LoTempio, 2002), and in local compared to national elections (Henderson, 2008; Singh et al., 2011).[1] Second, the losers' dissatisfaction might at the same time be a psychological reaction (Anderson et al., 2005, pp. 25–26). People simply do not like to lose in general (Thaler, 1994). Specifically, political losers are 'told in rather unambiguous terms that the electorate [do] not share their opinions' (Granberg and Nanneman, 1986, p. 754), which can lead to cognitive dissonance (Festinger, 1957)—the psychological discomfort that emerges as a result of conflicting beliefs, ideas, or values. Indeed, elections bring out negative emotions such sadness in losers (Pierce,

[1] However, see also Blais and Gélineau (2007), who find that the local elections matter as much as national ones for the winner-loser gap.

Rogers, and Snyder, 2016). Yet, despite all this suggestive evidence, we still do not know what exactly decreases the losers' satisfaction with democracy.

This paper shows that unfulfilled expectations are one of the causes of dissatisfaction. This follows from the idea that, beside the conflict between the opinions of the winners and losers, voting creates an additional conflict specifically in unexpected losers—between their beliefs about the electorate and what that electorate decides on the polling day (Beasley and Joslyn, 2001; Granberg and Nanneman, 1986). Unexpected information as such is a known source of cognitive dissonance, especially if it disconfirms prior beliefs (Festinger, 1957, pp. 158–162; Granberg and Nanneman, 1986). Hence, the theory 'suggests a central role for expectations' in losers' satisfaction with democracy (Anderson et al., 2005, p. 11), but this remains to be confirmed. In fact, the two studies on this question find no evidence for the role of expectations: unexpected losers seem no more dissatisfied with democracy than expected losers in Canadian federal (Blais and Gélineau, 2007) or US presidential (Hollander, 2014) elections. Nevertheless, given the theory behind the role expectations, 'clearly more work is needed to explore this question' (Blais and Gélineau, 2007, p. 435)

The evidence in this paper comes from the Brexit referendum. This is in contrast to the existing literature, which focuses almost exclusively on elections.[2] Referenda are not merely an alternative area where this paper can extend the existing evidence to, they also have a key advantage to study the winner-loser gap: unlike in elections (Singh et al., 2012; Stiers, Daoust, and Blais, 2018),[3] here the distinction between winners and losers is crystal clear—in the Brexit case, where voters casted a ballot for either to leave or remain in the European

[2]A notable exception is Marien and Kern (2018), who analyse the change in 'how democratic [winners and losers] think [their] city is currently governed' around a local referendum on traffic circulation in a neighbourhood with 7700 voters.

[3]Unclarity in elections arises as one can define winners and losers in many different ways. For example, the winners could be those who vote for the party that forms the government (Anderson et al., 2005, pp. 33–34) or for the candidate who becomes the head of state (Anderson and LoTempio, 2002; Hollander, 2014), one that increases its vote share (Meer and Steenvoorden, 2018; Stiers et al., 2018), or enters the legislature (Singh et al., 2012). Adding to this unclarity is that winners at one level of competition (e.g., in constituency or district races) could at the same time be the losers of another (e.g., at national or presidential levels) (Blais and Gélineau, 2007; Henderson, 2008; Rich and Treece, 2018).

Union (EU), Leavers became the winners, and Remainers the losers, of the referendum. British Election Study (BES) had surveyed some of these voters repeatedly for over two years before the referendum, measuring their satisfaction with democracy on seven occasions. With another survey immediately afterwards, this data allows an analysis of the difference in differences (in the average satisfaction; between the expected and unexpected losers, before and after the referendum) in a quasi-experimental design. Hence the paper provides causal evidence for the role of expectations on the losers' dissatisfaction.

The results show that unfulfilled winning expectations decrease voter satisfaction with democracy. Following the Brexit referendum, losers became less satisfied with the way democracy works in the UK, no matter what result they expected before the referendum. However, the unexpected losers experienced an additional, 3% decrease on top of the decrease among expected losers.

Referendum Context

Prime Minister David Cameron pledged a referendum on the UK's membership to the EU, if the Conservatives win the General Election of 2015—and they did, in 'one of the most unexpected election victories' in the history of the country (Cowley and Kavanagh, 2016, p. 2). Hence the Brexit referendum was held on 23 June 2016, when 17.4 million people (51.9%) won the vote for the UK to leave the EU, against the 16.1 million (48.1%) voting to remain in the Union. Detailed accounts of this series of events is available elsewhere (see, for example, Cowley and Kavanagh, 2016, 2018; Evans and Menon, 2017).

Yet two aspects of the referendum are worth noting here. The first is the winner-loser gap that shaped after the referendum. As Figure 1 shows, immediately before the referendum, Leavers were slightly less satisfied with democracy in the UK than the Remainers were. This reverses in the days following the referendum, and there emerges a gap bigger than at anytime

