



“Affective vs. Ideological Polarization in a Latin American Country: Evidence from two survey experiments”

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Affective vs. Ideological Polarization in a Latin American Country: Evidence from two survey experiments*

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Abstract

Using two online surveys conducted in Chile, we study in-depth polarization and the relationship between ideological and affective polarization in Latin America. We implemented them before two highly polarized elections: the 2021 presidential runoff and a 2022 plebiscite to approve the new Constitution. We embedded a 2x2 experiment in the presidential survey. In one arm, we showed a video highlighting positive, non-ideological biographical information about the opposing candidate, which aimed at reducing their affective polarization (Rogowski and Sutherland, 2016). On the other, a video provided information supporting the respondent's opposite position regarding taxes, aimed at moderating views on this issue. The plebiscite survey included two experiments. First, we randomly activated (short-lived) affective polarization with an open-ended priming question, based on Simonovits et al. (2022), to assess the effects on ideology and democratic views. Second, we asked respondents their agreement with two ideological statements made by speakers with varying voting preferences that we randomized. Descriptive data from both surveys show that ideological and affective polarization in Chile are moderately correlated, and unlike evidence from the US, left-wing citizens are more polarized, especially in affects. Overall, we find no consistent direct effects of manipulating affective polarization on ideological polarization, nor vice versa. However, when ideological positions are presented as said by a voter of the respondent's choice, agreement with the stance increases dramatically, and, in cases, more so if affective polarization had been enhanced by the treatment. Thus, while affective polarization does not induce polarization in ideology in the abstract, affective responses to partisanship are large when ideological stances come from a partisan speaker, as it happens in real life. Finally, we also find that affective polarization (i) positively correlate with intended turnout behavior, and (ii) undermines democratic attitudes, making polarization a sensitive matter for a region with weak democratic records.

Keywords: *Affective polarization, Ideology, Turnout, Democracy, Suvery experiment, Latin America*

JEL codes: D72, Z13

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1 Introduction

Recent presidential elections in Latin America have shown large ideological differences between the two runoff candidates –think of Brazil, Peru, Chile, and Colombia. At least in Chile, data from the Comparative National Elections Project shows greater ideological polarization than for previous elections, as well as higher than in the last elections in the U.S. and the U.K. (CNEP, 2022). Whether these polarized elections reflect increased polarization among the mass Latin American public (e.g., Fábrega et al., 2018) or a more persistent feature of Latin American politics (e.g., Murillo, 2022) remains unsettled. Furthermore, the consequences of polarization in the region have been largely unexplored.

Until recently, the study of polarization focused primarily on policy views –i.e., on ideological polarization. Despite increased ideological divergence among political elites (McCarty et al., 2006), there was an open debate whether the same was true of the mass public (contrast Abramowitz and Saunders (2008) with Fiorina and Abrams (2008)). While ideology remains a key dimension of polarization, following Iyengar et al. (2012)’s seminal work, polarization research has increasingly turned its attention to affective polarization, i.e. the animosity between parties, or the tendency to dislike and distrust those from the out-group. Since then, and likely fueled by the 2016 election, a burgeoning literature has explored the origins and consequences of affective polarization (e.g., Boxell et al., 2017; Druckman et al., 2018; Rogowski and Sutherland, 2016; Levendusky and Malhotra, 2016; Webster and Abramowitz, 2017; Axelrod et al., 2021; Kingzette et al., 2021; D. Broockman et al., 2020).

The concepts of ideological and affective polarization are distinct and, indeed, people who are affectively polarized –i.e., who despise those from the other party, in the U.S. context– do not necessarily hold radical issue positions (Iyengar et al., 2012; Mason, 2015; Bougher, 2017). Furthermore, while there is literature for U.S. that supports the existence of a causal relationship between both types of polarization (e.g. Rogowski and Sutherland, 2016; Webster and Abramowitz, 2017; Lelkes et al., 2017; Lelkes, 2018), there is also a counterpart that highlights the idea of a mere correlation, or in some cases no relationship some (Levendusky and Malhotra, 2016; Lelkes, 2018); Mason, 2018; Druckman et al., 2021). In addition, as far as we know, this issue has not been fully covered for Latin America nor mass public (in instead of partisans), and especially in terms of the causal relationship between these two types of polarization. Thus, more research is needed to understand the causal links between both, especially on how affective polarization impacts ideological polarization, which is less settled.

Second, and perhaps more consequentially, the behavioral effects of each type of polarization are not well understood: how do affective vs. ideological polarization map into voting behavior and democracy attitudes? In general, polarization is associated with higher turnout (Béjar et al., 2020; León, 2017; Wagner, 2021) and negative views towards democracy (Simonovits et al., 2022), but the evidence is generally associated with correlations, rather than causal relationships. Yet to the best of our knowledge there are no studies that look at this consequences of ideological vs. affective polarization that include experimental manipulations of both types of polarization. Moreover, we are not aware of experimental studies that distinguish between these types of polarization in Latin America.

With these aims, we conducted two online surveys, each including experiments, to study polarization in Chile and improve our understanding of the relationships between ideological and affective polarization. We fielded these studies in the polarized context of the 2021 presidential runoff in Chile, on December 19, and of the Constitutional Plebiscite on September 4, 2022,

when Chileans had to approve (*Apruebo*) or reject (*Rechazo*) a new constitution drafted by a Constitutional Convention.

For the first one, the “presidential election study,” respondents first declare their preferred candidate and their position toward an ideological policy issue: taxes. Next, they randomly received a 2x2 treatment. On one arm, the “affective depolarization treatment,” randomized whether respondents received a video showing positive, non-ideological biographical information from their opposing candidate, intended to reduce their affective polarization (Rogowski and Sutherland, 2016), while not affecting their ideological polarization. The second arm, the “ideological depolarization treatment,” randomized whether they received a video providing information supporting the opposite position they have toward taxes, designed to shift their ideology, but not their affective polarization. After the treatment, we measured ideology, affective polarization, and intended voting behavior.

Second, for the “plebiscite study,” the survey was implemented prior to the Constitutional plebiscite, which included two experiments. The first experiment induced (short-lived) affective polarization with an unobtrusive primer based on Simonovits et al. (2022), whereby respondents were randomly asked to write down things they do not like about the outgroup (voters of *Apruebo/Rechazo*). We then measure affective and ideological polarization, intended turnout, and views about democracy. The second plebiscite experiment takes another angle to study the extent to which affective polarization affects people’s opinions on relevant issues: attitudes toward democracy, and economic and social policy issues. The experiment includes three statements, by persons 1, 2, and 3, who randomly voted *Apruebo* or *Rechazo*, and asks respondents to what extent they agree with the person in the statement. The purpose of this experiment is to assess whether respondents’ answers for each kind of statement vary depending on whether the speaker behind the statement supports her same or the opposite option. This also allows us to assess if respondents who were primed to be more affectively polarized in the first experiment respond differently.

Hence, our purposes are, first, to evaluate whether changes in one type of polarization affect the other, and second, to assess the effects of changes in each type of polarization on electoral behavior and views towards democracy. In addition to assessing the relationships between both types of polarization and their electoral effects, the third objective of this study is to characterize ideological and affective polarization in Chile and compare with a large, studied country: US. As far as we know, there are no studies on this for Latin American countries. Finally, we aim to understand who are the people more polarized either ideologically or affectively, and to what extent each type of polarization is related to demographic characteristics and other political behavior outcomes, such as interest in politics, the use of social networks,¹ and ideology, among others.

According to the results, while in the presidential study the ideological depolarizing treatment was successful in moderating respondents’ views on taxes, the affective depolarizing treatment was ineffective. Overall, there aren’t cross effects of the treatments on polarization (e.g., of the ideological depolarizing treatment on affective polarization and vice versa), nor effects on intended electoral turnout. Among left-wing respondents, the affective depolarizing treatment

¹Social networks are frequently blamed for polarization, due to creating “echo chambers,” (e.g., Sunstein, 2018), however, the empirical evidence on this is not conclusive. For example, Boxell et al. (2017) show that the growth in polarization in recent years in the US is most pronounced for demographic groups that are least likely to use the internet and social media, while Levy (2021) shows that the patterns of media consumption via social networks, together with Facebook algorithms, tend to increase affective polarization. For a review on this, see Enikolopov et al. (2011).

of watching a short biographical video of the right-wing candidate reduced ideological polarization, but this finding was unable to replicate in the plebiscite survey. Regarding turnout, a correlation is observed only with affective polarization and not with ideology, but this cannot be evidenced causally.

In the plebiscite study, we effectively induced affective polarization. This had no direct effect on the respondents' ideological stances. The second plebiscite experiment, however, shows evidence of an effect of affective polarization on ideology, which operates when ideological positions are associated with partisan speakers. In concrete, when ideological statements are presented as said by a voter of the respondent's ingroup, the agreement with the stance increases dramatically. This differential agreement depending on the speaker's partisanship is further increased, for the case of abortion, among respondents who received the affective-polarizing treatment. Thus, although affective polarization may not change ideology in the abstract, it importantly affects ideology when stances are mediated by partisan speakers, as it happens in real life, where political interactions and decisions are never in the abstract.

Finally, we also find that treated individuals decreased their support for democracy. This in line with recent studies for the U.S. that show that polarization entails a risk for democracy, as polarized citizens are more likely to tolerate undemocratic behavior by elected politicians of their choice (Graham and Svobik, 2020; Simonovits et al., 2022).

This takes place in a context where the left supporters are much more polarized than those on the right -especially in affective terms-, contrary to what happens in the US, where the Republicans are more affectively polarized. In addition, according to the existing literature, both in Chile and the US it is seen that affective polarization is strongly correlated with interest in politics, which is not true for ideology in the Chilean case. Also, there are no significant differences according to sociodemographic variables such as education or age.

This research contributes to our understanding of the links between ideological and affective polarization, and of polarization beyond the U.S.' context. Although affective polarization may not lead to more extreme ideological positions in the abstract, it may do so when positions come from actors belonging to groups that they despise. Furthermore, the negative effects of affective polarization on democratic attitudes render the study of polarization crucial, especially in a context of democratic backsliding around the world (e.g., Haggard and Kaufman, 2021), and for a region that has often seen its democracy at risk.

The structure of the paper is as follows: Section 2 presents some literature review; Section 3 describes the context, experimental design, data and measurement; Section 4 descriptively characterizes ideological and affective polarization in Chile and US; Section 5 describes the empirical model and shows main results; and finally Section 6 concludes.

2 Literature review

Affective and ideological polarization relationship: The concepts of ideological and affective polarization are distinct and, indeed, people who are affectively polarized –i.e., who despise those from the other party, in the U.S. context– do not necessarily hold radical issue positions (Iyengar et al., 2012; Mason, 2015; Bougher, 2017). Iyengar et al. (2012) showed that both Republicans and Democrats increasingly disliked their opponents and that this “Us vs. Them” approach to politics was inconsistently associated with policy stances. And while both types of polarization may be linked, they “do not fully cover each other” (Wagner, 2021

p.11). For example, Mason (2018) finds that affective polarization in the US is primarily due to the increasing overlap of religious, racial, and partisan identities, but not ideology.² Likewise, for the European case, Reiljan (2020) shows some correlation between both types of polarization, but highlights that high levels of ideological polarization do not necessarily lead to strong inter-party hostility.

Still, for the U.S. there is evidence that ideological polarization causes affective polarization. Rogowski and Sutherland (2016) find that increased ideological differences between political figures produce increasingly polarized affective evaluations, while Webster and Abramowitz (2017) argue that increasing affective polarization responds to growing divergence on issues involving the size and role of government and show that ideological distance strongly influences feelings toward opposing party candidates. Lelkes (2021) uses a survey experiment that randomly varies the inclusion of information on a candidate's party and ideology and finds that respondents' affective polarization reacted far more strongly to ideology than party.

In turn, Druckman et al. (2021) show that affective polarization shapes substantive beliefs, by showing that affectively polarized Americans are less likely to distinguish their views about the U.S.' response to Covid from their views about President Trump –although they do not have exogenous variation in affective polarization. But Levendusky and Malhotra (2016) find that the media's coverage of a polarized electorate causes voters to moderate their own issue positions but increases their animosity toward the opposing party, suggesting that both types of polarization do not always go together. Thus, more research is needed to understand the causal links between both types of polarization, especially on how affective polarization impacts ideological polarization.

A plausible mechanism to explain this is that discussions about political issues could generate a growing conflict when each one is less open-minded and support their ideas more vehemently, deriving in a greater dislike towards those who have opposite ideas. As before, Webster and Abramowitz (2017) argue that “negative emotions appear to be rooted in the belief that should the opposing party gain control of the government and enact its preferred policies, those policies would be very harmful to the overall well-being of the nation.”

In fact, different psychological theories manage to shed light on this phenomenon. For example, Allport et al. (1954), from the theory of prejudice, realizes that generalized prejudice -inflexibly and erroneously- is a tendency to respond in a hostile way towards any group other than one's own. Also, from the theory of social identity (Tajfel et al., 1979), it could be that a greater partisan identity would increase animosity against the out-party, generating greater disgust towards their followers. However, considering that party identification is not especially strong in Chile, or at least in our sample, the theoretical justification from above could be based on the belief congruence theory. In fact, Bougher (2017) explains that perceived dissimilarity in beliefs and issue positions could drive partisan animosity, with a special focus for non-identifiers who have no positive valuations of any party membership.³

Then for the inverse relationship, in the sense of how affective polarization can impact the ideological position, there is literature that associates it mainly with partisan issues. On the one hand, greater animosity towards one's own party can lead to a greater propensity to adopt

²For a more thorough discussion on the causes of affective polarization, see Boxell et al. (2020), Gidron et al. (2018), Levy (2021), and Sood and Iyengar (2016), among others.

³For a further discussion of the belief congruence theory and its differentiation from social identity theory, see Lelkes (2018).

the beliefs of the group to which one belongs (Turner, 2010; Deutsch and Gerard, 1955; Lenz, 2009).⁴ In the case where people have a greater dislike for those who have opposing opinions, they will tend to present a more extreme ideological position. A possible explanation for this phenomenon could be that since greater hostility towards opposing people generate a more negative vision towards the political ideas they follow. As this occurs, the positions opposed to that ideology would tend to be perceived as the most correct. This idea is in line with different scholars who show how an extreme affective position can trigger a different ideological behavior according to party identification (Pierce and Lau, 2019; Goren et al., 2009; Bakker et al., 2020; Nicholson, 2012; Tajfel and Wilkes, 1963).

Electoral and democratic effects of political polarization: According to the electoral effects of political polarization, Wilford (2017) use data from 26 OECD countries and find that highly polarized party systems exhibit higher turnout, while low levels of polarization reduce incentives to vote. For Latin America, Béjar et al. (2020) show that elite ideological polarization and turnout are linked, both because when the stakes in public policy are higher there are more incentives to go to the polls, and because polarization facilitates the formation of party brands that help mobilize voters. Likewise, León (2017) studies a change in voting laws in Peru and finds that centrist voters are the most responsive to a reduction in the fines for abstaining, which suggests that voters in the extremes of the political spectrum (we would say ideologically polarized) are more likely to vote regardless of the costs. Wagner (2021) provides correlational evidence for 51 countries showing that higher levels of affective polarization are also associated with higher levels of turnout.⁵

This results can be associated with the theory of the median voter (Downs, 1957). In this sense, if we imagine a two-dimensional line where the candidates are located in a respective position according to their political and/or ideological orientation, it could be assumed that the most polarized voters tend to position themselves at the extremes of this line and vote for the candidate whose ideological position was on the same side of the midpoint. Given that, the extreme position generates a greater distance from the least preferred candidate, which could lead to less tolerance for this candidate being elected, so he will decide to participate more vehemently to ensure that the most preferred candidate wins. However, if the candidates tend to get closer to the median voter in order to achieve a greater number of votes -a fact that is expected assuming in a context of runoff presidential elections- it could be thought that the closer the candidates are to the center, the more similar they will be, and therefore this effect of “low tolerance” to the choice of the least preferred will be diminished.

Furthermore, there is growing concern about the effects that political polarization may have on democratic stability. A recent strand of the literature has highlighted the importance of polarization in the stability of democracy, in a context of democratic backsliding around the world (e.g., Haggard and Kaufman, 2021). Graham and Svobik (2020) find the U.S. public’s viability as a democratic check to be decreasing in several measures of polarization, including the strength of partisanship, policy extremism, and candidate platform divergence. Likely, Simonovits et al. (2022) find extended “democratic hypocrisy” in the U.S. – meaning a tendency to support democratic norm-eroding policies only when one’s own party is in power— an effect further amplified by two indicators of polarization: strong expressive partisanship and

⁴However, it has been shown that the animosity against out-party members is the one that has grown the most in recent years, and therefore, takes on more relevance when analyzing affective polarization (Iyengar et al., 2012; Mason, 2013, 2015).

⁵For a more thorough discussion on the electoral consequences of polarization and their relationship, see Bumgardner (2016), Dreyer and Bauer (2019), Harteveld and Wagner (2021), Hetherington (2008), Lee (2013), and Polacko et al. (2021), among others.

threat perceived from the opposing party. Although, D. Broockman et al. (2020) depict a less pessimistic picture of the democratic effects of affective polarization. If we believe that public opinion plays a role as a democratic check, this evidence suggests that polarization is risky for democracy.

Causes and consequences of political polarization: Analyzing the causes and consequences of both types of polarization is crucial to understand the relevance of the issue and its connection with other disciplines, such as economics. Specifically, among the main causes of political polarization stands out digital media and social networks (see for example Levy (2021); Boxell et al., 2017), income inequality, unemployment and financial crises (see for example Gu and Wang, 2021; Gidron et al., 2018; Eichengreen, 2018). Also about the consequences, it has been studied that political polarization has negative effects on interpersonal relations, labor market, economic development, political unrest and democracy (see for example Nicholson et al., 2016; Michelitch, 2015; Binder, 1999; Lindqvist and Östling, 2010; Graham and Svulik, 2020). With this, this research contributes to the existing literature by studying how each type of polarization can be the cause of another, and how they affect the intended turnout.⁶

3 Research design, data and measurement

3.1 Context

We implemented both surveys in a highly polarized electoral context in a developing country: Chile. Starting on October 18, 2019, Chile experienced a severe social outburst, accompanied by violence and massive protests, and making way to a deep political crisis. In November 2019, parties from all the political spectrum (except the Communist Party) signed an agreement that opened the way for a new constitution. After the approval of the entry plebiscite in October 2020, with 78% of the vote, a Constitutional Convention was elected in April 2021.

The first presidential election after the 2018 social outburst was held in 2021. The runoff was held between Gabriel Boric and José Antonio Kast (December 2021). Boric (35 years old), and twice a member of the House of Deputies, is one of the founders of the Frente Amplio, a young left-wing coalition that was born out of the student protests in 2011. Boric unexpectedly won a primary of voters from his coalition and the Communist Party, and was then supported for the runoff by some of the traditional parties in the center-left, such as the Socialist Party. He won 26% of the vote in the first round of the election, far above from the Christian Democrat's candidate (Yasna Provoste, with 12%) and other minor left-wing candidates.

In turn, Kast (55 years old) was a member of the House of Deputies for four terms, the first three as a member of traditional right-wing party Unión Demócrata Independiente (UDI). He resigned from UDI in 2016 and in 2019 founded the far-right Republican Party. In the first round of the election Kast received 28% of the vote, winning the traditional right's candidate (Sebastián Sichel, with 13%), and was then backed by the two major parties in the right (UDI and Renovación Nacional). This runoff had a record turnout of 56%, and Gabriel Boric was elected with 56% of the vote.

Meanwhile, the constitutional process lasted a year, and a plebiscite with mandatory vote was held on September 4th, 2022, in which the citizenry rejected by an ample margin the Constitution draft proposed by the Constitutional Convention. Despite the enormous support for a

⁶For a more thorough discussion on the causes and consequences of political polarization see Appendix.

new constitution in the entry plebiscite (78%), the Constitutional Convention gradually lost support, to a point that since April 2022, most polls showed an advantage for rejecting the constitutional draft. The turnout rate was 86% and the Rechazo option won with 62% of the vote.

Regarding the evolution of affective polarization in the last decades, we are not aware of any direct measure for previous years. As an approximation, we use the evaluation of candidates for the runoff election for all the population as well as among those who stated that they would vote in the first-round election for one of the two candidates of the runoff election.⁷ According to the data, evaluation of candidates and of candidates' voters are highly correlated, suggesting that affective polarization calculated based on candidates evaluations is not too far from that based on groups of voters.

Figure A.1 presents the mean affective and ideological polarization for both groups.⁸ Whereas ideological polarization has experienced small changes – reaching its higher level in 2017, it shows a substantive difference in affective polarization between 2005 and the following years. It is interesting to note that affective polarization decreases after the 2017 election from 3.37 to 2.90 (differences statistically significant). Projecting this pattern unto the 2021 election, polarization during the election year could be higher than 3.84 and closer to 2013 affective polarization levels. As expected, affective polarization is higher among voters of the runoff election candidates than overall.

3.2 Research design

3.2.1 Presidential study

In the first survey, respondents first declare their preferred candidate and their position toward a key ideological policy issue: taxes. The reason to use taxes as an ideological proxy is because it's a key question and an issue that divided Chilean politics. Next, they received a randomized 2x2 treatment. On one arm, the affective depolarization treatment, respondents randomly received a one-minute video showing non-ideological biographical information from their opposing candidate (e.g., Boric to Kast's voters and vice versa), intended to reduce their affective polarization (Rogowski and Sutherland, 2016), while not affecting their ideological polarization. The Boric's and Kast's videos are available [here](#) and [here](#).