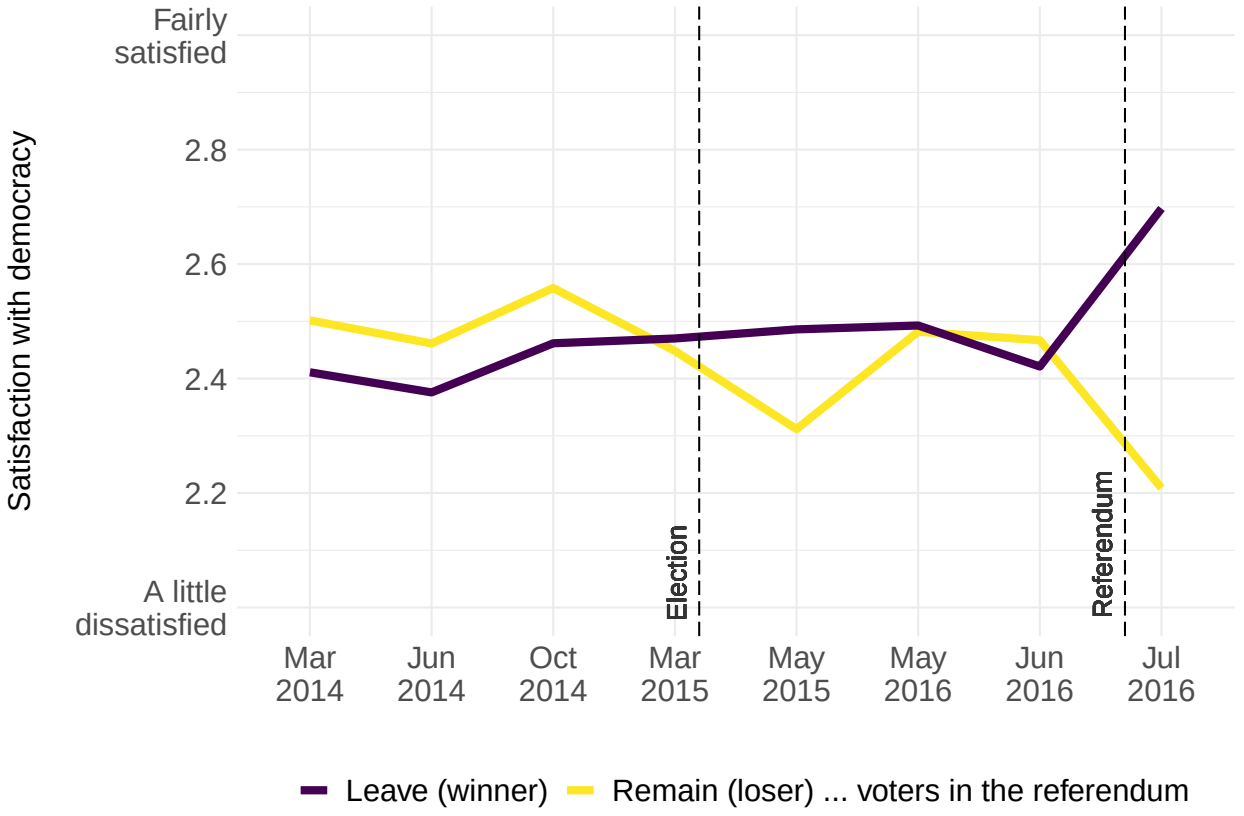

Figure 1: Satisfaction with democracy among the winners and losers in the Brexit referendum. Source: British Election Study; balanced panel, weighted to ensure the sample is representative of the general population.

in at least over two years.[4] Therefore, it is possible to analyse the cause of winner-loser gap on satisfaction with democracy in the Brexit referendum case.

A second aspect that makes the Brexit referendum a suitable context for analysing the role of expectations in the winner-loser gap is the uncertainty around the result leading up to the vote. Figure 2 plots the opinion poll predictions in the campaign period, portraying an indecisive picture. In the last month alone, the overall prediction changed twice, with most of the final polls predicting a slight advantage for remain. Given that the average mean error in the run up to the elections is about 2–3 points (Jennings and Wlezien, 2018), most polls

[4]It is also apparent in the figure that there was a similar, albeit much smaller cross-cutting movement, around the general election of 2015. This could have emerged if the winners of the Referendum were also more likely to be the winners of that election. Many believe that this was indeed the case, and the pledge to hold the referendum was seen as 'a key element' in the Conservatives victory in 2015 (Glynn and Menon, 2018, p. 22).

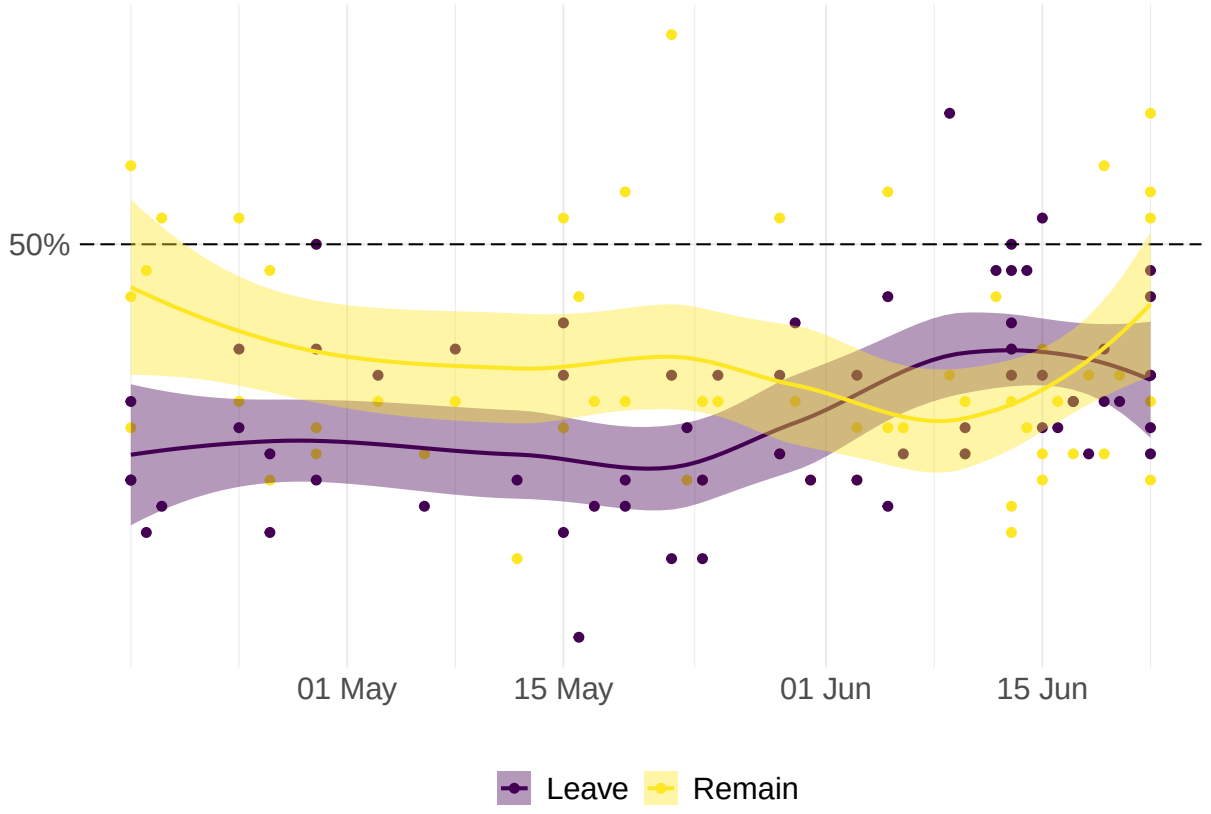

Figure 2: Polling movement in the campaign period before the referendum. Source: Financial Times[6]