The second arm, the ideological depolarization treatment, randomized whether respondents received a one-minute video providing information supporting the opposite position they had toward taxes, designed to shift their ideology, but not their affective polarization. If randomized to a treatment, respondents without a preferred candidate or position toward taxes received information of a randomized candidate/position. The pro- and anti-tax videos are available [here](#) and [here](#), respectively. Figure 1 summarizes the experiment and the rules of assignment of the

⁷We CEP nationally representative surveys, which have asked continually for the evaluation of political figures. For all election years, except the last election, the first-round vote choice was included in a pre-election survey, and in some, they also included the second-round vote. For the last election, the survey did not include the vote choice question on the only pre-election survey, but it was included in a post-election survey on April-May 2022. Hence, for comparison, for the 2017 candidates I also include the 2018 post-election results.

⁸We measure affective polarization as the absolute difference between the valuation of the two candidates for the runoff election. This question ranges from 1 "Very positive", to 5 "Very negative" with 3 as the neutral position "Neither negative nor positive". Given that the question we use has a range from 1 to 5, for comparison purposes, it's scale (2*Affective). Ideological polarization is measured as the absolute distance between the respondent position in a 1-10 scale where 1 is left and 10 is right and 5. Over the year, an average of a third of the sample do not place themselves and are not included in the analyses.

Figure 1: Summary of treatment assignment

| <i>Treatments</i> | <i>Arm 1: Randomly received ideologically depolarizing video</i> | | |
|--|--|---|---|
| | <i>No</i> | <i>Yes</i> | |
| <i>Arm 2: Randomly received affectively depolarizing video</i> | <i>No</i> | <i>No videos. (25.55% of sample)</i> | <i>Receives pro-taxes (anti-taxes) video if respondent is anti-taxes (pro-taxes). If she has a neutral position or no position on taxes, she is randomly assigned one of the videos (anti or pro). (24.10% of sample)</i> |
| | <i>Yes</i> | <i>Receives Boric's (Kast's) video if respondents is pro-Kast (pro-Boric). If she has no preferred candidate, she is randomly assigned one of the videos (Boric and Kast's). (25.55% of sample)</i> | <i>Receives both videos in random order, with same rules of assignment for treatment videos. (24.80% of sample)</i> |

different videos. After the treatments, respondents were allowed to comment on the video(s), and answer different questions to measure ideology, affective polarization, and intended voting behavior. Respondents assigned to treatment were only able to advance in the survey once the complete video was played out.

With this experiment, we aim to answer two main questions. The first one points to the causal links between the two types of polarization. In the first instance, we studied the manipulation checks, in order to estimate whether the ideological depolarization treatment effectively reduces ideological polarization, and the same for the affective depolarization treatment. Then we test two hypotheses: i) ideologically depolarization treatment reduces affective polarization (H1) and ii) affective depolarization treatment reduces ideological polarization (H2). These hypotheses are based on the existing literature that showed, in some cases, that affective and ideological polarization are linked in the same direction.

The second question tries to answer the effects of each type of polarization on intended electoral behavior. In this case the main hypotheses are that reduced levels of either type of polarization result in lower intended turnout (H3),⁹ such as León (2017), and that reduced levels of either type of polarization result in a greater chance of intending to vote for one's originally least preferred candidate (H4). Although we are aware that vote choice is harder to move, specially in a highly polarized context.

3.2.2 Plebiscite study

This study has a twofold purpose. First, we aim to improve our descriptive analysis of polarization in Chile, by assessing the relationships between different measures of affective and ideological polarization. As for affective polarization, we measure affective differences across different definitions of the main political cleavage (e.g., *Apruebo* vs. *Rechazo* supporters, Boric vs. Kast voters, left vs. right, pro-life vs. pro-choice, among others), to assess how polarization varies depending on the cleavage. As for ideological polarization, we included policies other than taxes, including other economic issues, as well social issues like abortion. This study's second purpose is to further assess the effects of affective polarization in ideological polarization, electoral behavior, and attitudes toward democracy.

⁹No prior belief on which one has a larger effect

With these goals, we implemented a second survey, including two cross-randomized experiments. First, in “the prime experiment,” contrary to the presidential election experiment, in which we aimed at reducing affective polarization, we randomly activated (short-lived) affective polarization with an open-ended unobtrusive primer based on Simonovits et al. (2022). The authors induced affective polarization by asking respondents to “List a few things that make you feel threatened about the Democrats/Republicans.” This primer aims to activate, not induce, respondents’ animosity toward the outgroup, by relying on respondents’ own views of what produces their animosity, and showed promising results.

In our case, we started by asking respondents to what voting option they felt closer to, and then the primer read: “Thinking of [outgroup] voters, please list a few things you dislike about them,” and was shown only to individuals assigned to treatment. The control group received a placebo question (about promotional phone calls), to ensure that both groups underwent the same cognitive effort task as well as a negative prompt, thus avoiding inducing differential levels of fatigue and negative thoughts between the groups that could eventually explain the differences. We pretested both the treatment and placebo and they were well understood by respondents and generated no discomfort.

After the treatment (or placebo), we measured affective polarization in different ways as a manipulation check, and then measure ideological polarization based on various policy issues, intended electoral behavior, and attitudes toward democracy. The hypotheses are in the same direction as the presidential study, but additionally, is expected that affective polarization increase negatives attitudes towards democracy.

The second plebiscite experiment, “the randomized speaker experiment,” also studies to what extent affective polarization changes people’s opinions on relevant issues. It included three statements, by persons 1, 2, and 3, who randomly support *Apruebo* or *Rechazo*, who we call “the speaker,” and asks respondents to what degree they agree with this person. The statements cover democratic attitudes (“when the country is passing through difficult times, it is justified for the president to shut Congress and govern without it”), an economic policy issue (“economic growth should always be given more priority than reducing inequality”), and a social issue (“abortion should always be permitted”), and were presented in random order. Thus, for example, one statement would read:

“Person 1, who votes [Rechazo/Apruebo, at random], says that when the country is passing through difficult times, it is justified for the president to shut Congress and govern without it. To what degree do you agree with Person 1?”

The purpose of this experiment is to assess whether respondents’ answers for each kind of statement vary depending on whether the person in the question supports her same or the opposite option. As well, we assess if respondents who were primed to be more affectively polarized in the first experiment, which always takes place first, answer these questions differently.

3.3 Data

Both experiments were implemented in Chile, via Netquest,¹⁰ an experienced polling firm with an established presence in more than 20 countries, and were programmed in Qualtrics.¹¹ The presidential study included 2,133 respondents, 1,379 recontacts from a previous wave, and 754 from a fresh sample. The plebiscite study included 1,499 respondents, where 1,368 had responded the previous presidential study and 131 come from a fresh sample.

In order to have sufficient sample size on every socioeconomic group and geographical area, as well as a balanced sample across gender and age groups, Netquest implemented specific quotas for both waves that are not proportional to the population distribution. The quotas are based on socioeconomic groups (five categories defined by Netquest), geographical areas (grouped into three categories: northern regions, capital city region, and southern regions); gender and four age groups (18-29, 30-44, 45-59, and 60 or more).¹² Figure A.2 summarizes the requested quotas. Also we use weights when analyzed the aggregated results, but not when looking at specific groups.

3.4 Measurement

Following the literature, we use feeling ratings to construct our measure of affective polarization. Starting from a multiparty system, we take advantage of the binary setting of a runoff election and of a plebiscite to construct two opposing political groups. For the presidential study, respondents were asked to rate the candidates' voters on a 0-10 scale from very negative to very positive. In the plebiscite study, in addition to past candidates' voters, we included questions on voters of both Plebiscite options (*Apruebo* or *Rechazo*), as well as additional sets of two opposing groups. In particular, respondents rated those who held pro-choice and pro-life stances on abortion, the rich and the poor, and right-wing and left-wing people. We randomized the order of the different pairs, as well as within each pair, the order of appearance of each group. We construct affective polarization as the absolute difference between the ratings of groups within each pair. Hence, we have a measured of affective polarization based on candidates' voters for both studies ("Presidential voters"), and for the plebiscite study measured based on plebiscite options' voters ("Plebiscite voters"), on abortion positions ("Abortion"), on socioeconomic groups ("Rich-Poor"), and on political position ("Left-Right"). In addition, we include a question where respondents rated on a 0-10 scale the degree to which voters of each Plebiscite option had good ideas, with which a sixth measure of affective polarization ("Ideas").

To measure ideological polarization, for the presidential study we mainly rely on a question in which the respondent is required to place herself on a scale from 0 to 10, where 0 means that taxes should be sharply reduced and 10 that taxes should be sharply increased. We selected taxes as our ideological issue since they were highly salient during the election, with both

¹⁰Netquest relies on a voluntary recruited panel conformed by individuals from various geographical regions and socioeconomic groups. Hence, the sample is non-probabilistic. For this research purpose, this is not particularly problematic since the main goal is to understand the mechanisms behind polarization. Furthermore, there is evidence that results based on such non-probability samples are not significantly biased (Hainmueller, Hangartner and Yamamoto, 2015). Because of this potential external validity issue, any result has to be analyze carefully.

¹¹This software allows complete randomization of treatments, thus minimizing any possible methodological problem or bias.

¹²Due to budget constraints, these are not exact quotas, but rather, target samples that we monitored during field work. Netquest put special efforts in incentivizing the participation of respondents from subgroups that were below their quota, by resending or sending new invitations.

candidates taking clearly opposing positions in the expected direction: the leftist candidate campaigned on raising tax and the rightist candidate on reducing them. Ideological polarization is constructed as the absolute distance from the median position, which coincides with the mid-point position (5).

During the drafting of the constitutional proposal, several other ideological issues acquired prominence, as we would expect during a constitutional process. Hence, we explore other potential cleavages, such as growth versus inequality, abortion rights, liberty versus public order and security, state responsibility on personal advancement (replication from an American National Election Surveys, ANES, question), as well as left-right scale, and liberal-conservative scale in social issues. Ideological polarization on each issue is constructed as the absolute distance from the median position, which coincides with the mid-point of the scale (5) in all cases, except for the liberal-conservative scale which is slightly lower.¹³

Table 1 shows the correlation of the measures of ideological polarization over different issues in the presidential and plebiscite studies. Correlations are all positive, and stable across studies, but their strength varies across domains. The measure defined by the poles of growth and inequality exhibits the strongest correlation with our the measured based on taxes (0.31-0.32), which we mostly use in the presidential study. This is theoretically consistent given the strong presence of taxes in the public discourse to improve inequality, as well as their potentially harmful effect on growth. Although one would a priori expect a stronger correlation with positions on taxes and the left-right scale, given the many dimensions involved in a person’s identification, and the strong legacy of the democracy-authoritarian divide in Chile, its lower correlation is not surprising (albeit it is still positive). Measures of ideological polarization on the social dimension –abortion and liberal-conservative–, show lower correlations with the other measures, but higher between them.

Table 1: Correlation between measures of ideological polarization

| Ideological polarization variables | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------------------------|------|------|------|------|------|------|
| <i>Panel A: Plebiscite study</i> | | | | | | |
| (1) Taxes | 1.00 | | | | | |
| (2) Inequality-Growth | 0.32 | 1.00 | | | | |
| (3) Abortion | 0.19 | 0.24 | 1.00 | | | |
| (4) Liberty-Security | 0.24 | 0.32 | 0.28 | 1.00 | | |
| (5) Liberal-Conservative | 0.19 | 0.27 | 0.43 | 0.32 | 1.00 | |
| (6) Government-Individuals | 0.30 | 0.36 | 0.28 | 0.22 | 0.22 | 1.00 |
| <i>Panel B: Presidential study</i> | | | | | | |
| (1) Taxes | 1.00 | | | | | |
| (2) Inequality-Growth | 0.31 | 1.00 | | | | |
| (3) Liberal-Conservative | 0.10 | 0.31 | 1.00 | | | |
| (4) Liberty-Security | 0.16 | 0.31 | 0.27 | 1.00 | | |
| (5) Left-Right identification | 0.11 | 0.20 | 0.57 | 0.18 | 1.00 | |

Note: Own elaboration using survey data

Table 2 shows the correlation between our different measures of affective polarization, especially for the Plebiscite study, since for the Presidential study we had only two measures. Affective polarization measured on politically defined groups are highly correlated. On the other hand,

¹³Some of this measures are included also in the presidential study, presented in Table 1

when it is measured on socially defined groups (abortion and rich-poor), they are highly correlated between them, but exhibit lower correlations with the politically defined groups, albeit they are all positively associated.

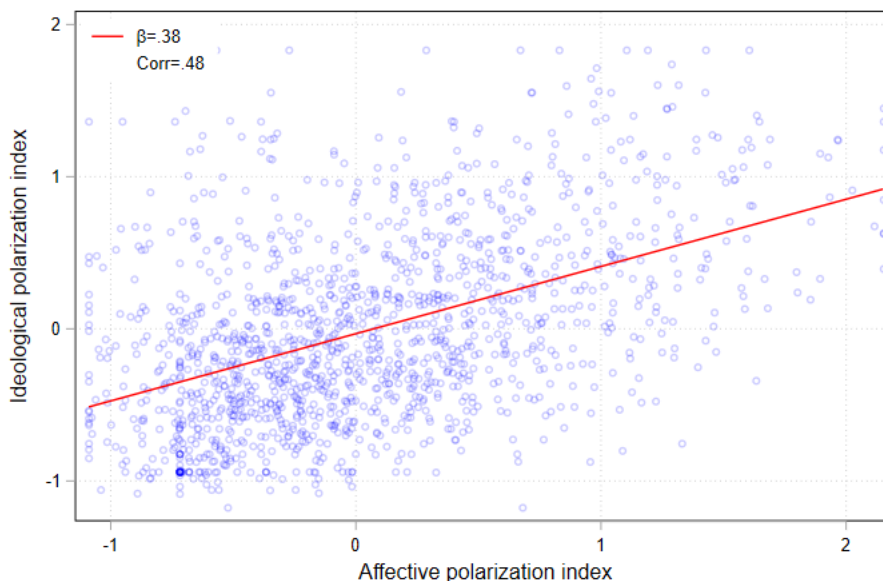
Table 2: Correlation between measures of affective polarization

| Affective polarization variables | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------------------------|------|------|------|------|------|------|
| <i>Panel A: Plebiscite study</i> | | | | | | |
| (1) Plebiscite voters | 1.00 | | | | | |
| (2) Presidential voters | 0.67 | 1.00 | | | | |
| (3) Abortion | 0.31 | 0.33 | 1.00 | | | |
| (4) Rich-Poor | 0.28 | 0.30 | 0.18 | 1.00 | | |
| (5) Left-Right | 0.57 | 0.58 | 0.25 | 0.25 | 1.00 | |
| (6) Apruebo-Rechazo ideas | 0.68 | 0.65 | 0.29 | 0.27 | 0.53 | 1.00 |
| <i>Panel B: Presidential study</i> | | | | | | |
| (1) Candidate voters | 1.00 | | | | | |
| (2) Candidate evaluation | 0.87 | 1.00 | | | | |

Note: Own elaboration using survey data

Finally, Figure 2 presents the association between the affective and ideological polarization in the Plebiscite study. Since we have multiple measures, we constructed a summary index, following Anderson (2008) and Kling et al. (2007), and including the six affective polarization measures already described, plus two additional measures coming from Kalmoe and Mason (2022), pointing to whether the outgroup voters are perceived as a threat or as evil (see Section 4). Both types of polarization exhibit a positive association (correlation=0.48; 0.38 when controlling for a set of sociodemographic and political behavior variables), but as Figure 2 shows, there is considerable variation along the fitted line. Indeed, the R^2 is 25%, and thus neither is a strong predictor of the other. Therefore, in line with research elsewhere, affective and ideological polarization in Chile appear as different concepts that not always go hand in hand.

Figure 2: Association between affective and ideological polarization



Note: Own elaboration using survey data. Each index construction follows Anderson (2008) and Kling et al. (2007), and include eight affective polarization measures

Also for electoral behavior outcomes, we use two dichotomous variables where turnout takes value 1 if the respondent intended to turnout in the presidential runoff, and vote choice that takes value 1 if the respondent thought to vote for the originally least preferred candidate -or for a candidate that he didn't preferred before-, after treatment.

4 Descriptive statistics

For the presidential study, Table A.1 presents the descriptive statistics by treatment groups, including different variables associated with polarization, electoral behavior and sociodemographic characteristics. As main results, affective polarization is lower for those who were exposed to affective depolarizing treatment, followed by those who were exposed to both treatments, and then for those who were exposed to the ideological. However, the differences in means are not statistically significant. For ideological polarization the differences in means follows the same pattern and now these differences are statistically significant. On the scale from 0 to 5, those treated with the ideological video present an ideological polarization of 1.55, while those who received only affective, both or neither, present a polarization level of 1.84, 1.67 and 1.87, respectively, which goes in line with our hypotheses. In summary, the control group is the most polarized.

Then, for electoral behavior, we can see that there are statistically significant differences between groups in turnout, but nor for vote choice. The same happens if we see, for example, the baseline preferences on candidates and taxes, where there are no differences by groups. Even so, it is interesting to note that in general there there is more support for Gabriel Boric than J.A. Kast, as well as more support for cutting taxes than raising them. Similarly, the proportion of identification for left-wing and right-wing parties is similar within and between groups, and that there is a greater preference for none or another option. Last, differences in sociodemographic variables such as age, education level, sex and SES, are not statistically significant.¹⁴

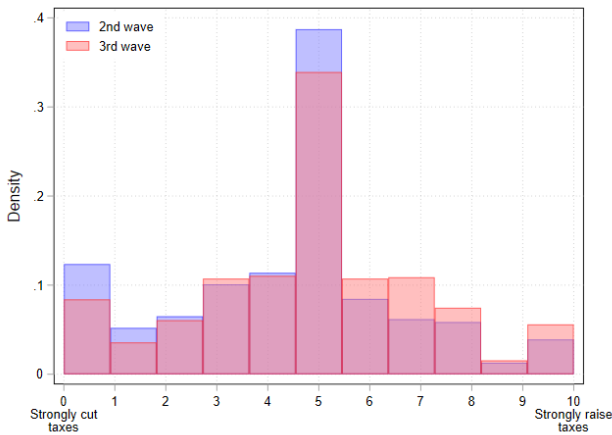
For descriptive purposes, we look at the post-treatment variables in the control group to see the distribution of post-treatment outcomes such as taxes, candidates and voters' candidates evaluation (all in a 0-10 scale), for both surveys. As explained above, in the presidential study our main measure of ideological polarization is based on the question about taxes, depicted in Figure 3 for both studies. The distribution is fairly similar in both studies, with no statistically significant differences. Moderate positions (4-6 range) concentrate almost half of the respondents in both studies (47,2% in the presidential study and 47.9% in the plebiscite's). Indeed, the mid-value (5) gathers around a third of the responses (32.3% and 29.8%, respectively), revealing an important degree of moderation on this issue. More respondents lean to the left of the center (toward the "cut taxes end"), than towards the right (toward the "raise taxes end").

Figure 4 present, by the baseline preferred candidate in both studies, the respondents' average assessments of each candidate and its voters. The correlations between evaluations of candidate and his voters are very high: 90% for Boric and 92% for Kast, suggesting that respondents do not distinguish much between a candidate and his voters. Both Boric and Kast supporters give a rate around 8 out of 10 to their candidate's voters in both studies. Regarding the opposite candidate's voters, two patterns emerge. First, Boric supporters rate worse their opposing candidate's voters than Kast voters do; and second, the mean rating is slightly higher in the

¹⁴In a complementary way, in the Table A.2, a replica of the Table A.1 is shown, differentiating by preferences for each candidate and only for the control group. It is observed that there is a clear difference in the levels of affective polarization, turnout and vote choice between groups.

plebiscite study –which was conducted nearly 9 month after the runoff election. The differences in the evaluations of the ingroup and outgroup, of around 6.6 for Boric supporters and 5.7 for Kast’s in the presidential study, and 4.38 and 4.12, respectively in the plebiscite study. These differences are in the same order of magnitude with those found in the evaluations of Democrats and Republicans for partisans (56 for Democrats and 63 for Republicans, in a 0-100 scale; ANES 2020).¹⁵ Among the group without a preferred candidate, the difference is much lower, just 1.5, and also lower than differences in evaluations of Democrats and Republicans among non-partisans (32 in a 0-100 scale; ANES 2022).

Figure 3: Taxes distribution



Note: Own elaboration using two waves of survey data, in 2021 presidential election and 2022 plebiscite.

Then, looking at the different ideological issues in the plebiscite study (Figure 5), we observe that the overall degree of ideological polarization varies across issues between groups. In particular, *Apruebo* voters exhibit substantially higher degrees of polarization on two issues: abortion rights and inequality vs growth. On other issues, the differences are not statistically significant. Abortion rights – which have been a contested issue in Chile, and a matter of debate during the Constitutional process, also exhibits the higher levels of ideological polarization.

Figure 5: Affective pol. in plebiscite study

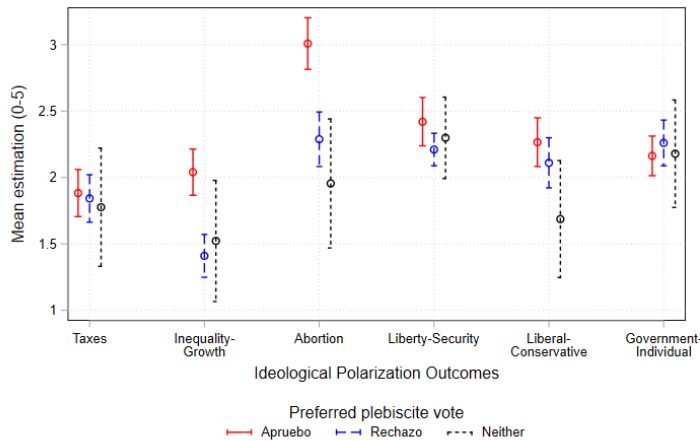


Figure 4: Candidates and voters evaluation

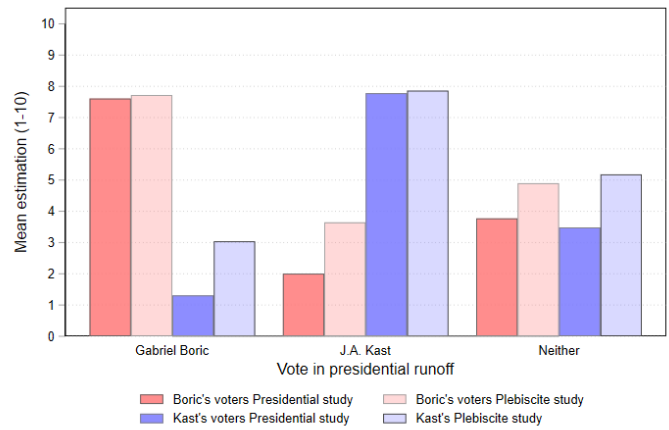
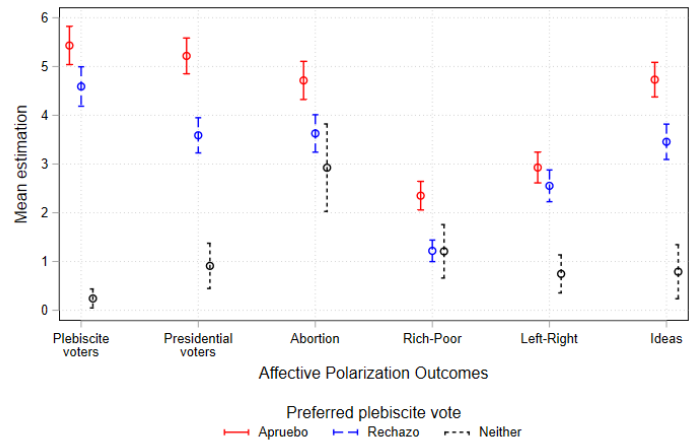


Figure 6: Ideological pol. in plebiscite study



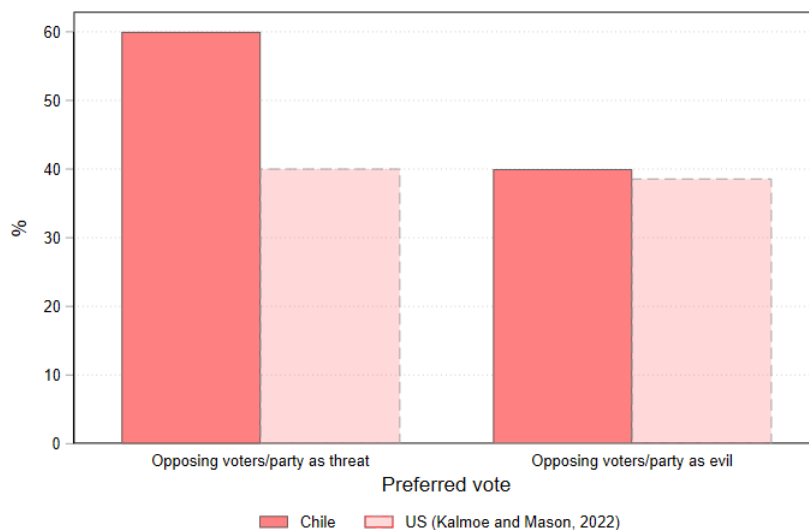
Note: Own elaboration using survey data. Each point correspond to the variable mean at 95% CI.

¹⁵The American National Election Studies, ANES (www.electionstudies.org).

The higher degree of polarization among *Apruebo* voters is more apparent for affective polarization. As Figure 6 shows, *Apruebo* voters are more polarized than *Rechazo* voters over on all measures, except for right-left groups. And similar to ideological polarization, abortion is a highly affectively polarizing issue, even among those who do not express a preference for any of the Plebiscite options, a group who shows very low levels of affective polarization in all the other measures. Also, Figure A.3 further depicts the persistence of affective polarization along the presidential election dimension, by plotting the distribution of the difference between the Boric vs. Kast voters affective polarization measure in December 2021, prior to the runoff, and in September 2022, i.e., nine months later, for the 1,368 individuals who answered the both survey waves. Notably, the distribution is clearly centered around zero and has a mean of -0.84, revealing high persistence of the measure.

A related indicator of affective polarization is the degree to which individuals perceive the opposing voters as a threat to their country, and even, as “downright evil.” Figure 7 presents results for the Plebiscite study alongside Kalmoe and Mason (2022) findings for the US. Both countries exhibit high degrees of affective polarization. And whereas in the U.S. opposing voters are more frequently viewed as a threat than in Chile, Chilean respondents are more likely to consider their opposing voters as evil than in the U.S..

Figure 7: Affective polarization in plebiscite study



Note: Own elaboration based on data from the plebiscite survey. We impose value one on the one that is above the median value on the 0-10 scale.

Now, who are the more polarized? To answer this question and get a comparative perspective, we compare the levels of ideological and affective polarization between groups by different sociodemographic variables. While the survey is not representative, and therefore we cannot compare overall levels of polarization with those found elsewhere, if we assume that selection bias is not associated with polarization in different ways by subgroups, we can compare sociodemographic trends in polarization with those in the US.¹⁶

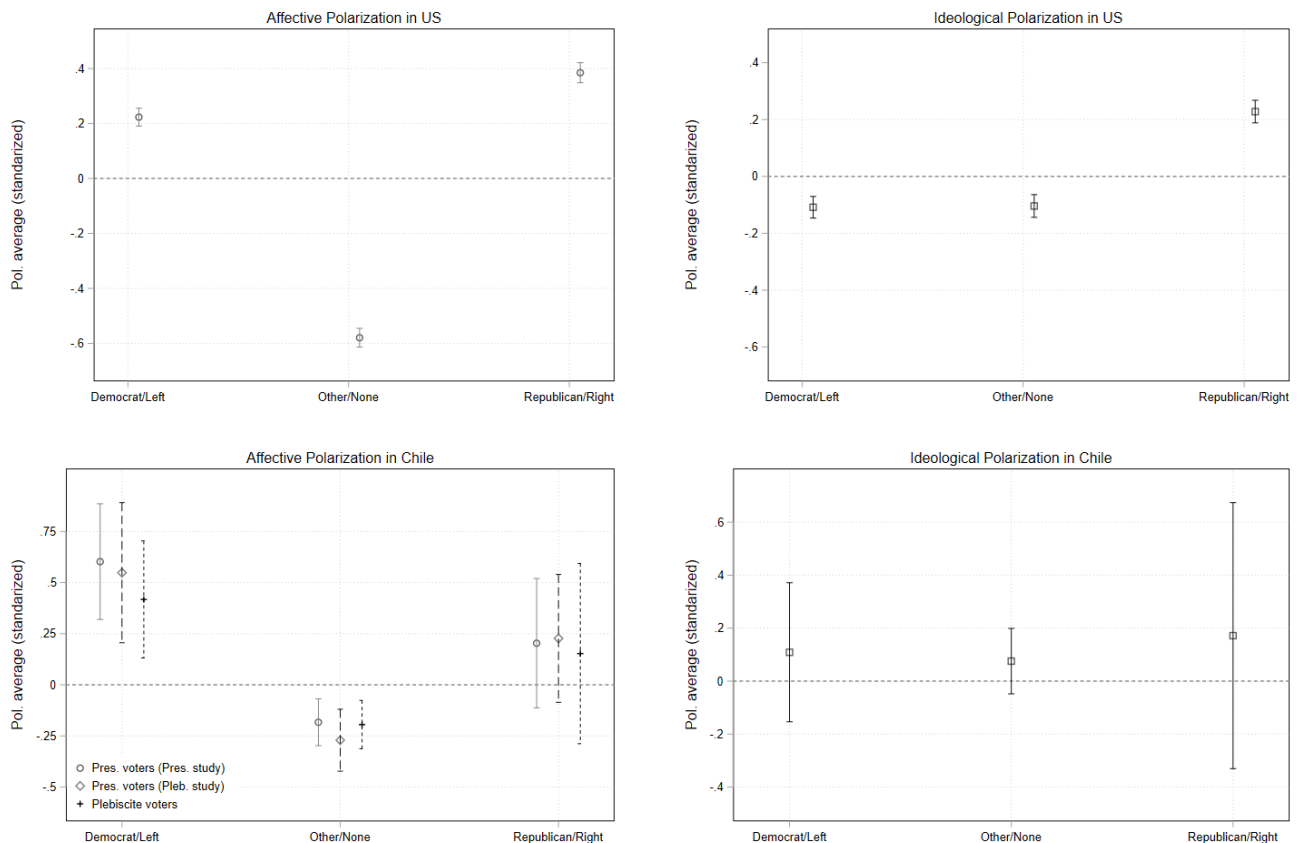
Affective polarization is measured as the difference between the feeling thermometers for the Democratic and Republican parties. For ideological polarization, since there was no equivalent

¹⁶2020 American National Election Survey is used for this purpose. This dataset contains many variables that allow creating similar variables for affective (using feeling thermometers for the Democratic and Republican parties) and ideological polarization (using different political issues questions that are positively correlated).

question to ours on taxes, we use one that asks whether “Government should see to jobs and standard of living” or “Government should let each person get ahead on own”, in a 1-7 scale, and calculate the distance from the median. In the Plebiscite study we included this same ANES question, but with a 0-10 scale, to improve comparability. We compare the trends in Chile and the U.S. in both types of polarization (each standardized) by sex, age, political ID, education, and interest in politics. For affective polarization, we compare the U.S. data with measures based on the evaluation of candidate’s voters in both studies as well as on plebiscite options, for the latter.

Results suggest that there are no relevant differences by sex and education in neither country (see Figures A.4 and A.5), while in terms of age (see Figure A.6), in both countries older people are more affectively polarized and less ideology polarized. Moreover, Figure 8 shows that respondents in Chile who identify with the left are more affectively polarized than their opponents -and slightly in ideology.¹⁷ This is relevant because is clearly the opposite the US context, where Republican partisans are more affectively and ideology polarized than Democrats. Finally, as was expected from the existing literature, in both countries affective polarization is highly and positively correlated with interest in politics, whereas correlations of interest with ideological polarization are much weaker.¹⁸

Figure 8: Comparative trends in affective and ideological polarization by party ID



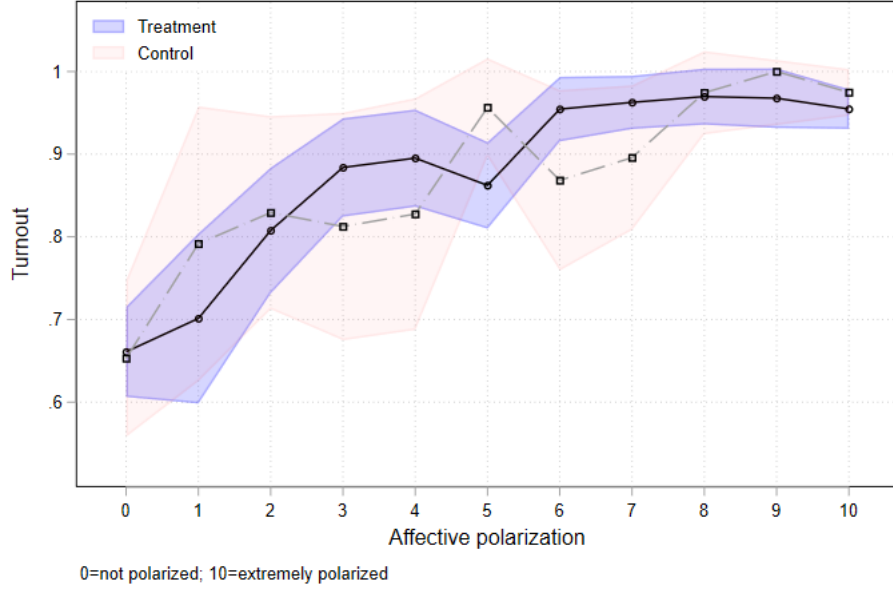
Note: Own elaboration using two waves of survey data, in 2021 presidential election and 2022 plebiscite.

¹⁷This is also true when it’s divided between baseline preference on candidates (Figure B.1)

¹⁸In addition, interest in politics and the use of social networks for political purposes is usually a predictor of the levels of animosity and ideological positioning of the population. Figure B.2 replicated the previous process, differentiating by subgroups underlying these variables. An interesting relationship is observed, in the sense that those who use social networks more frequently for political purposes and are more interested in politics have higher levels of polarization, being the differences in affect between groups much greater than in ideological polarization.

Finally, regarding how the turnout is related to the levels of affective and ideological polarization, Figure 9 shows a clearly positive relationship between the affect and the propensity to vote, both for those who were treated with at least one video and for the control group. However, this relationship is somewhat weaker for the controls, probably because there are fewer observations. Then, for the ideological case (Figure A.7), a much less clear and even negative relationship is observed. This would provide a first evidence that affective polarization could be a better predictor of turnout than ideology.

Figure 9: Relationship between turnout and affective polarization



Note: Own elaboration based on presidential study survey. Each point represents the propensity to vote by affective polarization level.

5 Experimental results

5.1 Presidential study

5.1.1 Empirical methodology

We try to answer the first question and hypotheses 1 and 2 with the following two estimating equations:

$$Aff.Polarization_i = \beta_0 + \beta_1 AT_i + \beta_2 IT_i + \delta_1(AT_i \times IT_i) + X_i' \gamma + \varepsilon_i \quad (1)$$

$$Ideol.Polarization_i = \beta_3 + \beta_4 AT_i + \beta_5 IT_i + \delta_2(AT_i \times IT_i) + X_i' \gamma + \varepsilon_i \quad (2)$$

where, for individual i , *Aff.Polarization* corresponds to affective polarization, *Ideol.Polarization* to ideological polarization, AT and IT are indicators for receiving the affective depolarization and ideological depolarization treatments, respectively. The manipulations checks state that $\beta_1 < 0$ and $\beta_5 < 0$, and my main hypotheses state that $\beta_2 < 0$ and $\beta_4 < 0$.¹⁹ We also include an interaction between both treatments to assess whether they interact in some sense. X is a set of control variables including age, level of education, sex, interest in politics, socioeconomic

¹⁹That is to say, ideological depolarization treatment reduces affective polarization (equation (1)), and affective depolarization treatment reduces ideological polarization (equation (2)), respectively.

status, and frequency of social media use, among others. In addition, fixed effects by region s will be used to control for unobservable that are invariant over time in each one. To assess heterogeneity, we will estimate the main equations for different subgroups of each variable of interest.

Because the methodology relies on an RCT, we can assume that an OLS estimate should not have any sources of bias. If there are observable differences in the data in terms of sociodemographic or economic characteristics, it would suffice to control for the previously described variables.

One possible concern is that there may have been non-compliance if many respondents did not watch the video(s) fully or attentively. This could introduce a correlation between the treatment and the error term, as well as threats to internal validity. Although the company Netquest is rigorous in collecting reliable data, one way to address this possible problem is to perform heterogeneous effects depending on whether the person made a comment about the video (the survey allowed for comments). We will further analyze these comments to qualitatively learn about how people react to the videos, and how these reactions align with our proposed mechanisms. Still, since exposure to the treatment does not guarantee that the respondents have fully watched the video, the estimated coefficients will be interpreted as intention-to-treat (ITT). However, it's worth noting that the comments response rate vary from 62% to 71%, being a large number of respondents that we can assume watched the video.

Then, to answer how the two types of polarization are mapped into electoral behavior, we will start by estimating the following equation via OLS:

$$Behavior_i = \alpha_0 + \delta_1 Aff.Polarization_i + \delta_2 Ideol.Polarization_i + X_i' \gamma + \mu_i \quad (3)$$

where *Behavior* corresponds to two different outcomes (turnout and vote choice) for individual i , and the explanatory variables are the measures of post-treatment affective and ideological polarization.

However, the levels of polarization are likely to be correlated with omitted variables that may also affect electoral behavior (i.e., they could be correlated with the error term). Thus, we rely on an instrumental variables' strategy, using the treatment variables as instruments for polarization. If, in line with the manipulation checks and hypotheses, treatments affect polarization, we will have an exogenous variable that meets the first stage. As for the exclusion condition, we argue that watching a short video about taxes or with biographical information of the candidates should not have a relevant effect through variables other than ideological and affective polarization, more so when conditioning in a set of pretreatment political behavior outcomes. We will follow the standard two-stages least square estimation, as follows:

First Stage:

$$Aff.Polarization_i = \beta_0 + \beta_1 AT_i + \beta_2 IT_i + \delta_1(AT_i \times IT_i) + X_i' \gamma + \varepsilon_i$$

$$Ideol.Polarization_i = \beta_3 + \beta_4 AT_i + \beta_5 IT_i + \delta_2(AT_i \times IT_i) + X_i' \gamma + \varepsilon_i$$

Second Stage:

$$Behavior_i = \alpha_0 + \delta_1 \widehat{Aff.Polarization}_i + \delta_2 \widehat{Ideol.Polarization}_i + X_i' \gamma + \mu_i \quad (4)$$

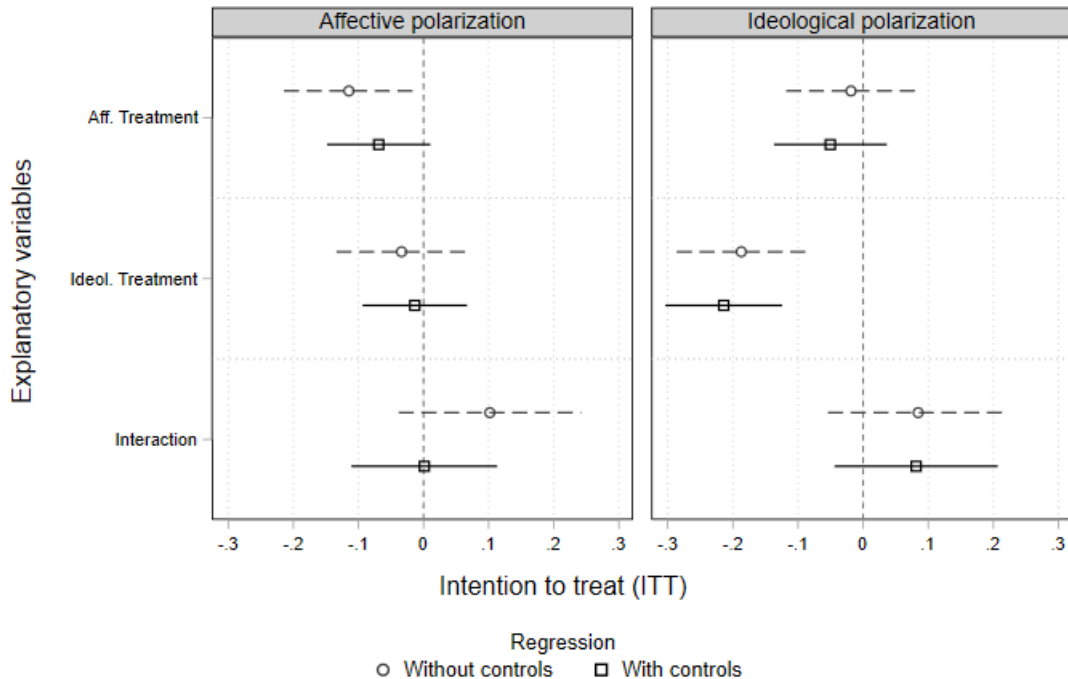
Nevertheless, if one or both hypotheses H1 and H2 are rejected, the first stage of the equations would not consider the irrelevant treatment variable for the polarization term. The reason is because when the instrument is irrelevant or weak, there will be biased estimates for independent variables and the hypothesis tests will have large size distortions (Stock and Yogo, 2002). Still, we will estimate a reduce form to address the direct effects of treatments on intended turnout.

5.1.2 Results

Ideological vs Affective polarization:

Figure 10,²⁰ shows the results of equations 1 and 2, with and without the inclusion of control variables. In both cases the manipulation checks are met without controls, however, this is statistically significant only for the ideological treatment after including controls. That is only the ideological position was possible to manipulate through the treatment. In fact, the ITT is significant at 0.1% and achieves a reduction of 0.21 standard deviations on average. Then, and more importantly, we can see that none of the hypotheses H1 and H2 are fulfilled. In this sense, there would be no causal relationship between both types of polarization, consistent with, for example, Mason (2015, 2018). As proposed by Rogowski and Sutherland (2016), seeing biographical information of a opposite candidate should improve the opinion of him and their voters, and thereby close the evaluation gap that divides left and right. However, this biographical video does not manage to manipulate the opinions of the candidates and voters. All of these results are robust to different ways of measuring both types of polarization.²¹

Figure 10: ITT for equations 1 and 2, respectively



Note: Polarization measurements are calculated as absolute difference in the evaluation of candidates' voters (affective polarization) and the absolute value of the distance from the center (5) (ideological polarization). Confidence intervals are at a 10% level of statistical significance and standard errors are robust to heteroscedasticity. Table B.1 shows these results.

²⁰Additionally, the full results for regressions are presented in Table B.1.