pointed to 'a close referendum that neither side could be sure of winning' (British Polling Council, 2016). Moreover, adding to this uncertainty was the opinion polling 'crisis' in the UK, triggered by the 'fundamentally wrong' predictions of the 2015 general election (Cowley and Kavanagh, 2016, p. 2). Overall, this uncertainty made the result of the referendum as good as random; before the referendum, it was not possible to tell whose expectations were to be met and whose to be shuttered.

[6]Visit https://ig.ft.com/sites/brexit-polling/.

BES Internet Panel Data

The claims in this analysis are based on data from the BES Internet Panel—a publicly available study, conducted by YouGov.[7] Since its first wave in March 2014,[8] the panel of around 30,000 respondents has been surveyed repeatedly in the UK. The referendum day—23 June 2016—was bracketed with two separate waves, with wave 8 (June 2016) ending the day before the referendum and wave 9 (July 2016) starting the day after it. Having two waves around the referendum so close together should also be helpful in minimising the risk that unobserved events might be affecting the results. In this setting, therefore, wave 9 takes place in the *Post-referendum* period while all the preceding waves are in pre-referendum. Despite panel non-response and drop-outs, the overall retention rate (33.6%) is relatively high, and 10,170 respondents participated in all of these nine waves.

To analyse whether unfulfilled expectations has an effect on the decrease in satisfaction with democracy, the scope of the analysis is limited to those who declared to have voted for remaining in the EU. In the survey, these are the respondents who answered 0 = 'Remain in the EU' to the question 'How did you vote in the EU referendum?' (*profile_eurefvote*). Hence, those who answered 1 = 'Leave the EU' are excluded from the analysis below.

The dependent variable is the satisfaction with democracy in the UK. This relies on the item (*satDemUK*) asking 'on the whole, how satisfied or dissatisfied are [the respondents] with the way that democracy works in the UK as a whole?', with the following response categories: 1 = 'very dissatisfied', 2 = 'a little dissatisfied', 3 = 'fairly dissatisfied', and 4 = 'very satisfied'.[9]

The *Treatment* variable is the unfulfilled expectation about the result of the referendum, that is, for the Remainers, the expectation that the remain camp would win. The data for this

[7] Visit www.britishelectionstudy.com for the data and www.yougov.co.uk for the research company.

[8] Most BES Internet Panel waves are conducted over two months. For the reasons of simplicity, the text and graphs mention only the last month that each wave was in the field.

[9] This item appeared in all waves except for wave 5 (May 2015), which is therefore excluded from the analysis. Also note that, for this and all other variables in the analysis, the response category 'Don't know' is coded as missing.

variable comes from the wave immediately before the referendum (*euRefExpectation* in wave 8), asking 'how likely do [the respondents] think it is that the UK will vote to leave the EU?', between 0 = 'UK will definitely vote to remain in the EU' and 100 = 'UK will definitely vote to leave in the EU'.

The dataset also includes a number of relevant pre-treatment variables, and the following items are used as control variables in the analysis: *age*, *gender*, *country*, *education*, income (*profile_gross_personal*) political attention (*polAttention*), and referendum interest (*euRefInterest*). Note that these variables are not only potentially relevant for the effect of expectation but they are also likely to be predictive of inclusion in the survey in the first place.

Difference-in-Differences Strategy

There might be a myriad of factors that affect people's electoral expectations *and* their satisfaction with democracy. At best, one can only control for the observable confounders, while the unobservables continue to pose a challenge to estimate the causal relationships. The BES data in the referendum context is helpful to address this challenge, as it provides data on the same individuals at various points in time, where the referendum result goes against the expectations of a known subset of remain voters. This allows a difference-in-differences design, where we can compare the differences in satisfaction among the Remainers expecting to win (the treatment group) before and after the referendum to the same differences among the Remainers expecting to lose (the control group). Therefore, the following regression equation forms the basis of the analysis:

$$\begin{aligned} Satisfaction_i = &\beta_0 + \beta 1 * Post\text{-}referendum_i + \beta 2 * Treatment_i + \\ &\beta 3 * (Post\text{-}referendum_i * Treatment_i) + e_i \end{aligned}$$

The reliability of this design depends on the parallel trend assumption. In practice, this assumes that in the absence of the referendum result, the two groups would be comparable

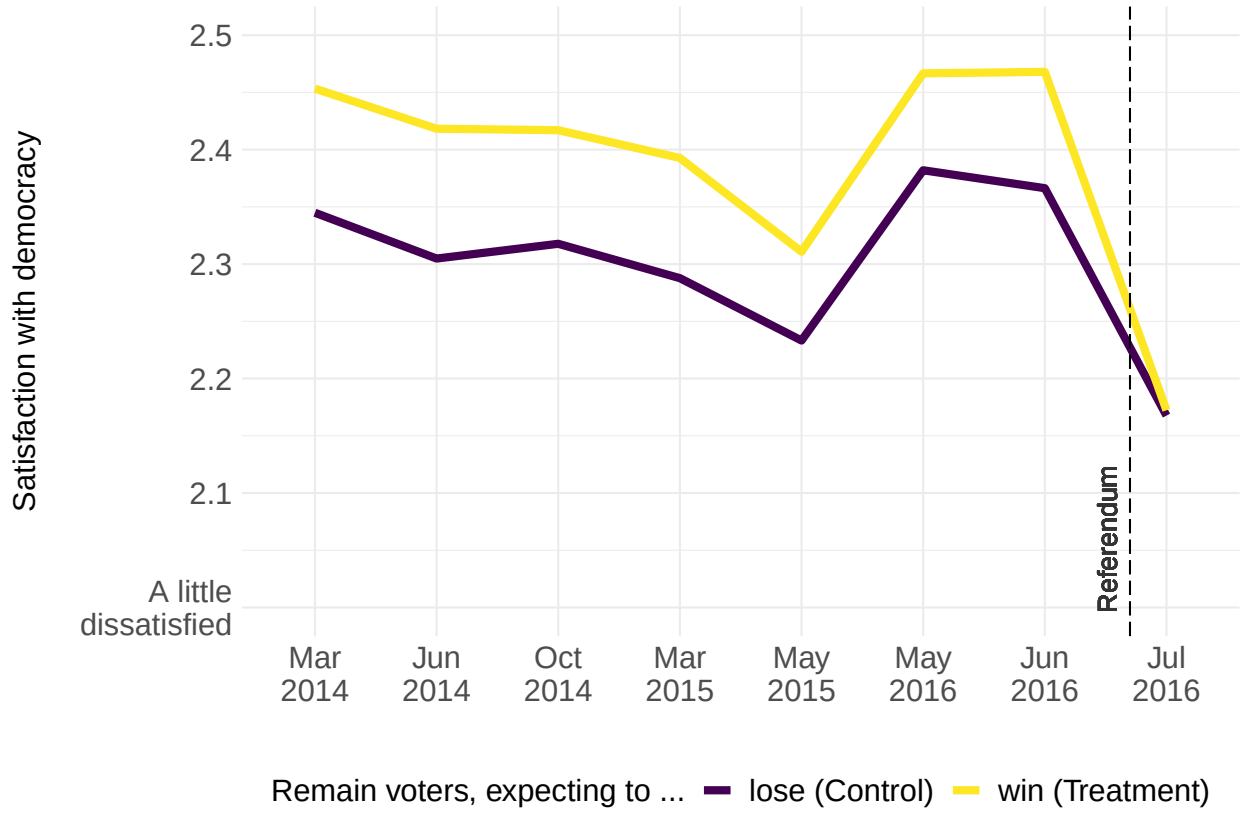

Figure 3: Satisfaction trends for the treatment and control groups.

in terms of their satisfaction with democracy. Figure 3 plots the average levels of satisfaction with democracy among the treatment and control groups before and immediately after the referendum. Although the treatment group had been more satisfied with democracy than the control group prior to the referendum, the trends that the two groups follow had been remarkably similar—until the referendum, after which the gap closes for the first time in the period under analysis. Note that there appears to be a slight differentiation between the treatment and control groups immediately before the referendum. This could have emerged due to expectations as well, because those who expect to lose might have reacted the upcoming result before the referendum (Anderson et al., 2005, p. 40; Blais and Gélineau, 2007)

Results

Table 1 presents the main results in four regression models, where the *DiD* variable, standing for the interaction between *Post-referendum* and *Treatment*, is the difference-in-differences estimator. This estimator is negative and statistically significant across the models, meaning that, in comparison to the expected losers, the referendum caused a sharper decrease in satisfaction among the unexpected losers. According to Model 1, the expected losers became 6.9% less satisfied with democracy, a decrease from on average 2.32 (β_0) before the referendum to 2.16 ($\beta_0 + \beta_1$) afterwards. Among the unexpected losers, this decrease was from 2.42 ($\beta_0 + \beta_2$) to 2.16 ($\beta_0 + ... + \beta_4$), or about 10.7%. The other models in the table adjust the estimates with nation fixed effects and/or control variables, but the main result remains the same: unfulfilled winning expectations caused over 3% decrease in how much losers are satisfied with the way democracy works in the UK.

The remaining variables in the table confirm what is visible in Figure 3. The negative coefficients on *Post-referendum* underline that the expected losers (*Treatment* = 0) became less satisfied with democracy after the referendum (*Post-referendum* = 1) as well. In contrast, the positive coefficient on *Treatment* show that the unexpected losers (*Treatment* = 1) were more satisfied with democracy before the referendum (*Post-referendum* = 0).

Figure 4 provides results from three different checks on the robustness of these results, while the underlying tables are in the Appendix. First, to facilitate the interpretation of the results, above the dependent variable is treated as continuous although it is technically ordinal. In the top right facet of Figure 4, estimates from ordinal logistic regressions are plotted, showing that the results do not change. Clockwise, the models in the next facet increase the number of observations by including the data from respondents who reported their referendum expectations early, in wave 7 (May 2016) of the BES.[10] The final facet in bottom left does

[10]Incorporating the data from this wave can increase the number of observations for analysis, but it comes with the assumption that voter expectations are stable. Yet they were not: at least 24.7% of the respondents changed their expectations about the result of the referendum, almost equally in both directions, from May to June.

Table 1: Unfulfilled expectations decrease satisfaction with democracy

	(1)	(2)	(3)	(4)
Post-referendum	-0.16^{***}	-0.18^{***}	-0.18^{***}	-0.18^{***}
	(0.02)	(0.02)	(0.02)	(0.02)
Treatment	0.10^{***}	0.10^{***}	0.10^{***}	0.11^{***}
	(0.01)	(0.01)	(0.01)	(0.01)
DiD	-0.09^{***}	-0.09^{***}	-0.08^{**}	-0.08^{**}
	(0.02)	(0.02)	(0.03)	(0.02)
Constant	2.32^{***}	2.41^{***}	2.49^{***}	2.58^{***}
	(0.01)	(0.01)	(0.03)	(0.03)
Nation FEs	No	Yes	No	Yes
Controls	No	No	Yes	Yes
Observations	59,932	59,123	45,121	45,121
R^2	0.01	0.04	0.05	0.07

Note: Models are calculated with ordinary least squares regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy in the UK. Control variables political attention, Brexit interest, age, education, female, and income. Nations are England (base category), Scotland, and Wales. See Table A1 in the Appendix. ** $p < 0.01$, *** $p < 0.001$.