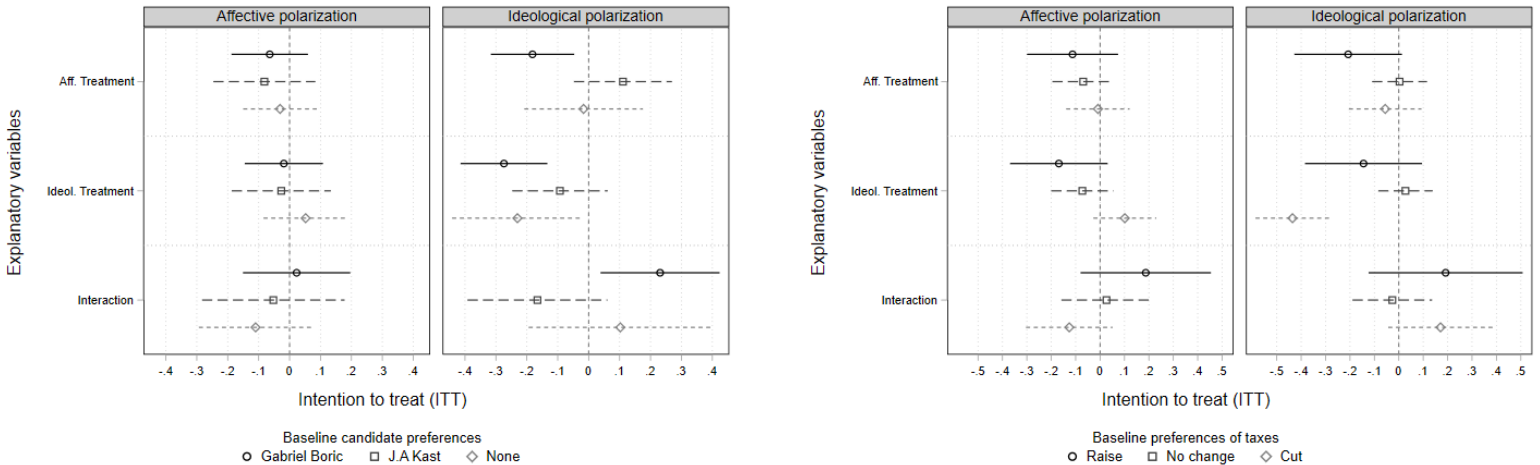
²¹As described before, using different variables and different ways to construct the outcome.

A possible explanation because why the affective depolarizing treatment does not have an impact on affect, would be that in the highly polarized context of Chile, depolarizing people can be a complex task. It may even be that the reaction of the voters is heterogeneous and that some may perceive the treatment as a positive shock towards the opinion of the candidate, and others may perceive the information as a negative factor. Because different subgroups could respond differently to treatments, and treatments depends on baseline preferences, it's important to assess heterogeneous effect.

First, I assess heterogeneous effect by baseline preferences on candidates and taxes. Surprisingly, Figure 11 show that, although the manipulation checks of the affective treatment are not met for any group, for those who present left-wings preferences this treatment has statistically significant effects on ideological polarization, consistent with hypothesis H2. For example, on Boric supporters the affective treatment reduces in 0.18 standard deviations ideological polarization (at 5% of statistical significance) and for those who preferred raise taxes the ITT is -0.21 (nearly at 10% of statistical significance). Given that the sample sizes are substantively reduced when looking at subgroups, it is unclear whether the effect is due to lack of power or no effect.

These finding are robust for other measures of left-wing identity. For example, in the Figures B.6 and B.7, we present the same results differentiating by partisan identity and left-right spectrum self-identification.²² The first figure reflects those respondents on the left reacted more to both treatments, but only the affective treatment had statistically significant effects on ideological polarization at 10%. In addition, for those who self-reported more affinity for the left, the only statistically significant effect is for affective depolarizing treatment impact on ideological sorting.

Figure 11: ITT for equations 1 and 2 by candidates and taxes preferences, respectively



Note: Regressions are in line with Figure 10

Then, as evidenced by Rogowski and Sutherland (2016), people who show a less interest in politics have to respond more strongly to depolarizing treatments. Figure B.8 shows that the manipulation check for ideology is only fulfilled in those who are somewhat interested. However, the most interesting result is that affective treatment has statistically significant effects

²²This is the political position on a 0-10 scale, from left to right. This question comes from a previous wave and covers 1,379 respondents in our sample (64.65%). We do not have pre-treatment values of this question for the fresh sample, only post-treatment.

on ideological polarization (in the order of -0.4 points)²³ in the same group. Still, heterogeneous effects by frequency of use in social networks shows that only the manipulation check of ideological treatment tends to be fulfilled (Figure B.9). One explanation could be that Boric voters and left id respondents are more interested in politics (see figures B.3 and B.4), which is the opposite of Rogowski and Sutherland (2016) findings.

In summary, it is observed that affective treatment has effects on the ideological position in a more polarized group (Boric voters),²⁴ while the same occurs in a group more interested in politics. These results contradict both part of the existing literature and the hypotheses raised at the beginning.

Finally, after the treatment video, the survey included an open-ended question for respondents to comment, and at least two third of respondents actually commented on them – varying from 62-71% over the different treatments. Reviews of the comments confirmed that respondents who comments watched the videos. The other respondents probably also watched the videos, as they play-out automatically and respondents were only able to advance to the next question after the video ended. But, in contrast with those who commented, we have no additional way to ascertain it. Hence, we conceptualize the explanatory variable as intention to treat.

Analyzing the content of comments to the open-ended question after the treatments, we find that respondents presented with the tax treatment videos often gave polarized responses, such as *“It’s horrifying, it blames the common citizen for selfish decisions of those who prefer to close a business rather than pay people decently“*. But many respondents thought the videos were informative, as in *“The truth is that everything he said is true and the video is well explained in such a short time,”* *“interesting and debatable,”* and *“Yes, we really should see taxes as an investment or contribution to our society so that the State distributes it to those who need it.”* Regarding the candidates’ videos, responses were generally more polarized, including several offensive comments. Even though, a few respondents appreciated some features of the opposing candidate (e.g., *“Nice family,”* or *“I like Boric a little, but he doesn’t convince me.”*).

Additionally, since commenting is a reliable source of treatment receipt, we test the main equations—and their heterogeneous effects—only for commenters and the control group. Starting from the general effects (Figure B.14), quite similar results to those of Figure 10 are observed. The same thing happens, for example, when we see heterogeneous effects by baseline preferences in candidates, showing that treatment compliance is quite reliable.

Electoral effects of polarization:

Starting from turnout²⁵, OLS regressions (Table 3) shows that a marginal increase in affective polarization increases the probability of going to vote by 3 percentage points on average, while a marginal increase in ideological polarization decreases it by 1.6%. However, when individuals’ controls are included, the effect of affective polarization is reduced to 0.9% and there are no statistically significant effects for ideology.

In addition, this effect is concentrated in the probability of being sure about voting (column 1, Table B.3), where a marginal increase in affective polarization implies a 1.9% increase in the

²³For time reasons, figures from Figure B.6 to B.14 are not standardized

²⁴For a complete view of the treatment effects on other measures of ideological polarization see Figures B.10 to B.13

²⁵Which variable takes value 1 if the post-treatment person believes that they will vote very confidently or somewhat confidently in the presidential runoff, and zero in another case.

probability of voting with confidence in the presidential runoff. In the same table, however, it is observed that affective polarization has a negative impact on the probability of voting with some certainty and with little certainty, in addition to being a predictor of the probability of not voting with certainty²⁶. Thus, this presents preliminary evidence that, at least in the Chilean context, affective polarization may be a stronger predictor of voter turnout than ideology.

Table 3: OLS regression for turnout and vote choice in runoff

| | (1) | (2) | (3) | (4) |
|--------------------------|----------------------|---------------------|----------------------|-------------------|
| | Turnout | Turnout | Vote choice | Vote choice |
| Affective Polarization | 0.030*** (0.002) | 0.009*** (0.002) | -0.044*** (0.003) | 0.003* (0.002) |
| Ideological Polarization | -0.016*** (0.004) | -0.005 (0.004) | 0.010** (0.005) | -0.000 (0.004) |
| Individuals controls | | ✓ | | ✓ |
| Observations | 2111 | 2103 | 1576 | 1569 |
| R^2 | 0.101 | 0.217 | 0.182 | 0.651 |
| Adjusted R^2 | 0.100 | 0.203 | 0.181 | 0.642 |

Note: *Turnout* takes value 1 if the subject, post-treatment, was sure or quite sure to vote in the presidential runoff, and 0 otherwise. *Vote choice* takes value 1 if the subject, post-treatment, decided to vote for a not preferred candidate on the baseline, and 0 otherwise. In this regressions I excluded the control group. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

For heterogeneous analysis, in Table B.5 is observed that for those who have preferences for Gabriel Boric (column 1), a marginal increase in affective polarization has an effect of 0.7 percentage points on the probability of voting in the runoff, while ideology seems to have an effect of similar magnitude but in the opposite direction. Likewise, those who do not have basic preferences (column 2) present a greater marginal effect for affective polarization of 2.5 percentage points. For Kast' voters (column 3), however, no statistically significant effects are found. This would suggest that, since the individuals without preferences are the least affectively polarized, a marginal increase in this generates a greater turnout compared to the other groups.²⁷

In a similar way, in Table B.6 it is observed that only those who are not so interested in politics (column 3) and somewhat interested, have statistically significant effects of affective polarization -but not ideological- on turnout, by 0.9 and 1.1 percentage points, respectively.²⁸

For the case of vote choice, defined as the decision to vote for a non-preferred candidate (vote choice=1) or not (vote choice=0), the results presented in Table 3 indicate that, after including controls, the marginal effect of affective polarization increases the probability of voting (measured post-treatment) for a pre-treatment non-preferred candidate by 0.3%, with statistical significance at 0.1%, being an extremely small magnitude. This shows that it is very difficult to change the preference for whom to vote by using depolarizing videos.²⁹

²⁶In a complementary way, Table B.4 shows an ordered probit, evidencing similar results as by OLS.

²⁷This is true also in the case of the heterogeneous effects according to preferences in the taxes, because those who do not present basic preferences are affected to a greater extent by ideological polarization, generating a marginal impact of 0.8 percentage points.

²⁸The same happens when analyzed by the frequency use of social networks for political purposes.

²⁹In addition, looking at the data, of the total of 2133 observations, only 5 respondents preferred a candidate pre-treatment and then post-treatment indicated that they preferred to vote for the opposite. The rest of the individuals marked as *vote choice=1* were concentrated in those who had no preferences for either, but then indicated preferences for voting for one of the two candidates.

As discussed in the methodology, political affect and ideology can be endogenous regressors. For this reason, we decided to use the instrumental variables’ approach, where the instruments for both types of polarization are the affective and ideological treatments. Nevertheless, since in the overall only the manipulation check for ideology is fulfilled, Table 4 presents a regression only including this variable instrumented with it’s treatment, where the outcome is the intended turnout. Results confirms that there are no effects of ideological polarization on turnout. Also for vote choice (Table 4), when controls are included, there are no statistically significant effects.

Table 4: IV regression only for ideology

| | (1) | (2) | (3) | (4) |
|--------------------------|-------------------|-------------------|--------------------|------------------|
| | Turnout | Turnout | Vote choice | Vote choice |
| Ideological Polarization | -0.096 (0.065) | -0.054 (0.046) | 0.156** (0.077) | 0.043 (0.032) |
| Individuals controls | | ✓ | | ✓ |
| First stage F Test | 11.03 | 19.72 | 11.03 | 19.72 |
| Observations | 2117 | 2109 | 2120 | 2112 |
| R^2 | -0.188 | 0.161 | -0.505 | 0.635 |
| Adjusted R^2 | -0.188 | 0.146 | -0.506 | 0.628 |

Note: Ideological treatment is used as instrument for ideological polarization. Vote choice takes value 1 if the subject, post-treatment, decided to vote for a not preferred candidate on the baseline, and 0 otherwise. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Also when looking at heterogeneous effects, in some cases manipulation checks and hypotheses are fulfilled, so I can use the instrumental variables’ approach for specific groups (both ideology or affect). However, in all cases there are no statistically significant effects for both affective and ideological polarization. Given the OLS results, this could be explained by the reduction in the sample size or the simple existence of no causal relationship.

5.2 Plebiscite study

5.2.1 The prime experiment

The plebiscite study relies, first, on a priming experiment to elicit individual affective polarization, which allows us to causally identify its effects in an unobtrusive way. The treatments asked respondents to write down at least three things that they dislike about the outgroup voters. We start by checking that the treatment actually manipulated affective polarization, and then move to the effect on other outcomes, including ideological polarization, support for democracy, and turnout. We posit that our priming treatment should affect these outcomes only or majorly through affective polarization. We focus on the reduced form estimates, leaving the instrumental variable results that use our treatment as an instrument for affective polarization to the Appendix.³⁰

We estimate reduced form estimated by OLS, presenting two main specifications: 1) without controls, 2) controlling for sociodemographic variables (age, sex, region, education, and socioeconomic status), left-right ideology (in three groups), interest in politics, party ID, and baseline preferences for the past runoff and the plebiscite. All our dependent variables are standardized,

³⁰For the IV estimations, we use the summary index described in the Section 4. The IV’s first stage provides an F-test of 13.06.

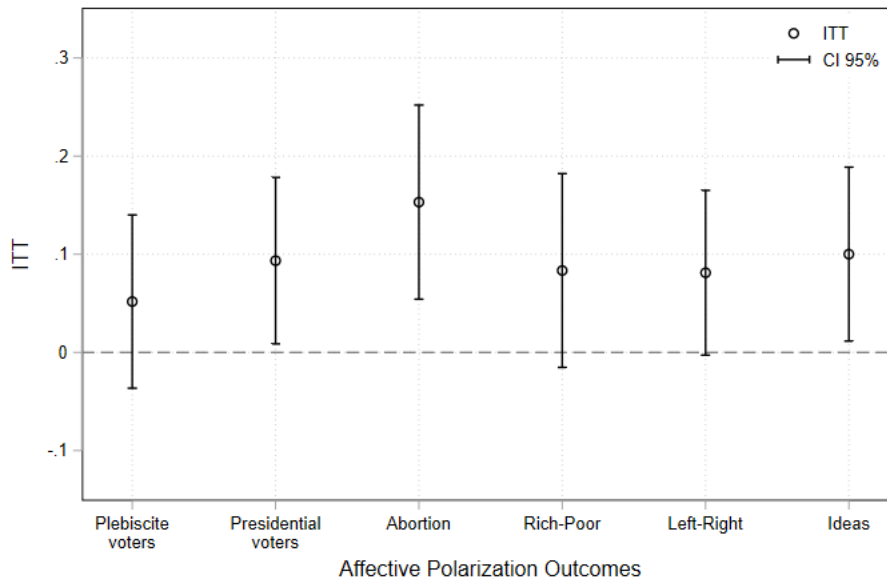
and errors are robust.

We further study two relevant subgroups, defined based on the expected treatment effect. First, we look at those who have a baseline plebiscite choice, who correspond to 85,3% of the sample, and who we call “partisans.” For respondents without a clear stance, it is not even clear that they have an ingroup/outgroup, and thus, it is unlikely that the treatment will “activate” their affective polarization. Second, we look at results for the subset of respondents who took the treatment/placebo more seriously, proxied by the number of characters they wrote. The average number of characters was 104 for the treatment and 90 for the placebo, statistically different at the 0.1% level. Thus, we look at those who were above the median and above the 25th percentile in each group.

Manipulation checks:

The validity of the prime experiment rests on whether it successfully manipulated affective polarization. Figure 12 shows the treatment effects on several measures of affective polarization, all of which are standardized (see Table C.1, Panel A). All the effects are positive and in the same order of magnitude, ranging from 5%-15% of a standard deviation. For the cases of abortion, presidential candidate, and evaluation of plebiscite options ideas, the coefficients are significant at the 95% level; for polarization of the rich-poor, and left-right, they are significant only at the 90% level. Interestingly, the result for the plebiscite’s affective polarization is not statistically significant; possibly due to ceiling effects. These results are similar when looking at partisans, and generally slightly stronger among respondents who are in the top 50% of written characters, although not statistically different (see Figure C.1) These results confirm that our prime experiment effectively enhanced respondents’ affective polarization.

Figure 12: Effect of treatment on affective polarization I (manipulation check)

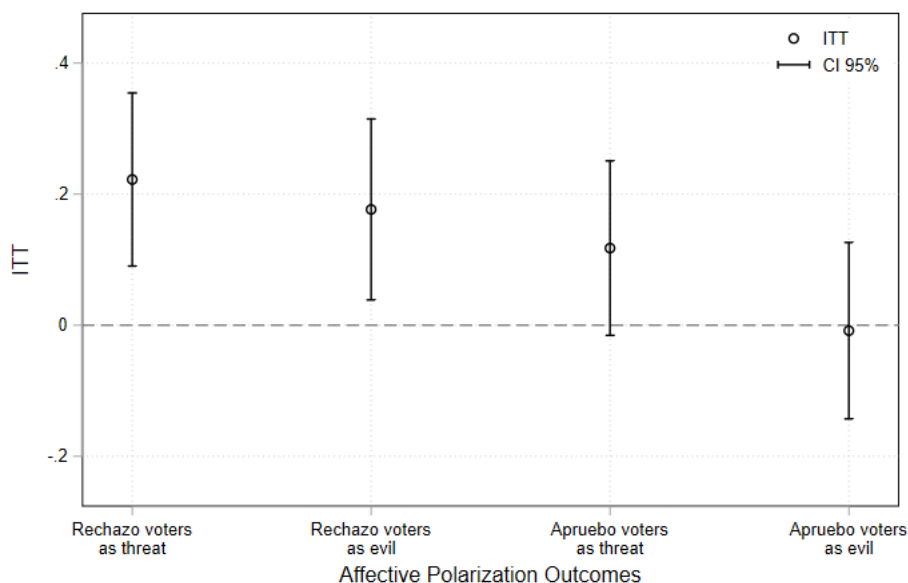


Note: Own elaboration using survey data. Each point correspond to the coefficient of six OLS regressions, using different measures of affective polarization (outcome).

Figure 13 presents the results for two additional affective polarization outcomes: whether the outgroup voters are “a threat to Chile and its people,” or if they are “downright evil” (Kalmoe and Mason, 2022; see Table C.1, Panel B). *Apruebo* voters answered these questions regarding

Rechazo voters, and vice versa. Respondents without a clear preference received a random option. These questions arguably point more directly to the idea of despising the outgroup of voters, and consequently show stronger results. Receiving the treatment significantly increases the chances of considering the outgroup as a threat or as evil in 0.19 and 0.1 standard deviations, respectively. In both cases, results are greater among *Apruebo* voters, indeed, the effect in the extent to which *Rechazo* voters believe that *Apruebo* voters are a threat is significant only at the 90% level and there is no effect in the extent to which they believe that *Apruebo* voters are evil (although the differences in the coefficients by vote choice are not statistically significant). These results reinforce the effectiveness of our affective-polarization-inducing treatment.

Figure 13: Effect of treatment on affective polarization II (manipulation check)



Note: Own elaboration using survey data. Each point correspond to the coefficient of four OLS regressions, using different measures of affective polarization (outcome).

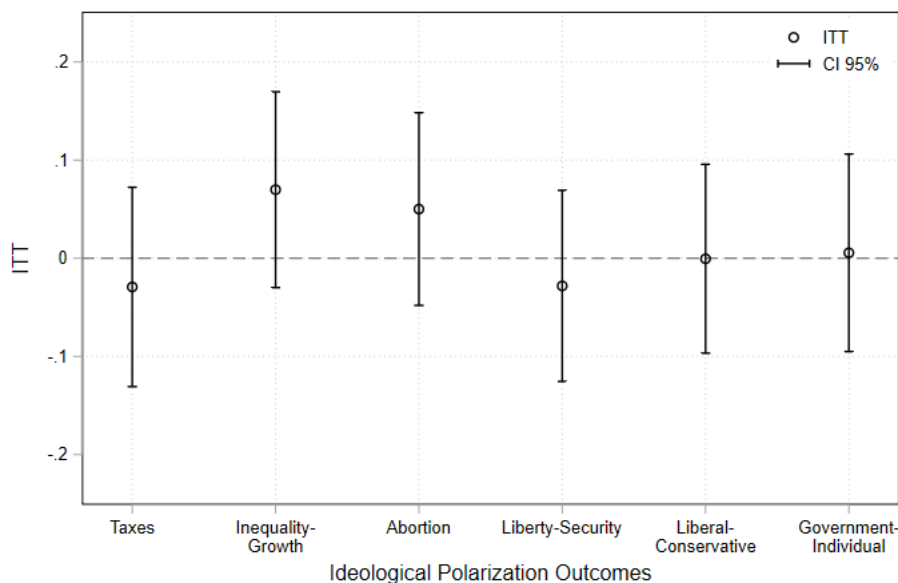
Prime experiment results:

Figure 14 presents the reduced form results for our six measures of ideological polarization (see Table C.2). The coefficients show varying signs and none of them is statistically significant. These results barely change when looking at partisans or those who are in the top 50% in length written (not shown). Thus, overall, we do not find clear direct effects of inducing affective polarization on ideological polarization.