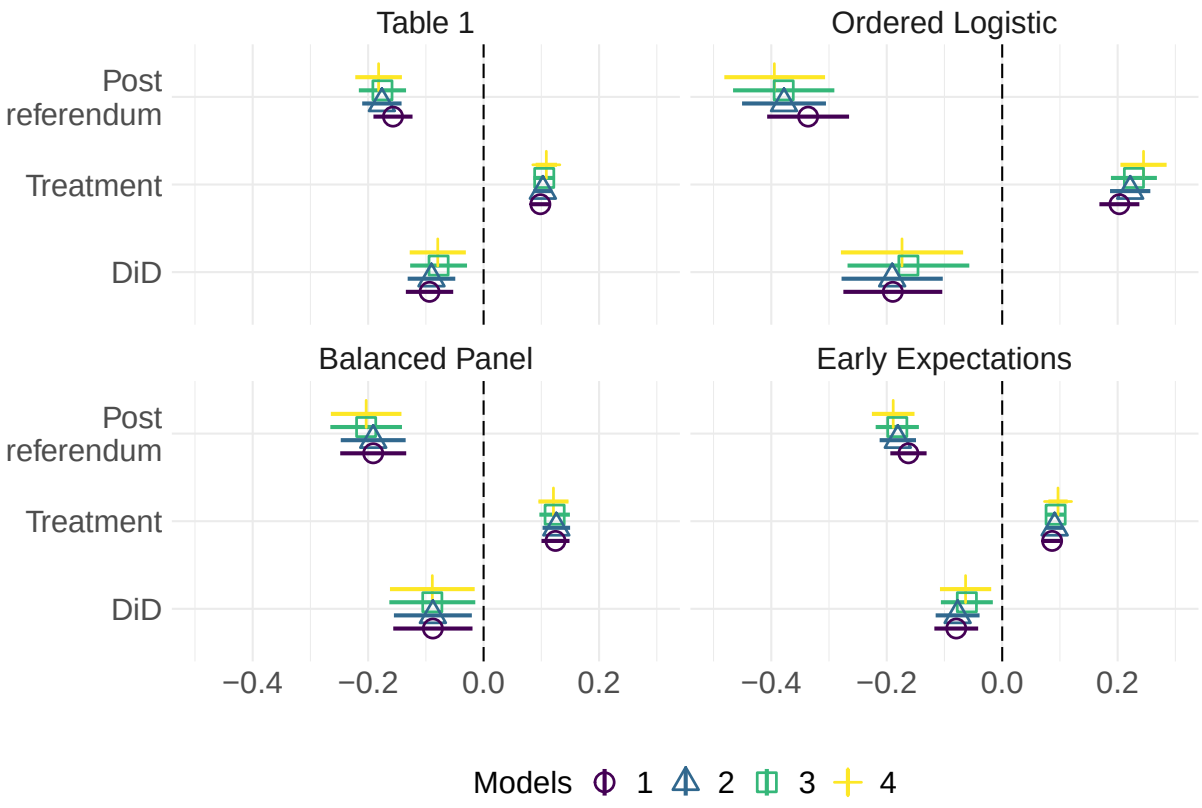

Figure 4: Main results in different specifications.

the opposite: it limits the observations to those who participated in all survey waves. Neither of them changes the main result that unfulfilled expectations decreases voter satisfaction with democracy.

Conditional results

The analysis so far has been over a binary variable, *Treatment*, coded as 1 when leave voters thought the UK would vote to remain in the EU, and otherwise as 0. This simplification has drawbacks as much as advantages. Specifically, it ignores exactly how likely the respondents thought the UK would vote remain or leave. Taking this variation into account, Figure 5 reports the average marginal effect of expectations that the UK would remain in the EU, on leave voters' satisfaction with democracy. This stems from the re-estimation of Model 4, where the binary *Treatment* variable is replaced with the underlying continuous data

(*euRefExpectation*), and the Appendix has the complete table.[11]

First, we see that no matter what the respondents expected about the result, the average marginal effects are below zero, confirming that both groups of leave voters became less satisfied with democracy after the referendum. Yet, there is a negative slope: higher expectations for the UK to vote to remain in the EU caused a larger negative effect on the satisfaction levels. For example, the average marginal effect of thinking the result could go equally either way (those who thought the likelihood of a remain result was 0.5) was a 0.21 point decrease. Among those who did not expect the result at all (those who thought it was 100 percent likely that the UK would vote to remain in the EU), in comparison, the decrease is estimated to be –0.31, which is 12.5% lower than their average satisfaction before the referendum. Among those who thought leave would definitely win, this decrease was only 4.6%. Hence, when we compare only those who were completely confident in their expectations about the result of the referendum, unexpected losers experienced almost a threefold higher decrease in satisfaction than the expected losers.

Conclusion

We know that voting leaves a winner-loser gap in how much voters are satisfied with democracy, but we do not know why. This paper provided causal evidence for the role of expectations in this gap. It showed that if losers thought they would win a vote, the unexpected result causes a significantly larger decrease in their satisfaction with democracy, compared to those who thought they would lose it. In the Brexit referendum, unfulfilled winning expectations accounted for on average a 3% decrease in satisfaction with democracy. The effect increases to just under three times what sure losers experience if we look at those to whom the result came as a complete surprise. This confirms a key assumption in the cognitive dissonance theory that unfulfilled expectations can cause psychological stress for people.

[11]For the sake of easy interpretation, I have reversed the original scale of likelihood to *leave* the EU (*euRefExpectation*) into likelihood to *remain* in the EU for this part of the paper.