Heterogeneous effects by plebiscite choice, presented in Figure 15, do not show relevant differences across ideological polarization measures (see Table C.3). There are some indications of a positive treatment effect among *Rechazo* voters in the measures of Inequality-Growth and Government-Individual, although only the difference between *Rechazo* voters and those without preference in the case of Inequality-Growth is statistically significant (95% level). We have limited power when dividing the sample, but these results in two related economic policies suggest that *Rechazo* voters could increase their ideological polarization in this area when their affective polarization is enhanced. However, in the presidential survey, we did not find an effect of our affective treatment among *Kast* voters or right-wing respondents. Likewise, in the plebiscite survey we do not find support for a positive effect of our affective polarization treatment on ideological polarization among *Apruebo* voters, as we did in the presidential survey for *Boric* voters (we neither find this result for *Boric* voters; not shown for reasons of space). Thus, we

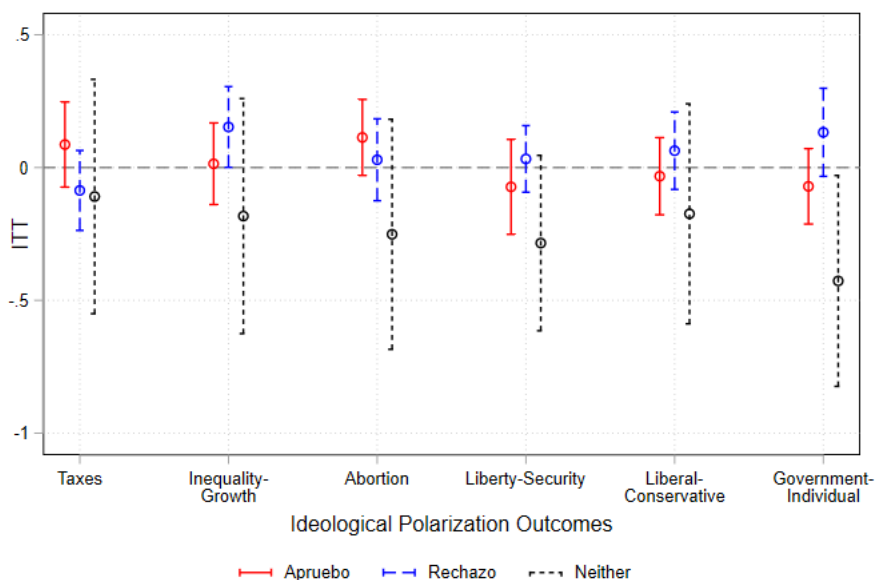
conclude that the effects of affective polarization on ideological polarization by political camps in Chile should be studied further.

Figure 14: Treatment effect on ideological polarization



Note: Own elaboration using survey data. Each point correspond to the coefficient of six OLS regressions, using different measures of ideological polarization (outcome).

Figure 15: Heterogeneous treatment effect on ideological polarization by plebiscite choice



Note: Own elaboration using survey data. Each point correspond to the coefficient of six OLS regressions, using different measures of ideological polarization (outcome), by plebiscite choice.

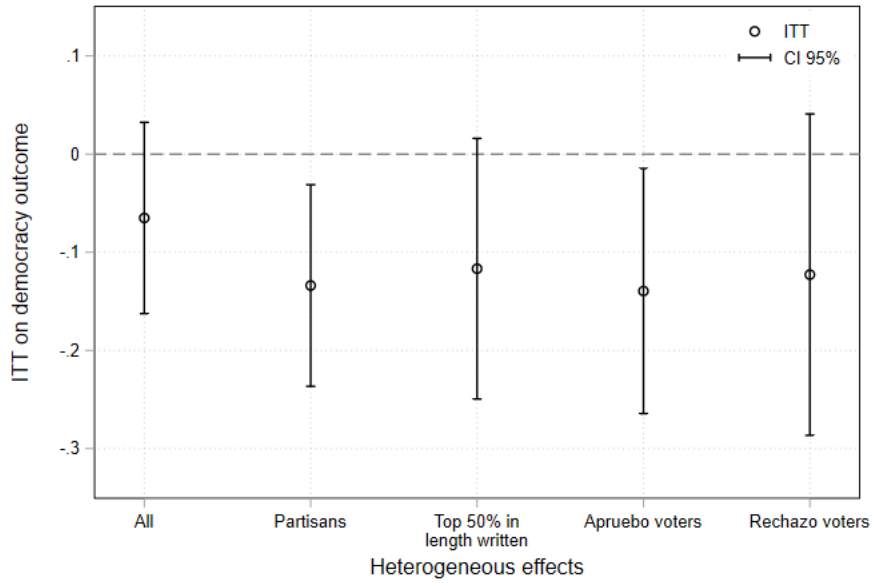
Figure 16 presents the results for support for “democracy as the best system of government,” for different groups of respondents (see Table C.4, Panel A). Although results are not always significant, we consistently find a negative treatment effect ranging from 0.07 to 0.14 of a standard deviation. This effect is especially strong among partisans, reducing support for democracy in 0.13 standard deviations, and significant at the 95% level. These results are in line with

extensive research establishing a democratic risk of affective polarization (Simonovits et al., 2022; Graham and Svobik, 2020).

As expected, the IV results for support for democracy follow the same pattern (Table C.4, Panel B). The results for partisans are strong and significant at the 99% level. They suggest that a 1-standard-deviation increase in the affective polarization index has a negative effect of 1.19 standard deviations in support for democracy which is a substantive and theoretically relevant effect.

Finally, we do not find any effects on intended turnout. We should note that voting was mandatory for the plebiscite and that, indeed, 86% turned out to vote on September 4th. Thus, it was a hard case to find an effect of affective polarization in turnout.

Figure 16: Treatment effect on support for democracy, by groups



Note: Own elaboration using survey data. Each point correspond to the coefficient of democracy outcome regressions, by different groups.

5.2.2 The randomized speaker experiment

The second plebiscite experiment asks respondents their agreement with three statements declared by “a person” who is randomly said to vote for *Apruebo* or *Rechazo*, who we call “the speaker” in order to assess to what extent responses vary depending on whether the respondent supports the speaker’s same or opposite option. As explained in Section 3.2.2, we include three statements in random order: an economic policy (tradeoff between inequality and growth), a social policy (abortion), and a view on democracy (whether it is justified to shut congress in a crisis). We use the following specification:

$$Agreement_i = \beta_0 + \beta_1 Same_i + \beta_2 Position_i + X_i' \gamma + \varepsilon_i \quad (5)$$

Where *Same* is an indicator for whether the speaker and the respondent i have the same voting preference and X is the same set of control variables as above. Note that given that we randomized the speakers position, *Same* is a random variable. We also control for *Position*, the respondent’s position in the same or a very similar question that was asked before the randomized speaker experiment, and was unmediated (i.e., without a speaker). We mostly focus

these analyses on partisans, for whom *Same* is a relevant variable and, thus, β_1 corresponds to the effect of the speaker’s vote choice being the same vs. the opposite as the respondent’s. In a second specification, we further explore if the priming treatment changed the effect of *Same*:

$$Agreement_i = \beta_0 + \beta_1 Same_i + \beta_2 Position_i + \beta_3 Treat + \beta_4 Same \times Treat + X_i' \gamma + \varepsilon_i \quad (6)$$

Table 5 summarizes the results for the economic and social statements. For inequality-growth, we find that having the same position than the speaker increases the probability of agreeing is approximately 0.4 standard deviations, while for abortion it does so in 0.24; both highly significant. There is no effect of the priming treatment for inequality-government, but in the case of abortion, it importantly reinforces the effect of having the speaker’s same position, with an interaction of 0.16 standard deviations, significant at the 95% level.

Table 5: Agreement with ideological statements (only partisans)

| | Inequality-Growth | | Abortion | |
|----------------------------|---------------------|---------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) |
| Same plebiscite preference | 0.420*** (0.048) | 0.432*** (0.066) | 0.243*** (0.039) | 0.169*** (0.054) |
| Same×Treatment | | -0.024 (0.095) | | 0.155** (0.078) |
| Individual controls | ✓ | ✓ | ✓ | ✓ |
| Observations | 1262 | 1262 | 1263 | 1263 |
| R^2 | 0.352 | 0.352 | 0.553 | 0.555 |

Note: The first two columns correspond to the economic statement (prefer economic growth instead of solving inequality), and (3) to (4) to the social statement (always allow abortion). Robust standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01

Regarding support for the antidemocratic stance, depicted in Table 6, we find that when it is a co-partisan speaker who argues for shutting congress, agreement with the statement increases in around 0.2 standard deviations. This coefficient is stable and highly significant for partisans, for those in the top 50% of words written in the priming experiment, and for *Apruebo* and *Rechazo* voters. The interaction between *Same* and *Treat* is not statistically significant in any of these cases (not shown). These results are in line with the result of the priming experiment, where we found a negative effect of affective polarization on support for democracy.

Table 6: Agreement with antidemocratic stance, by groups

| | (1) All | (2) Partisans | (3) Top 50% length written | (4) Apruebo | (5) Rechazo |
|----------------------------|---------------------|---------------------|-------------------------------|--------------------|--------------------|
| Same plebiscite preference | 0.201*** (0.053) | 0.183*** (0.055) | 0.175** (0.074) | 0.165** (0.079) | 0.179** (0.079) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1483 | 1264 | 736 | 610 | 653 |
| R^2 | 0.112 | 0.114 | 0.121 | 0.165 | 0.138 |

Note: The anti-democratic stance corresponds to the justification of shutting the congress under challenging times and governing without it. Robust standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01

6 Conclusions

We use two online survey experiments to study polarization in a Latin American country and improve our understanding of the relationships between ideological and affective polarization. Both surveys were conducted in a highly polarized context: the 2021 presidential runoff in Chile, on December 19, and of the Constitutional Plebiscite on September 4, 2022, when Chileans had to approve (*Apruebo*) or reject (*Rechazo*) a new constitution drafted by a Constitutional Convention. In the first one (called Presidential study), we implemented an experiment that randomized a 2x2 treatment. On one arm, we randomized whether respondents receive a video showing positive non-ideological biographical information from their opposing candidate, intended to reduce their affective polarization (Rogowski and Sutherland 2016), while not affecting their ideological polarization. The second arm, randomizes whether they receive a video providing information supporting the opposite position they have toward taxes, designed to affect their ideology, but not their affective polarization. After treatment, we measure affective and ideological polarization, and intended electoral behavior.

The second survey (called the Plebiscite study) included two experiments. First, we induced (short-lived) affective polarization with an unobtrusive primer, whereby we randomly asked respondents to write down things they do not like about the outgroup (voters of *Apruebo/Rechazo*). We then measure affective and ideological polarization, intended turnout, and views about democracy. The second plebiscite experiment takes another angle to study the extent to which affective polarization affects people’s opinions on relevant issues: attitudes toward democracy, and economic and social policy issues.

Our two studies show no consistent direct causal effects of affective polarization on ideological polarization, nor vice versa. While some interesting results take place in the Presidential study for the left-wing group, it was not fruitful in the Plebiscite study, maybe because of lack of power on subgroups. Also, for the intended turnout behavior, we find some correlation between affective polarization and turnout, but no causal evidence. This finding, however, is important for the growing literature on the issue. Yet, and more interesting, when ideological positions are presented as said by a voter of the respondent’s choice, agreement with the stance increases dramatically. For the case of abortion, this is even more so if affective polarization had been enhanced by the affective-polarization-inducing treatment.

Thus, while affective polarization does not induce ideological polarization in the abstract, we find large effects on ideology when stances come from a co-partisan speaker. This finding suggests that when mediated by speakers, affective polarization does influence ideological polarization: it may importantly affect people’s ideological positions due to merely affective responses to the political camp of the speaker. Certainly, it is not new that citizens’ views are influenced by others’ and there is extensive research on how elite position-taking affects voter attitudes (e.g., D. E. Broockman and Butler, 2017). But this is not the case in our study, which just mentions a hypothetical, anonymous person who happens to share (or not) the respondent’s vote choice. In our case there is no kind of shared identity or trust, the effect of the speaker’s partisanship is closest to an affective response.

Notably, in real life, ideological choices mostly come attached to speakers who have positions, since citizens generally vote for representatives. That is why our results of an indirect link from affective to ideological polarization are relevant. In a pure world of ideas, people’s views on important issues such as the priority given to inequality vs. growth, abortion, or democracy, should not depend on who the messenger is.

Finally, we find strong support for affective polarization undermining citizens' democratic attitudes. The negative effect of the prime experiment in support for democracy is further reinforced by the results of the second experiment, where there is a large effect of having the same position than the speaker in supporting an antidemocratic stance. These results make polarization a sensitive matter for a region with weak democratic records.

The novel characterization of political polarization in a developing country and the relevant experimental findings showing in this project, enhances how is necessary to attack the roots of affective polarization -such as social networks- to avoid greater ideological sorting, political stagnation and democratic backsliding. As *The Economist*³¹ said about the last presidential elections in the region: "It is the kind of polarized choice that has become worryingly familiar in Latin America". Because of that, the situation on polarization has to be studied more thoroughly and extensively, with special focus on developing and undeveloped countries.

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³¹See <https://www.economist.com/leaders/2022/06/16/latin-americas-vicious-circle-is-a-warning-to-the-west>, visited on June 23, 2022.

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Appendices

Causes and consequences of political polarization

Although one of the main hypotheses of this research is framed in studying how one type of polarization can cause another, there is an abundant literature that puts a different focus to avoid the main causes of polarization. This is important because it allows to understand how relevant the effects of polarization in society are.

There is considerable experimental evidence associated with the effects of the media and exposure to social networks on the levels of both ideological and affective polarization. However,

the results are controversial. For example, Bail et al. (2018) and Di Tella et al. (2021) evidence that the exposure to out-party news information increase polarization in US citizens. Nevertheless, Levy (2021) shows that exposure to pro-attitudinal news increases affective compared to counter-attitudinal news. Also, Campante and Hojman (2013) shows that the introduction of broadcast TV in the US decreased the ideological extremism and turnout of US representatives. However, it's important to point out that it's possible that affective polarization increases in the last decade have not been explained in most part by social media (Boxell et al., 2017).

Besides, there exists evidence that stands out the effects of political advertisements on affective polarization. For example, Sood and Iyengar (2016) find that exposure to televised political advertising has strong effects on affective polarization, especially on negative advertising. This reinforces the idea that the media can drive affective and ideological polarization, either through the interaction of users, the news received or the political propaganda.

In terms of economic issues, other important drivers of polarization are income inequality, unemployment and financial crisis. For example, Gu and Wang (2021) studies the relationship between income distribution and political polarization using cross-sectional data and find that there is a positive and statistically significant cross-country association -however, not causal- between levels of income inequality and political polarization. Moreover, Gidron et al. (2018) find that affective polarization is more intense where income inequality and unemployment are high, and in countries with majoritarian political institutions. As below, López and Ramírez (2004) analyze the cyclical component of polarization driven by economic conditions and find that unemployment is associated with party polarization in the House. This evidence shows how economic recessions and financial crises can be an explanatory factor of the levels of political polarization (Funke et al., 2016; Eichengreen, 2018).

Then, regarding the consequences of both ideological and affective polarization, divergent and important effects have been evidenced in the political, social and economic context. This is crucial especially for developing countries like Chile.

In social terms, there is plentiful literature that studies how interpersonal relationships can be affected by polarization. Specifically for affective polarization, negative effects on social relationships such as physical attraction, marital affinity, and friendships have been demonstrated (Nicholson et al., 2016; Stoker and Jennings, 1995; Huber and Malhotra, 2017; Chopik and Motyl, 2016). Also in prices and market products (Michelitch, 2015; McConnell et al., 2018; Panagopoulos et al., 2016), and in the labor market, such as in the demand (Gift and Gift, 2015) and supply (McConnell et al., 2018).

Moreover, in terms of economic development, polarization in general has led to higher levels of political stagnation (Binder, 1999; Jones, 2001), which implies, as discussed in Campante and Hojman (2013), in low rates of political innovation and a lower capacity to adapt to changes in economic, social or demographic circumstances (McCarty, 2011). This in turn is associated with an increase in social and political unrest, which has indeed been shown to have implications for economic growth (e.g., Alesina et al., 1996). Likewise, polarization can lead to discrepancies regarding what the government apparatus is, specifically as it is negatively related to public spending (Lindqvist and Östling, 2010) and to a decrease in trust in the government, especially when the opposing party is in the power (Hetherington and Rudolph, 2015).

A Descriptive

Figure A.1: Affective and ideological polarization during election year

| Survey dates | Election year | AFFECTIVE POLARIZATION | | IDEOLOGICAL POLARIZATION | |
|---------------|----------------------|--------------------------------------|----------------|--------------------------------------|----------------|
| | | Voters of runoff election candidates | Overall | Voters of runoff election candidates | Overall |
| Oct-Nov 2005 | 2005 | 2.19 (0.07) | 2.08 (0.06) | 1.45 (0.06) | 1.61 (0.05) |
| Oct-2009 | 2009 | 3.40 (0.08) | 2.94 (0.06) | 1.75 (0.07) | 1.56 (0.05) |
| Sept- 2013 | 2013 | 4.23 (0.14) | 3.55 (0.11) | 1.57 (0.11) | 1.47 (0.08) |
| Sept-Oct 2017 | 2017 (pre-election) | 3.37 (0.10) | 3.04 (0.08) | 2.11 (0.08) | 1.80 (0.07) |
| Oct-Nov 2018 | 2017 (post-election) | 2.90 (0.14) | 2.74 (0.09) | | |
| Abr-May 2022 | 2021 (post-election) | 3.84 (0.12) | 3.29 (0.09) | 1.60 (0.11) | 1.40 (0.07) |

Note: Standard errors are included under the estimated mean in parenthesis. Own elaboration based on CEP Surveys

Figure A.2: Summary of quotas

| | Target sample distribution |
|----------------------------|----------------------------|
| Socioeconomic group | |
| ABC1 | 17% |
| C2 | 21% |
| C3 | 21% |
| D | 25% |
| E | 17% |
| Age group | |
| 18-29 | 20% |
| 30-45 | 28% |
| 46-60 | 28% |
| 60más | 25% |
| Geographical area | |
| Capital city | 42% |
| Northern regions | 29% |
| Southern regions | 29% |
| Gender | |
| Men | 50% |
| Women | 50% |

Table A.1: Descriptive statistics for individual variables by treatment groups

| Variables | Treatment Groups | | | | |
|--|------------------|-------|---------|-------|-------|
| | AT | IT | Control | AT+IT | Total |
| Affective Polarization | 4,90 | 5,20 | 5,31 | 5,18 | 5,14 |
| Ideological Polarization*** | 1,84 | 1,52 | 1,87 | 1,65 | 1,73 |
| Turnout [0,1]* | 83,6% | 86,3% | 86,5% | 88,9% | 86,3% |
| Boric's video | 41,9% | | | 41,3% | 21,0% |
| Kast's video | 58,1% | | | 58,7% | 29,5% |
| Increase taxes video | | 65,0% | | 63,0% | 31,1% |
| Reduce taxes video | | 35,0% | | 37,0% | 17,5% |
| Turnout in first run | 82,4% | 83,5% | 84,8% | 84,4% | 83,8% |
| Vote choice | 19,8% | 15,7% | 17,4% | 13,5% | 16,7% |
| Baseline levels of candidate preferences | | | | | |
| <i>Gabriel Boric</i> | 44,3% | 45,3% | 46,0% | 48,5% | 46,0% |
| <i>J.A. Kast</i> | 29,7% | 33,0% | 31,5% | 32,2% | 31,6% |
| <i>Other/None*</i> | 26,0% | 21,7% | 22,5% | 19,3% | 22,4% |
| Baseline levels of taxes preferences | | | | | |
| <i>Increase taxes</i> | 17,8% | 16,3% | 17,8% | 19,5% | 17,9% |
| <i>Stay the same</i> | 37,4% | 38,2% | 38,3% | 33,1% | 36,8% |
| <i>Reduce taxes</i> | 44,9% | 45,5% | 43,9% | 47,4% | 45,4% |
| Age | 47,3 | 46,9 | 47,2 | 46,2 | 46,9 |
| Female | 52,7% | 54,3% | 52,3% | 53,2% | 53,1% |
| Male | 47,3% | 45,7% | 47,7% | 46,8% | 46,9% |
| Socioeconomic status | | | | | |
| <i>High**</i> | 22,8% | 25,4% | 17,8% | 23,8% | 22,4% |
| <i>Mid-High**</i> | 19,1% | 20,1% | 26,8% | 22,4% | 22,1% |
| <i>Middle</i> | 20,7% | 20,1% | 20,3% | 18,7% | 20,0% |
| <i>Mid-Low</i> | 26,0% | 24,3% | 26,5% | 25,0% | 25,5% |
| <i>Low</i> | 11,4% | 10,1% | 8,6% | 10,1% | 10,1% |
| Education level | | | | | |
| <i>< Technical complete/University incomplete</i> | 31,6% | 32,0% | 29,3% | 32,6% | 31,3% |
| <i>< University complete</i> | 33,1% | 34,4% | 36,0% | 34,5% | 34,5% |
| <i>University complete/Graduate</i> | 35,3% | 33,6% | 34,7% | 32,9% | 34,2% |
| Party identity | | | | | |
| <i>Left</i> | 20,2% | 15,1% | 17,3% | 18,9% | 17,9% |
| <i>Center</i> | 4,5% | 5,2% | 6,2% | 3,9% | 5,0% |
| <i>Right</i> | 19,3% | 17,5% | 17,1% | 18,7% | 18,1% |
| <i>Other/None</i> | 56,1% | 62,2% | 59,5% | 58,5% | 59,0% |
| Interest in politics | | | | | |
| <i>Very interested</i> | 23,2% | 20,3% | 25,5% | 25,7% | 23,7% |
| <i>Somewhat interested</i> | 50,3% | 50,9% | 48,4% | 47,6% | 49,3% |
| <i>Not interested</i> | 26,5% | 28,8% | 26,1% | 26,7% | 27,0% |
| Frequency use of social media | | | | | |
| <i>Very much</i> | 33,5% | 30,6% | 36,4% | 35,7% | 34,1% |
| <i>Not much</i> | 29,5% | 31,8% | 27,0% | 29,8% | 29,5% |
| <i>None</i> | 37,0% | 37,6% | 36,6% | 34,5% | 36,4% |
| <i>N</i> | 535 | 497 | 533 | 513 | 2078 |