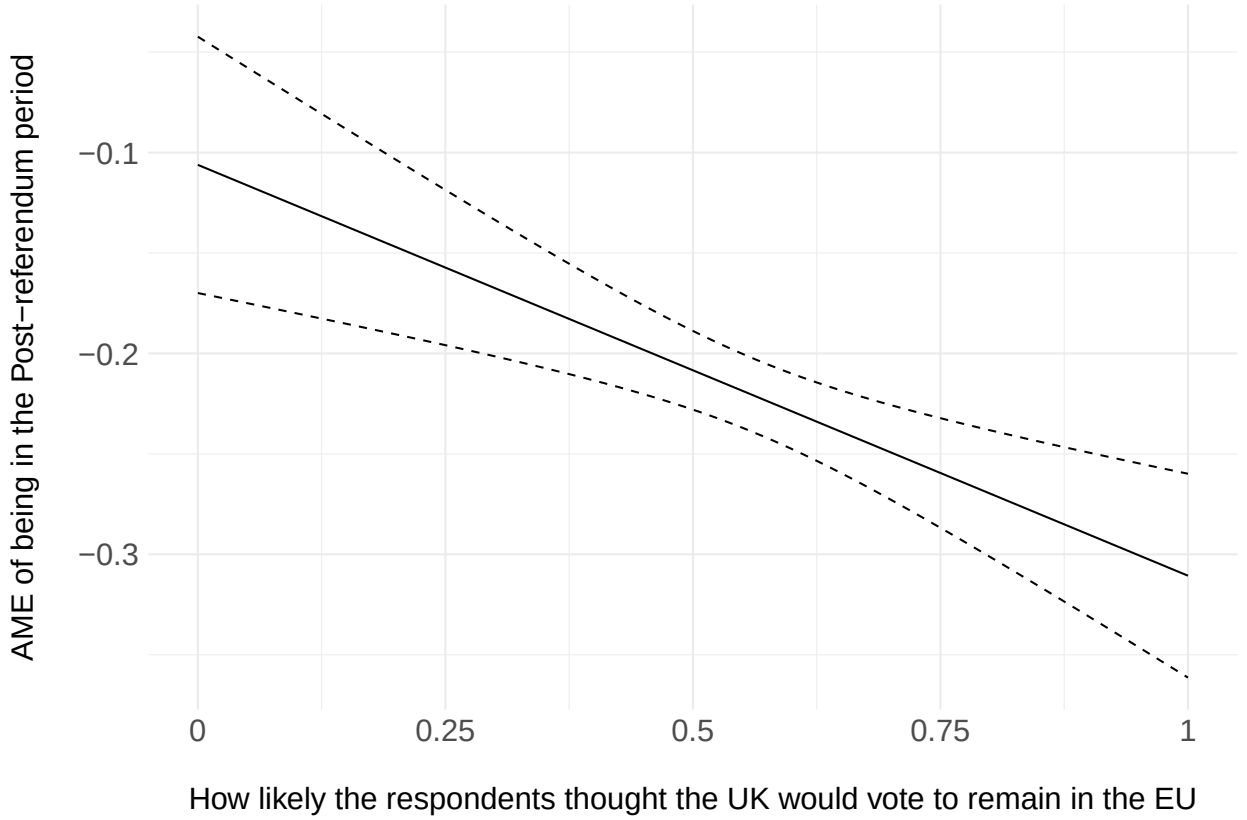

Figure 5: The average marginal effect of referendum on the losers' satisfaction, accross different levels of expectations.

These results underline the importance of accurate information on potential voting results for democracy. If unfulfilled winning expectations decrease voter satisfaction, then those set such expectations have responsibilities for the stability of democracy. First, this concerns the forecasters such as opinion pollsters, who affect what people expect about voting results (Blais and Bodet, 2006). Pollsters have an important role; for when voters lack information about the result of an upcoming vote, they make assumptions that are biased towards their own candidate (Granberg and Brent, 1983). The findings of this paper suggests that accurate forecasts can help democracy. Second, the implied responsibility concerns the broadcasters, including the pundits and politicians as well as the media in general. No matter how accurate polling information is, the way this information is represented affects what people expect from votes (Searles, Smith, and Sui, 2018). As people learn about the forecasts through these broadcasters, the findings of this paper imply that their misrepresentation have repercussions for democracy.

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Appendix

Complete Results

This section provides the complete results, respectively for Table 1 and Figure 5 in the main text.

Table A1: Complete results for Table 1

	(1)	(2)	(3)	(4)
Post-referendum	-0.16^{***}	-0.18^{***}	-0.18^{***}	-0.18^{***}
	(0.02)	(0.02)	(0.02)	(0.02)
Treatment	0.10^{***}	0.10^{***}	0.10^{***}	0.11^{***}
	(0.01)	(0.01)	(0.01)	(0.01)
DiD	-0.09^{***}	-0.09^{***}	-0.08^{**}	-0.08^{**}
	(0.02)	(0.02)	(0.03)	(0.02)
Attention			-0.07^{***}	-0.07^{***}
			(0.002)	(0.002)
Interest			0.06^{***}	0.04^{***}
			(0.01)	(0.01)
Age			0.003^{***}	0.004^{***}
			(0.0003)	(0.0003)
Education			-0.02^{***}	-0.01^{***}
			(0.001)	(0.001)
Female			0.12^{***}	0.11^{***}
			(0.01)	(0.01)
Income			0.03^{***}	0.03^{***}
			(0.001)	(0.001)
Scotland		-0.36^{***}		-0.34^{***}
		(0.01)		(0.01)
Wales		-0.15^{***}		-0.12^{***}
		(0.01)		(0.01)
Constant	2.32^{***}	2.41^{***}	2.49^{***}	2.58^{***}
	(0.01)	(0.01)	(0.03)	(0.03)
Observations	59,932	59,123	45,121	45,121
R^2	0.01	0.04	0.05	0.07

Note: Models are calculated with ordinary least squares regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy in the UK. ** p < 0.01, *** p < 0.001.

Table A2: Complete results for Figure 5

	(1)	(2)	(3)	(4)
Post-referendum (PR)	-0.11^{**}	-0.13^{***}	-0.13^{***}	-0.14^{***}
	(0.03)	(0.03)	(0.04)	(0.04)
Remain Expectation (RE)	0.003^{***}	0.003^{***}	0.003^{***}	0.003^{***}
	(0.0002)	(0.0002)	(0.0003)	(0.0003)
PR * RE	-0.002^{***}	-0.002^{***}	-0.002^{**}	-0.002^{**}
	(0.001)	(0.001)	(0.001)	(0.001)
Attention			-0.07^{***}	-0.07^{***}
			(0.002)	(0.002)
Interest			0.06^{***}	0.03^{***}
			(0.01)	(0.01)
Age			0.003^{***}	0.004^{***}
			(0.0003)	(0.0003)
Education			-0.02^{***}	-0.01^{***}
			(0.001)	(0.001)
Female			0.11^{***}	0.11^{***}
			(0.01)	(0.01)
Income			0.03^{***}	0.03^{***}
			(0.001)	(0.001)
Scotland		-0.36^{***}		-0.34^{***}
		(0.01)		(0.01)
Wales		-0.15^{***}		-0.12^{***}
		(0.01)		(0.01)
Constant	2.24^{***}	2.31^{***}	2.45^{***}	2.51^{***}
	(0.01)	(0.01)	(0.03)	(0.03)
Observations	64,965	64,087	48,760	48,760
R^2	0.01	0.04	0.05	0.07

Note: Models are calculated with ordinary least squares regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy. ** $p < 0.01$, *** $p < 0.001$.