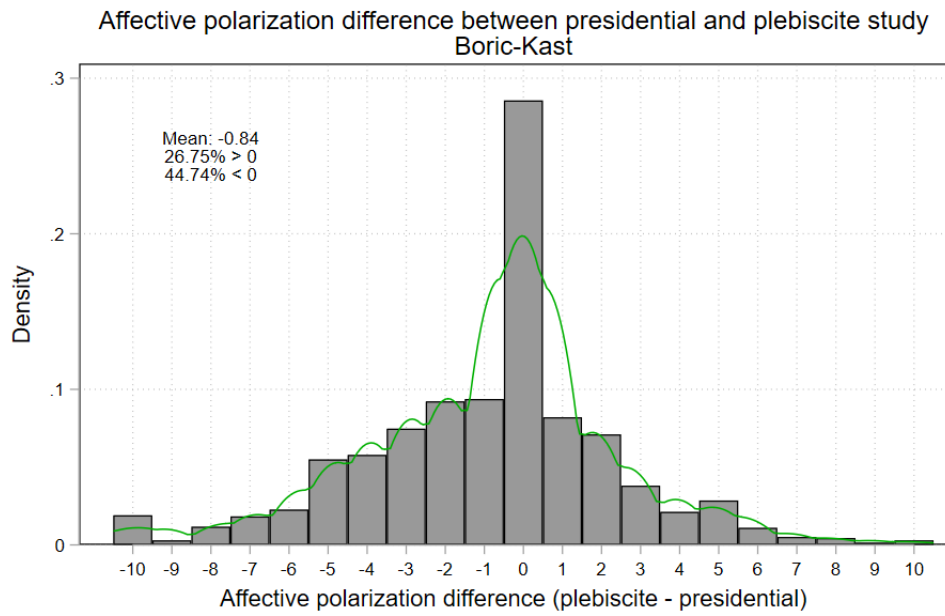
Note: The number of observations is quite low than in regressions, because of the intersection between different variables that contains missing values. For test mean differences between groups, we use the ANOVA test at values * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: Descriptive statistics for individuals' variables by candidate preference

| Variables | Baseline preferences of candidates | | | |
|--|------------------------------------|-----------|------------|-------|
| | Gabriel Boric | J.A. Kast | Other/None | Total |
| Affective Polarization ^{a***} | 6,78 | 5,84 | 1,54 | 5,31 |
| Ideological Polarization ^a | 2,00 | 1,64 | 1,95 | 1,87 |
| Turnout [0,1] ^{a***} | 95,9% | 90,5% | 61,7% | 86,5% |
| Boric's video | | 49,4% | 24,0% | 21,0% |
| Kast's video | 50,8% | | 27,0% | 29,5% |
| Increase taxes video | 27,7% | 37,2% | 29,4% | 31,1% |
| Reduce taxes video | 21,9% | 13,0% | 15,0% | 17,5% |
| Turnout in firts run ^{***} | 90,5% | 84,3% | 69,3% | 83,8% |
| Vote choice ^{***} | 0,2% | 0,5% | 73,2% | 16,7% |
| Baseline levels of taxes preferences | | | | |
| <i>Increase taxes</i> ^{***} | 29,2% | 5,0% | 12,7% | 17,9% |
| <i>Stay the same</i> ^{**} | 33,8% | 39,5% | 39,1% | 36,8% |
| <i>Reduce taxes</i> ^{***} | 37,0% | 55,5% | 48,3% | 45,4% |
| Age ^{***} | 45,2 | 49,9 | 46,2 | 46,9 |
| Female ^{***} | 54,0% | 47,0% | 60,1% | 53,1% |
| Male ^{***} | 46,0% | 53,0% | 39,9% | 46,9% |
| Socioeconomic status | | | | |
| <i>High</i> ^{***} | 22,4% | 26,1% | 17,2% | 22,4% |
| <i>Mid-High</i> | 21,7% | 24,1% | 20,4% | 22,1% |
| <i>Middle</i> | 18,5% | 21,0% | 21,5% | 20,0% |
| <i>Mid-Low</i> ^{**} | 26,5% | 21,8% | 28,5% | 25,5% |
| <i>Low</i> ^{***} | 11,0% | 7,0% | 12,4% | 10,1% |
| Education Level | | | | |
| <i>Technical complete/University incomplete</i> ^{***} | 29,9% | 28,7% | 38,0% | 31,3% |
| <i>= < University complete</i> | 34,5% | 35,2% | 33,5% | 34,5% |
| <i>University complete/Graduate</i> ^{**} | 35,6% | 36,1% | 28,5% | 34,2% |
| Party identity | | | | |
| <i>Left</i> ^{***} | 35,7% | 2,0% | 3,9% | 17,9% |
| <i>Center</i> | 5,5% | 4,3% | 4,7% | 5,0% |
| <i>Right</i> ^{***} | 1,8% | 51,2% | 5,2% | 18,1% |
| <i>Other/None</i> ^{***} | 57,0% | 42,5% | 86,3% | 59,0% |
| Interest in politics | | | | |
| <i>Very interested</i> ^{***} | 29,5% | 23,6% | 12,0% | 23,7% |
| <i>Somewhat interested</i> ^{**} | 52,4% | 48,3% | 44,2% | 49,3% |
| <i>Not interested</i> ^{***} | 18,1% | 28,0% | 43,8% | 27,0% |
| Frequency use of social media | | | | |
| <i>Very much</i> ^{***} | 42,8% | 33,7% | 16,7% | 34,1% |
| <i>Not much</i> ^{**} | 32,3% | 27,0% | 27,3% | 29,5% |
| <i>None</i> ^{***} | 24,9% | 39,3% | 56,0% | 36,4% |
| <i>N</i> | 956 | 656 | 466 | 2078 |

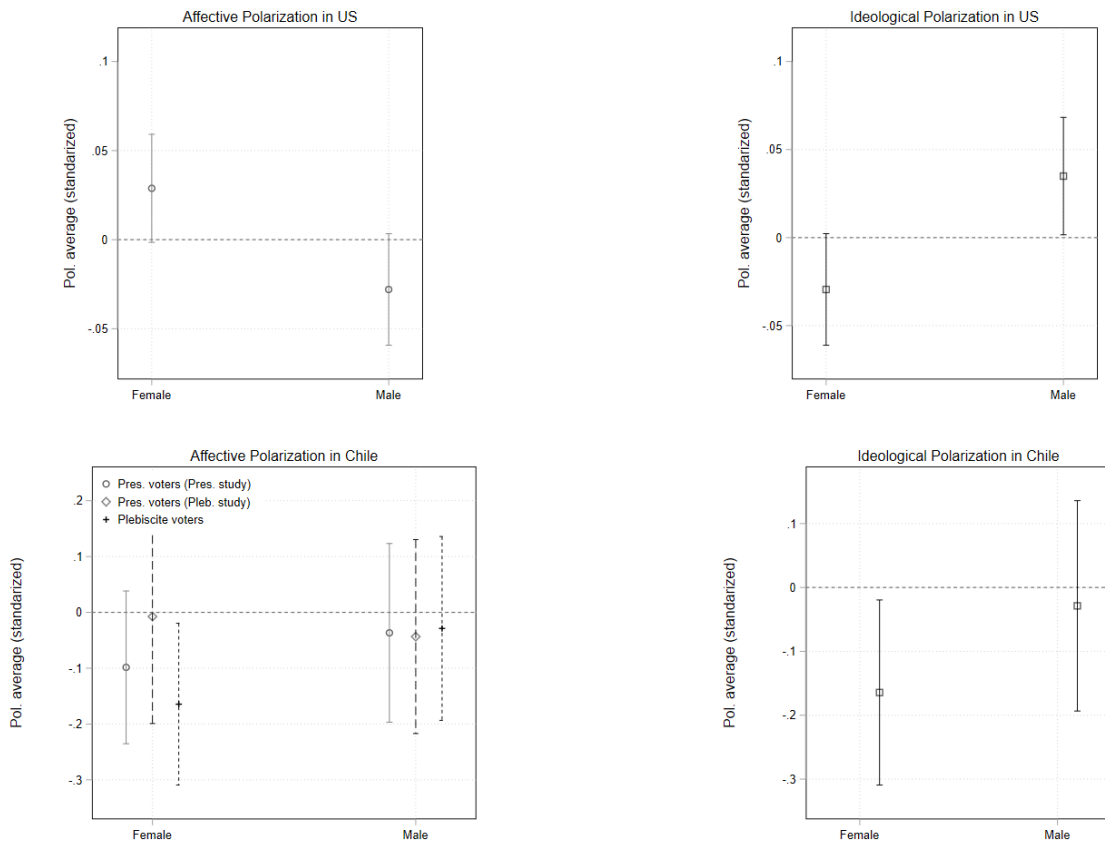
Note: The number of observations is quite low than in regressions, because of the intersection between different variables that contains missing values. For test mean differences between groups we use the ANOVA test at values * p<0.10, ** p<0.05, *** p<0.01. ^a Means calculate only for control group, because those are post-treatment

Figure A.3: Affective polarization persistence between both surveys



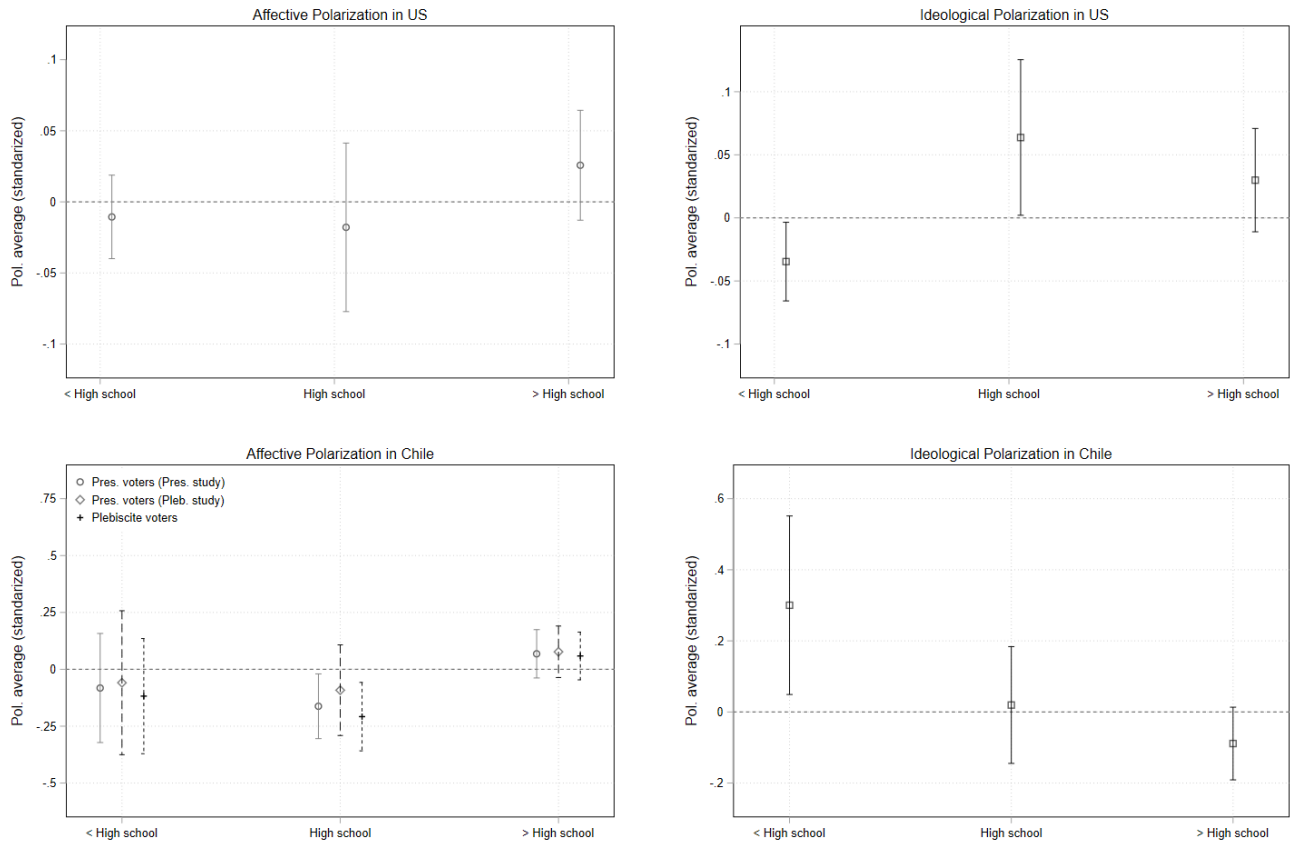
Note: Own elaboration using panel survey data. Figure show the distribution of the differences between presidential evaluation in both surveys.

Figure A.4: Comparative trends in affective and ideological polarization by sex



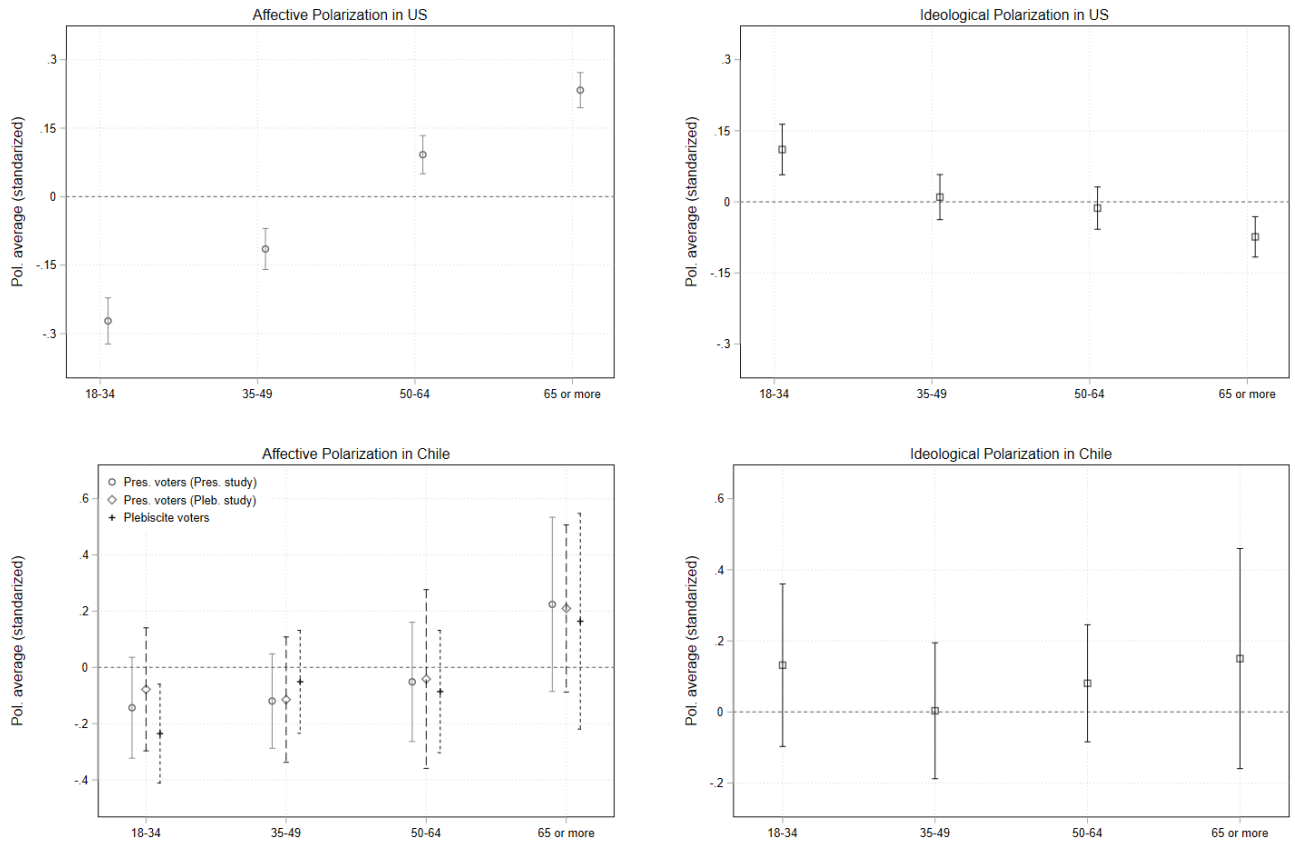
Note: Own elaboration using survey data

Figure A.5: Comparative trends in affective and ideological polarization by education



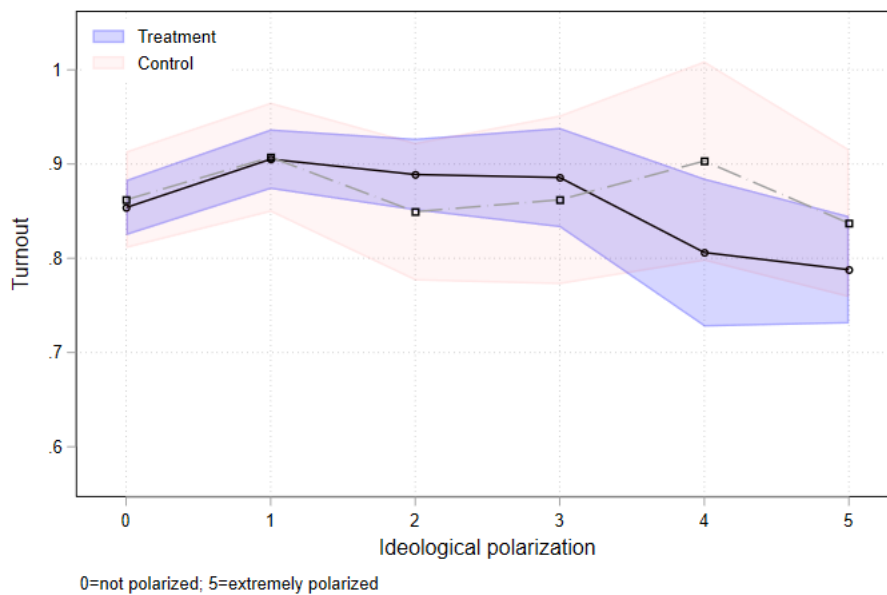
Note: Own elaboration using survey data

Figure A.6: Comparative trends in affective and ideological polarization by age



Note: Own elaboration using survey data

Figure A.7: Relationship between turnout and ideological polarization



Note: Own elaboration based on presidential study survey.

B Presidential study

Table B.1: OLS results for ITT on affective and ideological polarization

| | Affective polarization | | Ideological polarization | |
|---------------------|------------------------|---------------------|--------------------------|----------------------|
| | (1) | (2) | (3) | (4) |
| Aff. Treatment | -0.115* (0.061) | -0.069 (0.048) | -0.019 (0.060) | -0.050 (0.053) |
| Ideol. Treatment | -0.034 (0.061) | -0.014 (0.049) | -0.187*** (0.060) | -0.214*** (0.054) |
| Interaction | 0.102 (0.085) | 0.001 (0.068) | 0.085 (0.084) | 0.081 (0.076) |
| Constant | 0.000 (0.043) | -0.915** (0.361) | -0.000 (0.043) | 0.504 (0.571) |
| Individual controls | | ✓ | | ✓ |
| Observations | 2123 | 2115 | 2120 | 2112 |
| R^2 | 0.002 | 0.383 | 0.006 | 0.215 |
| Adjusted R^2 | 0.000 | 0.371 | 0.005 | 0.200 |

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.2: OLS results for ITT on affective and ideological polarization, by baseline preferences

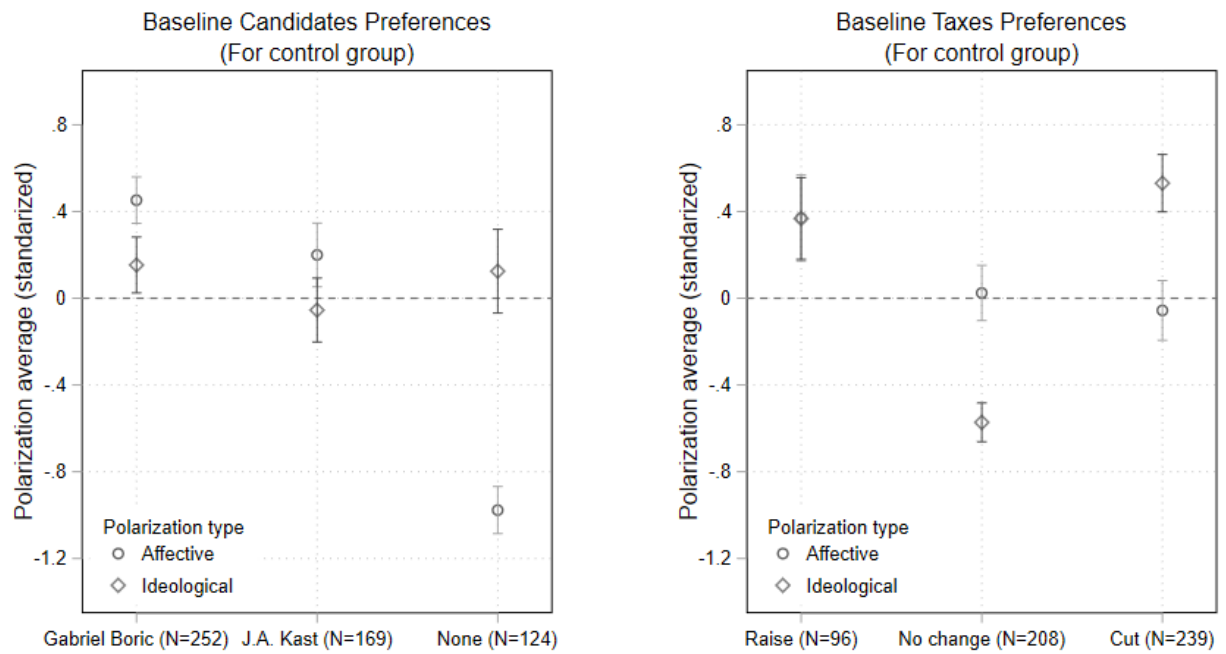
| <i>Panel A: Affective polarization outcome</i> | | | | | | |
|--|--------------------------|-------------------|--------------------|----------------------|-------------------|----------------------|
| | By candidate preferences | | | By taxes preferences | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Gabriel Boric | J.A. Kast | None | Raise | Cut | None |
| Aff. Treatment | -0.238 (0.272) | -0.294 (0.361) | -0.091 (0.261) | -0.415 (0.416) | -0.254 (0.282) | -0.033 (0.291) |
| Ideol. Treatment | -0.086 (0.278) | -0.097 (0.350) | 0.209 (0.299) | -0.621 (0.446) | -0.267 (0.285) | 0.373 (0.288) |
| Interaction | 0.103 (0.381) | -0.189 (0.504) | -0.474 (0.401) | 0.689 (0.596) | 0.097 (0.413) | -0.464 (0.396) |
| Constant | 1.743 (1.700) | -0.957 (2.156) | 2.735 (2.013) | 2.523 (3.676) | 2.486* (1.435) | 3.857*** (1.486) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 969 | 661 | 475 | 379 | 774 | 952 |
| R^2 | 0.131 | 0.159 | 0.105 | 0.448 | 0.402 | 0.375 |
| Adjusted R^2 | 0.098 | 0.111 | 0.032 | 0.390 | 0.373 | 0.350 |
| <i>Panel B: Ideological polarization outcome</i> | | | | | | |
| | By candidate preferences | | | By taxes preferences | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Gabriel Boric | J.A. Kast | None | Raise | Cut | None |
| Aff. Treatment | -0.314** (0.143) | 0.194 (0.168) | -0.035 (0.204) | -0.373 (0.240) | 0.006 (0.123) | -0.100 (0.162) |
| Ideol. Treatment | -0.490*** (0.149) | -0.162 (0.164) | -0.433* (0.224) | -0.260 (0.262) | 0.049 (0.122) | -0.783*** (0.166) |
| Interaction | 0.418** (0.205) | -0.290 (0.240) | 0.247 (0.313) | 0.345 (0.344) | -0.048 (0.178) | 0.308 (0.234) |
| Constant | 2.451** (1.094) | 1.316 (0.966) | 2.001 (1.759) | 2.530 (2.069) | 2.459* (1.340) | 1.196 (1.006) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 969 | 661 | 473 | 377 | 771 | 955 |
| R^2 | 0.204 | 0.295 | 0.264 | 0.136 | 0.075 | 0.110 |
| Adjusted R^2 | 0.174 | 0.255 | 0.203 | 0.044 | 0.030 | 0.075 |

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

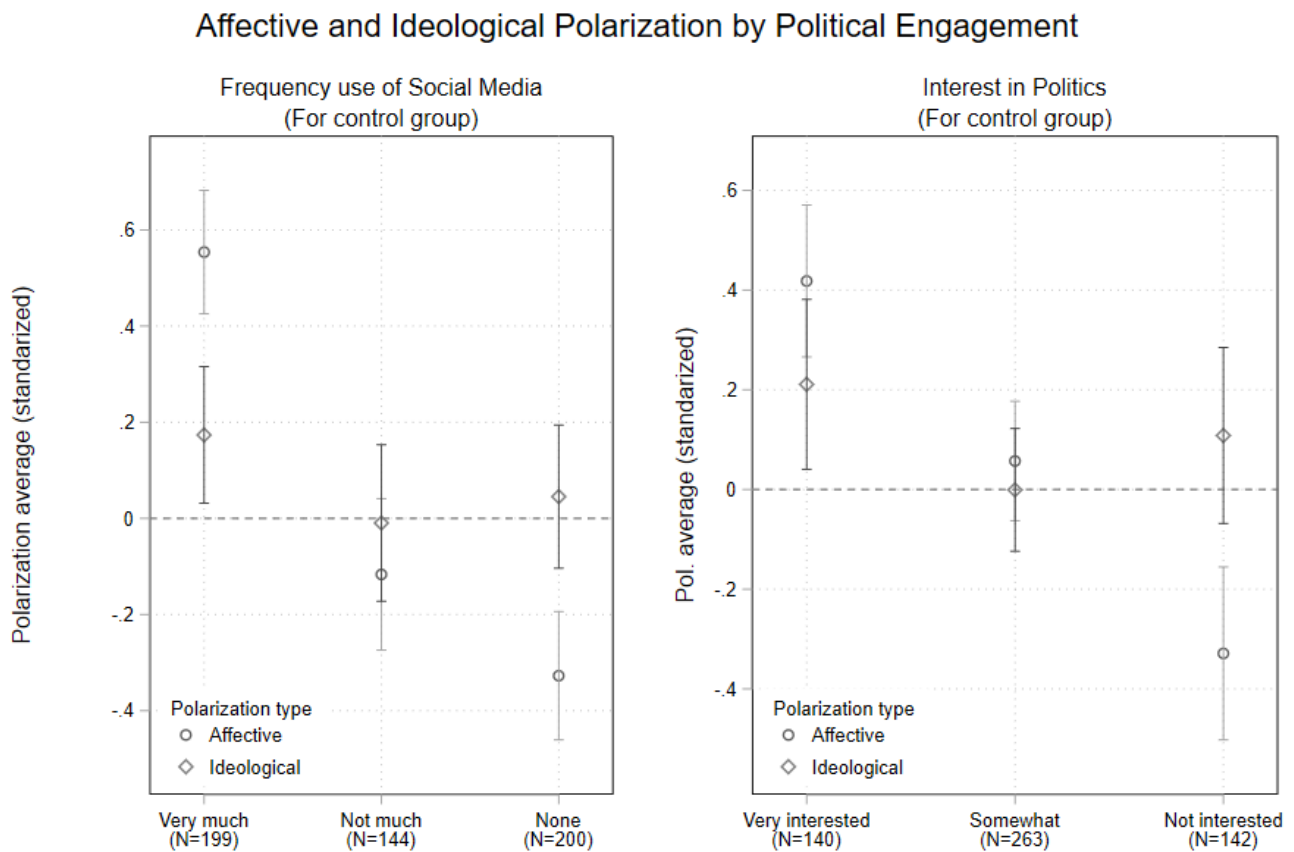
Figure B.1: Affective and ideological polarization among control group by baseline preferences

Affective and Ideological Polarization by Baseline Preferences



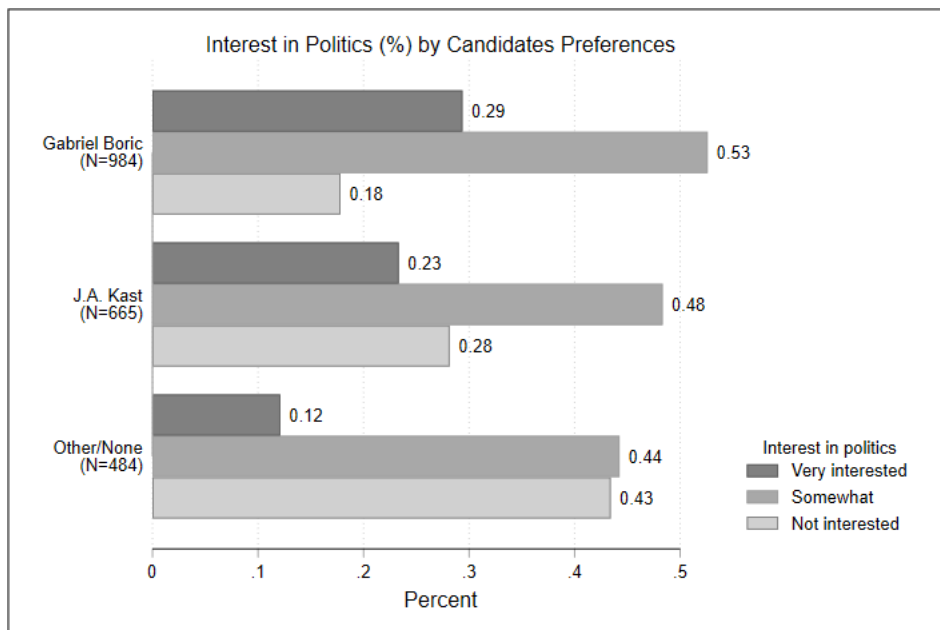
Note: The y-axis value 0 corresponds to standardized mean for each polarization level, so more negative values means less polarized

Figure B.2: Affective and ideological polarization among control group by interest in politics



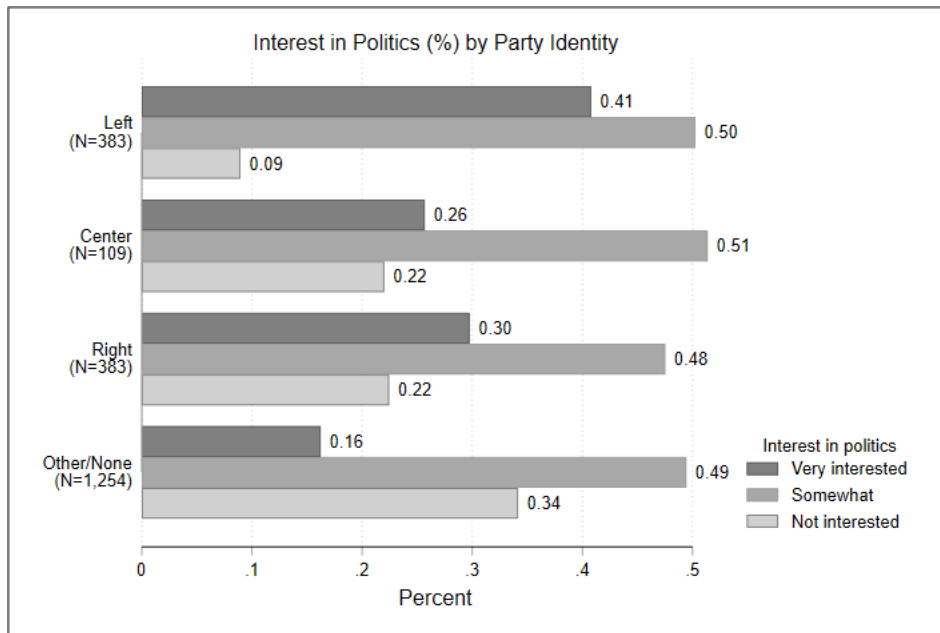
Note: The y-axis value 0 corresponds to standardized mean for each polarization level, so more negative values means less polarized

Figure B.3: Interest in politics by baseline candidate preferences



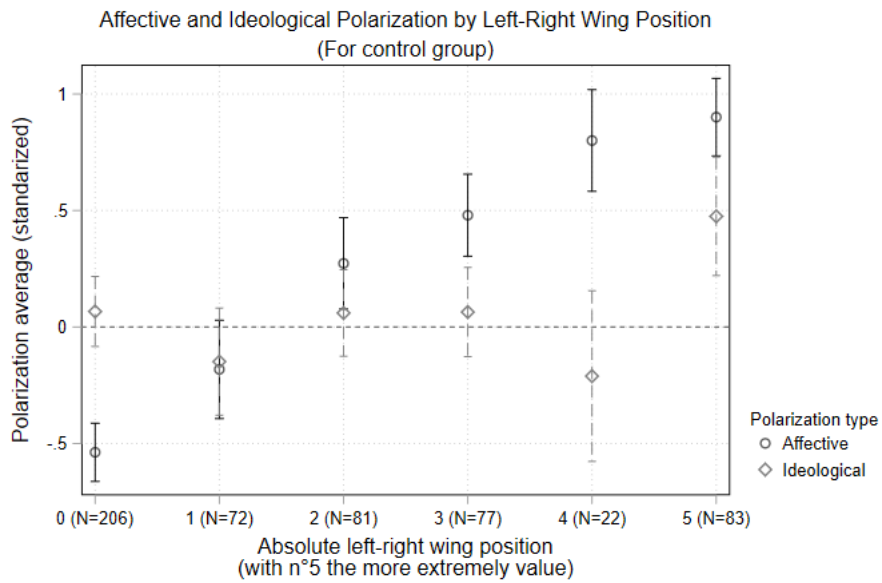
Note: Own elaboration using survey data

Figure B.4: Interest in politics by party identity



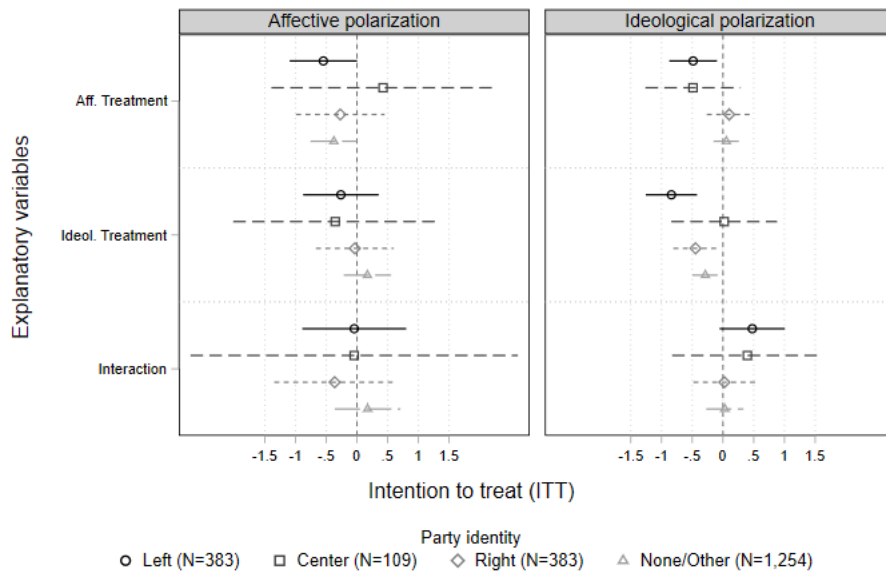
Note: Own elaboration using survey data

Figure B.5: Affective and ideological polarization by left-right wing preference, in control group



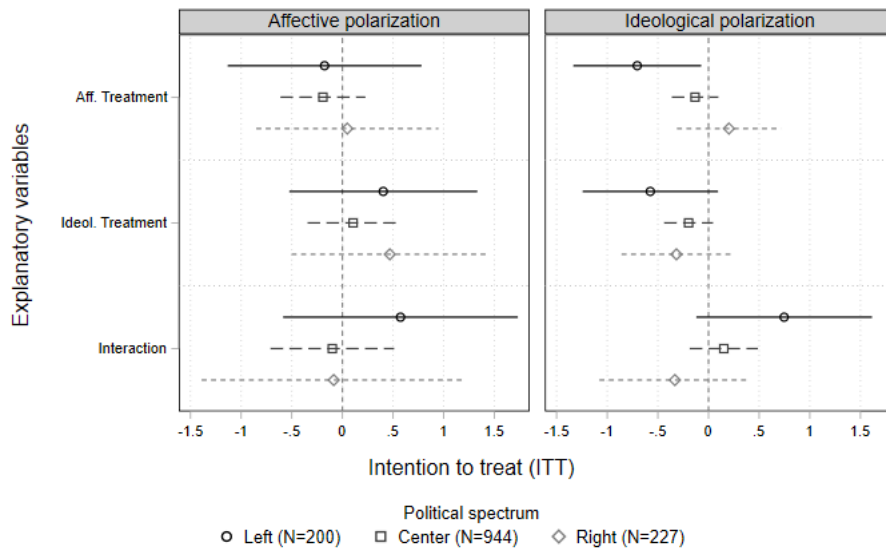
Note: X-axis is in absolute values, so 5 is the more extremely position.

Figure B.6: ITT for equations 1 and 2 by party identity, respectively



Note: Regressions are in line with Figure 10

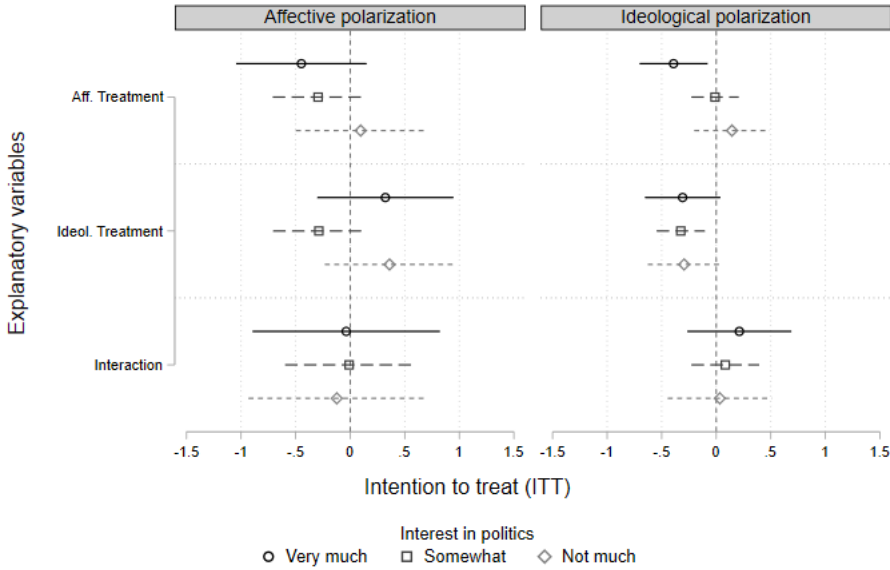
Figure B.7: ITT for equations 1 and 2 by left-right self identification, respectively



Note: Estimation based on recontacted subjects: N=1371

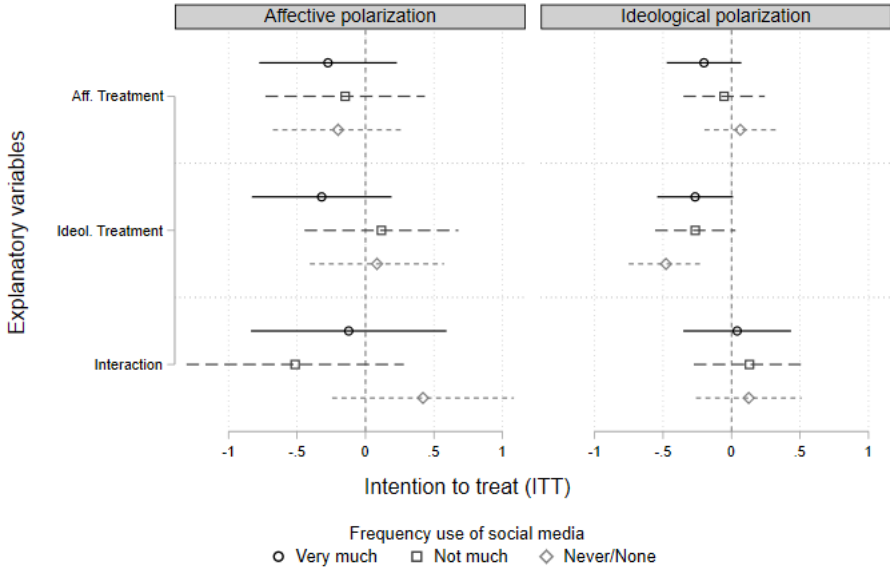
Note: Regressions are in line with Figure 10

Figure B.8: ITT for equations 1 and 2 by interest in politics, respectively



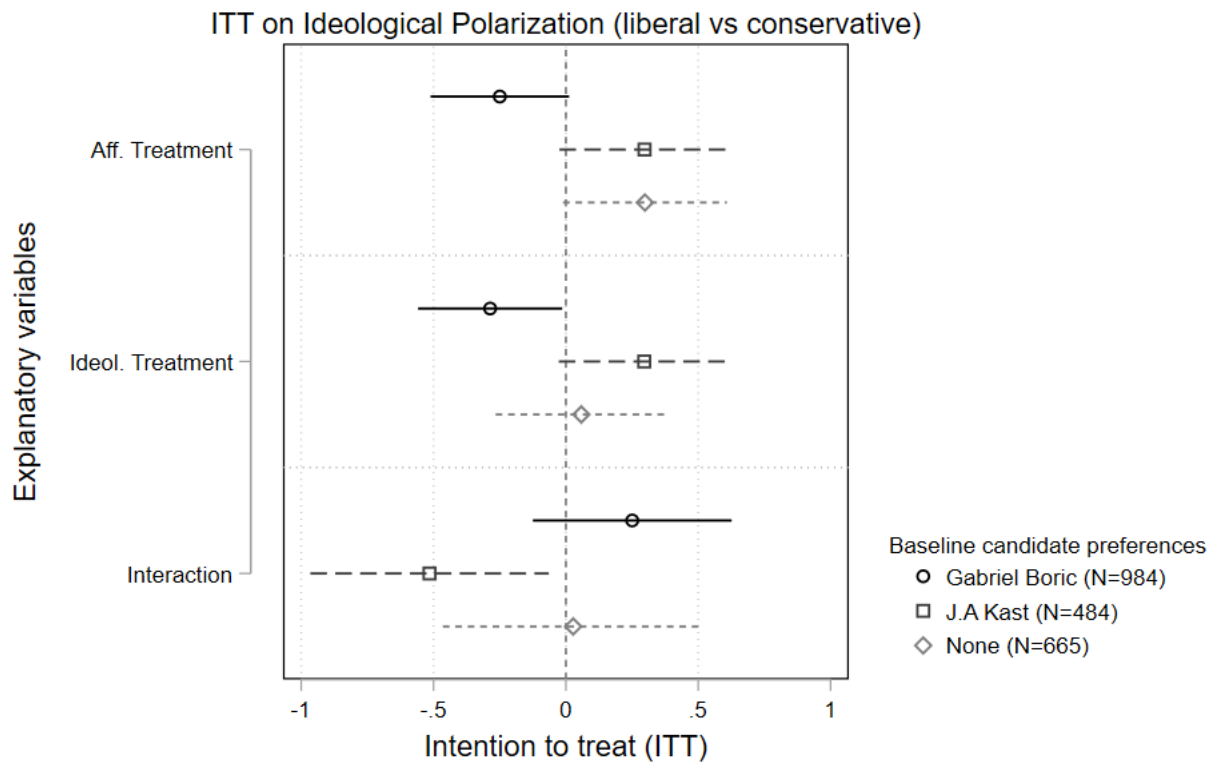
Note: Regressions are in line with Figure 10