Robustness Checks

Models in different specifications

In the main text, Figure 4 plots results from three robustness checks in addition to the main results. This section provides the underlying tables for these checks.

Table A3: Ordered logistic regression models

	(1)	(2)	(3)	(4)
Post-referendum	-0.34^{***}	-0.38^{***}	-0.38^{***}	-0.39^{***}
	(0.04)	(0.04)	(0.04)	(0.04)
Treatment	0.20^{***}	0.22^{***}	0.23^{***}	0.24^{***}
	(0.02)	(0.02)	(0.02)	(0.02)
DiD	-0.19^{***}	-0.19^{***}	-0.16^{**}	-0.17^{**}
	(0.04)	(0.04)	(0.05)	(0.05)
Attention			-0.16^{***}	-0.15^{***}
			(0.01)	(0.01)
Interest			0.13^{***}	0.08^{***}
			(0.02)	(0.02)
Age			0.01^{***}	0.01^{***}
			(0.001)	(0.001)
Education			-0.04^{***}	-0.03^{***}
			(0.002)	(0.002)
Female			0.25^{***}	0.23^{***}
			(0.02)	(0.02)
Income			0.06^{***}	0.05^{***}
			(0.003)	(0.003)
Scotland		-0.76^{***}		-0.75^{***}
		(0.02)		(0.02)
Wales		-0.31^{***}		-0.27^{***}
		(0.03)		(0.03)
Observations	59,932	59,123	45,121	45,121

Note: Models are calculated with ordered logistic regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy in the UK. *** $p < 0.001$.

Table A4: Models with balanced panel

	(1)	(2)	(3)	(4)
Post-referendum	-0.19^{***}	-0.19^{***}	-0.20^{***}	-0.20^{***}
	(0.03)	(0.03)	(0.03)	(0.03)
Treatment	0.12^{***}	0.13^{***}	0.12^{***}	0.12^{***}
	(0.01)	(0.01)	(0.01)	(0.01)
DiD	-0.09^{*}	-0.09^{*}	-0.09^{*}	-0.09^{*}
	(0.04)	(0.03)	(0.04)	(0.04)
Attention			-0.07^{***}	-0.07^{***}
			(0.004)	(0.004)
Interest			0.05^{***}	0.02
			(0.01)	(0.01)
Age			0.004^{***}	0.004^{***}
			(0.0004)	(0.0004)
Education			-0.02^{***}	-0.01^{***}
			(0.001)	(0.001)
Female			0.10^{***}	0.09^{***}
			(0.01)	(0.01)
Income			0.03^{***}	0.03^{***}
			(0.002)	(0.002)
Scotland		-0.40^{***}		-0.37^{***}
		(0.01)		(0.01)
Wales		-0.10^{***}		-0.04^{*}
		(0.02)		(0.02)
Constant	2.29^{***}	2.39^{***}	2.49^{***}	2.64^{***}
	(0.01)	(0.01)	(0.05)	(0.05)
Observations	27,968	27,968	22,776	22,776
R^2	0.01	0.04	0.05	0.08

Note: Models are calculated with ordinary least squares regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy in the UK. * p < 0.05, ** p < 0.01, *** p < 0.001.

Table A5: Models including early expectations

	(1)	(2)	(3)	(4)
Post-referendum	-0.16^{***}	-0.18^{***}	-0.18^{***}	-0.19^{***}
	(0.02)	(0.02)	(0.02)	(0.02)
Treatment	0.09^{***}	0.09^{***}	0.09^{***}	0.10^{***}
	(0.01)	(0.01)	(0.01)	(0.01)
DiD	-0.08^{***}	-0.08^{***}	-0.06^{**}	-0.06^{**}
	(0.02)	(0.02)	(0.02)	(0.02)
Attention			-0.07^{***}	-0.07^{***}
			(0.002)	(0.002)
Interest			0.06^{***}	0.03^{***}
			(0.01)	(0.01)
Age			0.003^{***}	0.004^{***}
			(0.0002)	(0.0002)
Education			-0.02^{***}	-0.01^{***}
			(0.001)	(0.001)
Female			0.11^{***}	0.10^{***}
			(0.01)	(0.01)
Income			0.03^{***}	0.03^{***}
			(0.001)	(0.001)
Scotland		-0.36^{***}		-0.35^{***}
		(0.01)		(0.01)
Wales		-0.16^{***}		-0.14^{***}
		(0.01)		(0.01)
Constant	2.33^{***}	2.42^{***}	2.51^{***}	2.60^{***}
	(0.01)	(0.01)	(0.03)	(0.03)
Observations	72,112	71,303	54,738	54,738
R^2	0.01	0.04	0.05	0.08

Note: Models are calculated with ordinary least squares regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy in the UK. ** p < 0.01, *** p < 0.001.

Models with bootstrapped standard errors

Serially correlated outcomes might lead to inconsistent standard errors in difference-in-difference models, where bootstrapping can be helpful (Bertrand, Duflo, and Mullainathan, 2004). Table A6 provides models with bootstrapped standard errors, showing that the results reported in the main text are robust to this test.

Table A6: Models with bootstrapped standard errors

	(1)	(2)	(3)	(4)
Post-referendum	-0.16^{***}	-0.18^{***}	-0.18^{***}	-0.18^{***}
	(0.02)	(0.02)	(0.02)	(0.02)
Treatment	0.10^{***}	0.10^{***}	0.10^{***}	0.11^{***}
	(0.01)	(0.01)	(0.01)	(0.01)
DiD	-0.09^{***}	-0.09^{***}	-0.08^{**}	-0.08^{**}
	(0.02)	(0.02)	(0.03)	(0.03)
Attention			-0.07^{***}	-0.07^{***}
			(0.00)	(0.00)
Interest			0.06^{***}	0.04^{***}
			(0.01)	(0.01)
Age			0.00^{***}	0.00^{***}
			(0.00)	(0.00)
Education			-0.02^{***}	-0.01^{***}
			(0.00)	(0.00)
Female			0.12^{***}	0.11^{***}
			(0.01)	(0.01)
Income			0.03^{***}	0.03^{***}
			(0.00)	(0.00)
Scotland		-0.36^{***}		-0.34^{***}
		(0.01)		(0.01)
Wales		-0.15^{***}		-0.12^{***}
		(0.01)		(0.01)
Constant	2.32^{***}	2.41^{***}	2.49^{***}	2.58^{***}
	(0.01)	(0.01)	(0.03)	(0.03)
Observations	59932	59123	45121	45121
Replications	1000	1000	1000	1000
R^2	0.01	0.04	0.05	0.07

Note: Models are calculated with ordinary least squares regressions. Bootstrapped standard errors are in parentheses. The dependent variable is the satisfaction with democracy. ** p < 0.01, *** p < 0.001.

Placebo outcome: Satisfaction with democracy in the EU

The BES Internet Panel repeats the satisfaction question for the EU as well (*satDemEU*), asking 'on the whole, how satisfied or dissatisfied are [the respondents] with the way that democracy works in the European Union', with the same response categories: 1 = 'very dissatisfied', 2 = 'a little dissatisfied', 3 = 'fairly dissatisfied', and 4 = 'very satisfied'.

This offers an opportunity for a placebo test (Rosenbaum, 2002, p. 214): because the referendum took place *in the UK*, we should find that the difference-in-differences estimator is insignificant with regard to the satisfaction with democracy *in the EU*. Otherwise, the validity of the research design would be questionable.

Table A7 provides the results from this placebo test, taking the satisfaction with democracy in the EU as the dependent variable. The results are most compatible with the null hypothesis: here the estimates are not only substantively smaller, but they are also statistically insignificant.

Table A7: Models explaining satisfaction with democracy in the EU

	(1)	(2)	(3)	(4)
Post-referendum	0.12***	0.12***	0.12***	0.12***
	(0.02)	(0.02)	(0.02)	(0.02)
Treatment	0.10***	0.10***	0.10***	0.10***
	(0.01)	(0.01)	(0.01)	(0.01)
DiD	−0.02	−0.01	−0.02	−0.02
	(0.02)	(0.02)	(0.02)	(0.02)
Attention			−0.01***	−0.01***
			(0.002)	(0.002)
Interest			0.02**	0.02**
			(0.01)	(0.01)
Age			−0.01***	−0.01***
			(0.0003)	(0.0003)
Education			−0.005***	−0.01***
			(0.001)	(0.001)
Female			0.18***	0.18***
			(0.01)	(0.01)
Income			−0.0001	0.001
			(0.001)	(0.001)
Scotland		0.03***		0.06***
		(0.01)		(0.01)
Wales		0.02		0.07***
		(0.01)		(0.01)
Constant	2.08***	2.07***	2.38***	2.36***
	(0.01)	(0.01)	(0.03)	(0.03)
Observations	56,371	55,616	42,602	42,602
R^2	0.01	0.01	0.03	0.03

Note: Models are calculated with ordinary least squares regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy in the EU. ** p < 0.01, *** p < 0.001.

Unfulfilled losing expectations among the winners

If—as it is maintained in the main text—that unexpected information causes cognitive dissonance and therefore leads to dissatisfaction, we should see a similar effect among the unexpected winners as well. To test whether this is the case, Table A8 reports the main models of analysis, repeated this time among the winners. These are the people who, while expecting to lose the referendum, voted to leave the EU—only to learn that they have in fact won.

The positive coefficients on *Post-referendum* show that the expected winners (*Treatment* = 0) were more satisfied with democracy after the referendum (*Post-referendum* = 1) compared with before. In contrast, the positive coefficients on *Treatment* show that, in the period before the referendum (*Post-referendum* = 0), the unexpected winners (*Treatment* = 1) were more satisfied with democracy than were the expected winners. Finally, the difference-in-difference estimator is negative and statistically significant across the models, meaning that, the increase in satisfaction levels, from before to after the referendum, was significantly smaller among the unexpected winners.

These results suggest that unfulfilled expectations have a negative effect on satisfaction with democracy, not only among the unexpected losers, but also among the unexpected winners.

Table A8: Models explaining satisfaction with democracy among the winners

	(1)	(2)	(3)	(4)
Post-referendum	0.29***	0.29***	0.29***	0.29***
	(0.01)	(0.01)	(0.01)	(0.01)
Treatment	0.03***	0.03***	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
DiD	−0.07***	−0.07***	−0.08**	−0.08**
	(0.02)	(0.02)	(0.02)	(0.02)
Attention			−0.02***	−0.02***
			(0.002)	(0.002)
Interest			0.01	0.005
			(0.01)	(0.01)
Age			0.002***	0.002***
			(0.0003)	(0.0003)
Education			−0.001	−0.001
			(0.001)	(0.001)
Female			0.10***	0.10***
			(0.01)	(0.01)
Income			0.03***	0.03***
			(0.002)	(0.002)
Scotland		−0.12***		−0.13***
		(0.01)		(0.01)
Wales		−0.04***		−0.01
		(0.01)		(0.01)
Constant	2.35***	2.36***	2.22***	2.24***
	(0.005)	(0.005)	(0.03)	(0.03)
Observations	61,105	60,352	42,952	42,952
R^2	0.01	0.02	0.02	0.02

Note: Models are calculated with ordinary least squares regressions. Standard errors are in parentheses. The dependent variable is the satisfaction with democracy in the EU. ** p < 0.01, *** p < 0.001.