Figure B.9: ITT for equations 1 and 2 by frequency use of social media, respectively



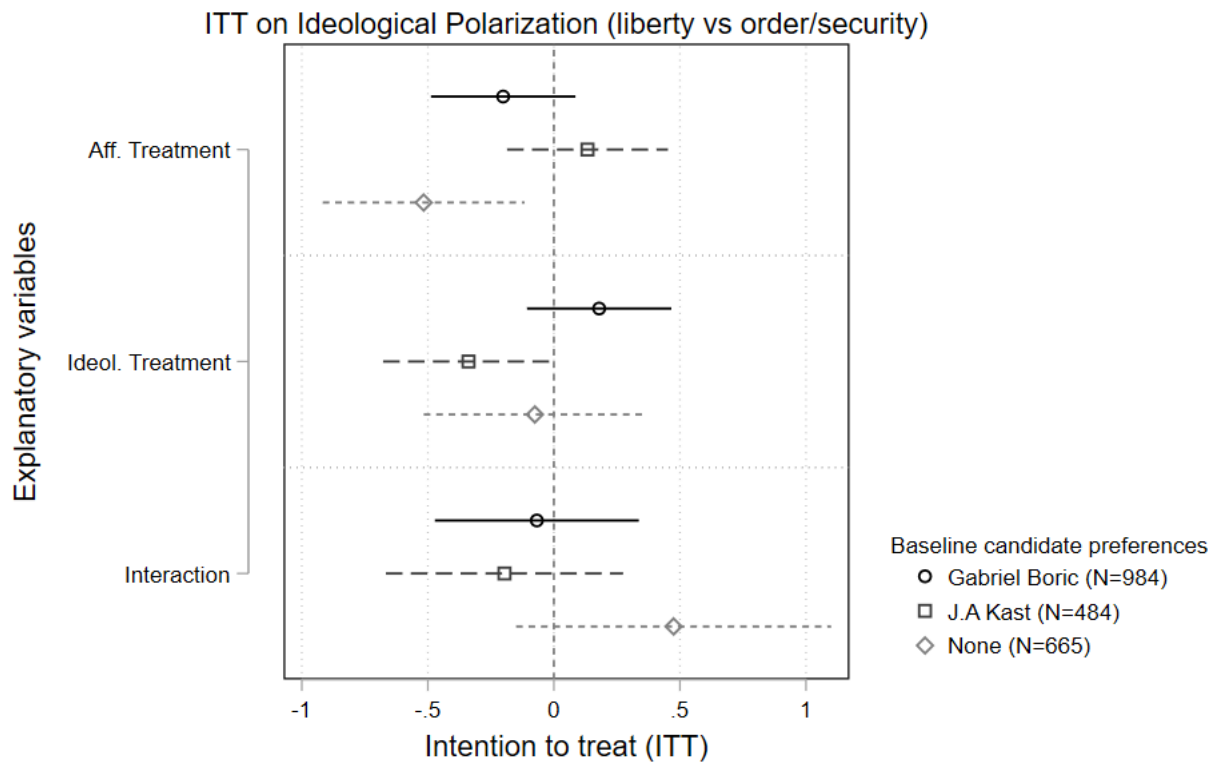
Note: Regressions are in line with Figure 10

Figure B.10: ITT for equation 2 by candidate preference



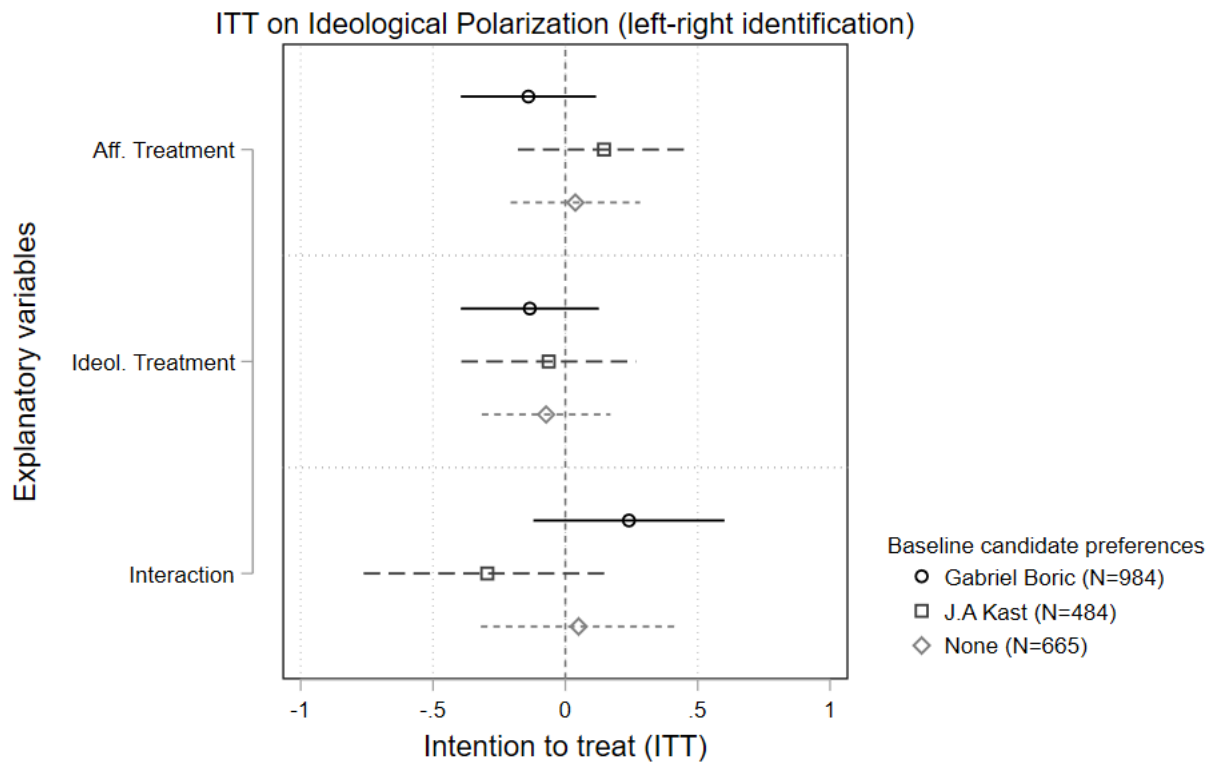
Note: This measurement of ideological polarization is using the absolute value of the distance from the center, for the question: Where would you place yourself on a scale from 0 to 10, where 0 is liberal and 10 conservative

Figure B.11: ITT for equation 2 by candidate preference



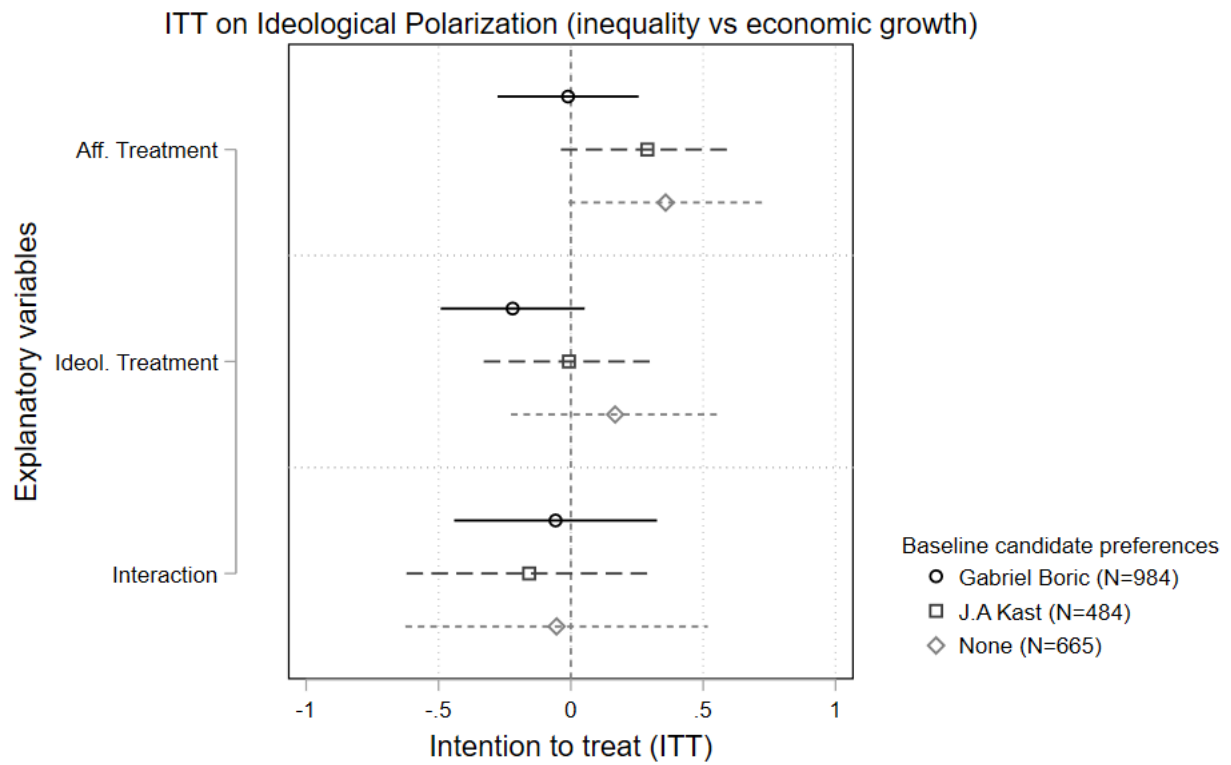
Note: This measurement of ideological polarization is using the absolute value of the distance from the center, for the question: Where would you place yourself on a scale from 0 to 10, where 0 means that priority is liberty and 10 means that priority is public security.

Figure B.12: ITT for equation 2 by candidate preference



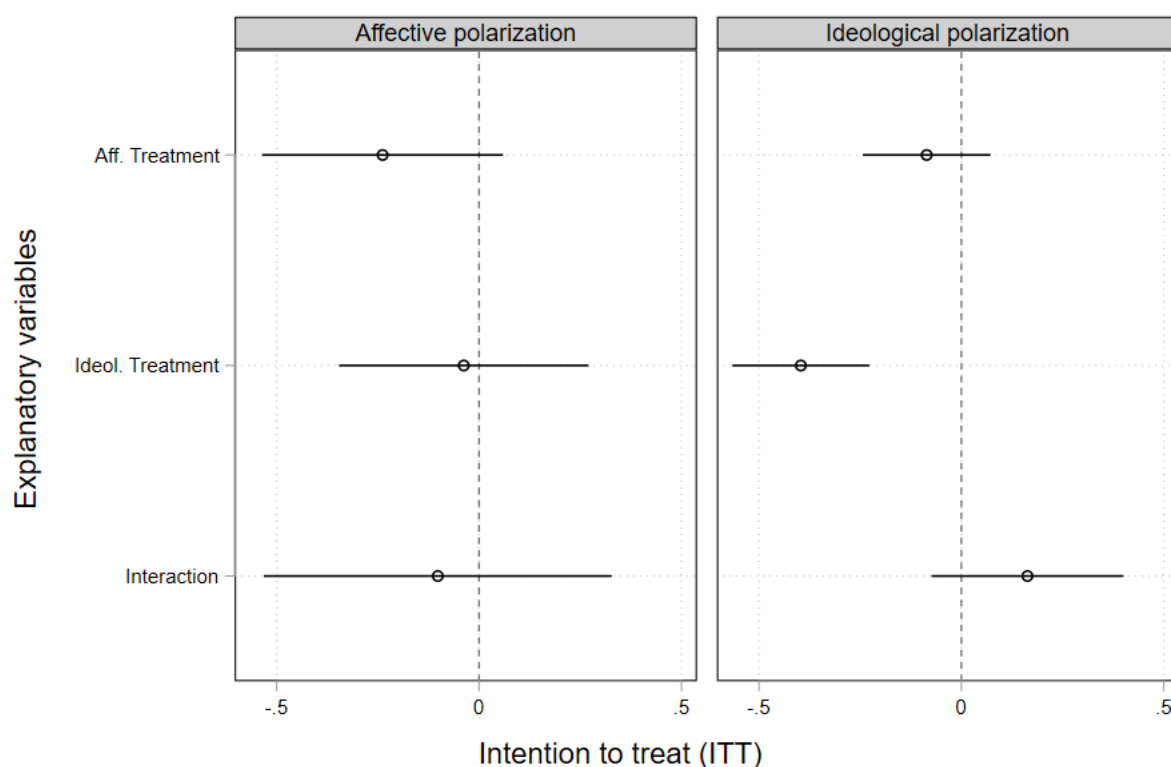
Note: This measurement of ideological polarization is using the absolute value of the distance from the center, for the question: Where would you place yourself on a scale from 0 to 10, where 0 is the left and 10 the right.

Figure B.13: ITT for equation 2 by candidate preference



Note: This measurement of ideological polarization is using the absolute value of the distance from the center, for the question: Where would you place yourself on a scale from 0 to 10, where 0 means that reducing inequalities should be a priority, even if this curbs economic growth, and 10 that economic growth should be a priority, even if this increases inequality?

Figure B.14: ITT for equation 2 only for those who comments videos and control group



Note: Own elaboration using survey data.

Table B.3: OLS regression for different propensities for turnout in runoff

| | (1) | (2) | (3) | (4) |
|--|---------------------|----------------------|----------------------|---------------------|
| <i>Propensity for turnout in runoff:</i> | Sure | Quite sure | Not so sure | Sure not |
| Affective Polarization | 0.019*** (0.003) | -0.010*** (0.002) | -0.005*** (0.002) | -0.003** (0.002) |
| Ideological Polarization | -0.007 (0.005) | 0.002 (0.004) | -0.002 (0.004) | 0.007** (0.003) |
| Constant | 0.537*** (0.186) | 0.351* (0.200) | 0.144 (0.134) | -0.031 (0.123) |
| Individuals controls | ✓ | ✓ | ✓ | ✓ |
| Observations | 2103 | 2103 | 2103 | 2103 |
| R^2 | 0.291 | 0.084 | 0.095 | 0.130 |
| Adjusted R^2 | 0.278 | 0.067 | 0.079 | 0.114 |

Note: All dependent variables are dichotomous [0,1]. Robust standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.4: Marginal effects in ordered probit regression for different propensities for turnout in runoff

| | Turnout | |
|---------------------------------|----------------------|----------------------|
| | (1) | (2) |
| Affective Polarization | | |
| Sure | 0.048*** (0.003) | 0.021*** (0.003) |
| Quite sure | -0.020*** (0.002) | -0.010*** (0.002) |
| Not so sure | -0.016*** (0.001) | -0.007*** (0.001) |
| Sure not | -0.013*** (0.001) | -0.004*** (0.001) |
| Ideological Polarization | | |
| Sure | -0.019*** (0.005) | -0.009 (0.006) |
| Quite sure | 0.008*** (0.002) | 0.004 (0.003) |
| Not so sure | 0.006*** (0.002) | 0.003 (0.002) |
| Sure not | 0.005*** (0.001) | 0.002 (0.001) |
| Individuals controls | ✓ | ✓ |
| Observations | 2111 | 2103 |

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

Table B.5: OLS heterogeneous effects on turnout by baseline preferences

| | Turnout | | | | | |
|--------------------------|--------------------------|---------------------|--------------------|----------------------|---------------------|---------------------|
| | By candidate preferences | | | By taxes preferences | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Gabriel Boric | J.A. Kast | None | Raise | Cut | None |
| Affective Polarization | 0.007*** (0.003) | 0.005 (0.004) | 0.024** (0.010) | 0.009* (0.005) | 0.004 (0.004) | 0.011*** (0.004) |
| Ideological Polarization | -0.008* (0.004) | 0.001 (0.007) | 0.005 (0.015) | 0.003 (0.008) | 0.018* (0.010) | -0.012* (0.006) |
| Constant | 0.930*** (0.111) | 0.594*** (0.212) | 0.558 (0.440) | 1.113*** (0.246) | 0.871*** (0.220) | 0.707*** (0.204) |
| Individuals controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 965 | 659 | 471 | 376 | 769 | 950 |
| R^2 | 0.086 | 0.099 | 0.096 | 0.244 | 0.235 | 0.242 |
| Adjusted R^2 | 0.052 | 0.048 | 0.023 | 0.166 | 0.199 | 0.213 |

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.6: OLS heterogeneous effects on turnout by interest in politics

| | Turnout by interest in politics | | |
|--------------------------|---------------------------------|---------------------|--------------------|
| | (1) | (2) | (3) |
| | Very interested | Somewhat | Not interested |
| Affective Polarization | 0.005 (0.003) | 0.009*** (0.003) | 0.011* (0.006) |
| Ideological Polarization | -0.009 (0.007) | -0.000 (0.006) | -0.006 (0.011) |
| Constant | 0.932*** (0.225) | 1.073*** (0.203) | 0.764** (0.297) |
| Individuals controls | ✓ | ✓ | ✓ |
| Observations | 500 | 1036 | 567 |
| R^2 | 0.251 | 0.171 | 0.227 |
| Adjusted R^2 | 0.193 | 0.141 | 0.174 |

Note: Each column represent a different sample group depending subjects interest in politics. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.7: Treatment effects on turnout (reduced form)

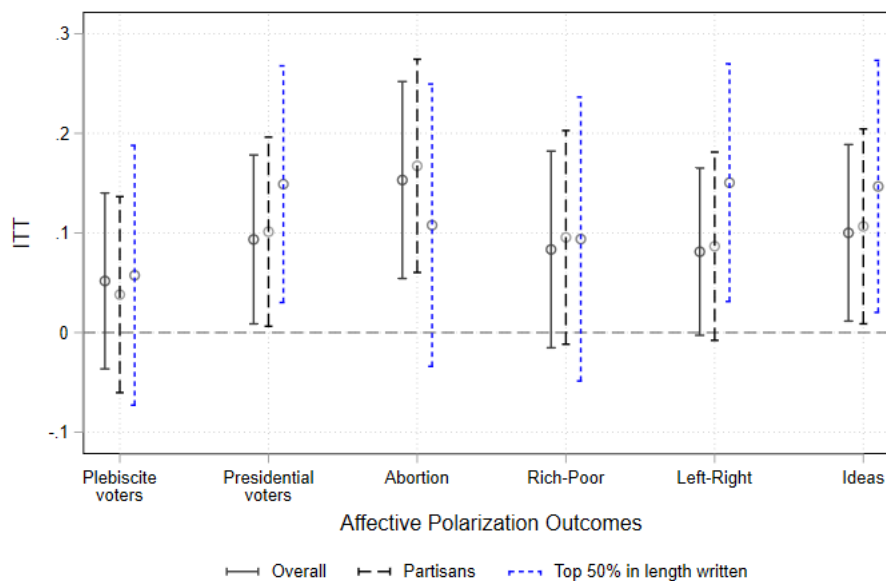
| | (1) | (2) |
|----------------------|-------------------|-------------------|
| | Turnout | Turnout |
| Aff. Treatment | -0.028 (0.022) | -0.011 (0.020) |
| Ideol. Treatment | -0.003 (0.021) | 0.002 (0.019) |
| Interaction | 0.057* (0.030) | 0.029 (0.027) |
| Individuals controls | | ✓ |
| Observations | 2130 | 2121 |
| R^2 | 0.003 | 0.215 |

Standard errors in parentheses

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

C Plebiscite study

Figure C.1: Effect of treatment on affective polarization by groups



Note: Own elaboration using survey data. Each point correspond to the coefficient of six OLS regressions, using different measures of affective polarization (outcome), by groups.

Table C.1: Effect of treatment on affective polarization (manipulation checks)

| <i>Panel A: Manipulation checks I</i> | | | | | | |
|--|---------------------|---------------------|------------------------|--------------------|--------------------|--------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Plebiscite voters | Presidential voters | Pro-choice vs Pro-life | Rich vs Poor | Left vs Right | Apruebo vs Rechazo ideas |
| Treatment | 0.052 (0.045) | 0.093** (0.043) | 0.153*** (0.050) | 0.083* (0.050) | 0.081* (0.043) | 0.100** (0.045) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1481 | 1485 | 1484 | 1481 | 1482 | 1482 |
| R^2 | 0.284 | 0.336 | 0.106 | 0.114 | 0.364 | 0.268 |
| <i>Panel B: Manipulation checks II</i> | | | | | | |
| | As threat: | | | As evil: | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Any | Rechazo voters | Apruebo voters | Any | Rechazo voters | Apruebo voters |
| Treatment | 0.189*** (0.049) | 0.222*** (0.067) | 0.118* (0.068) | 0.098** (0.050) | 0.177** (0.070) | -0.008 (0.069) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1483 | 711 | 771 | 1478 | 709 | 768 |
| R^2 | 0.179 | 0.235 | 0.240 | 0.145 | 0.177 | 0.211 |

Standard errors in parentheses

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

Table C.2: Effect of treatment on ideological polarization (reduced form and IV)

| Ideological polarization measures | | | | | | |
|---------------------------------------|-------------------|----------------------|------------------|---------------------|-------------------------|--------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Taxes | Inequality vs Growth | Abortion | Liberty vs Security | Liberal vs Conservative | Government vs Individual |
| <i>Panel A: Reduced form</i> | | | | | | |
| Treatment | -0.029 (0.052) | 0.070 (0.051) | 0.050 (0.050) | -0.028 (0.050) | -0.001 (0.049) | 0.006 (0.051) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1484 | 1484 | 1482 | 1483 | 1484 | 1484 |
| R^2 | 0.064 | 0.113 | 0.100 | 0.112 | 0.133 | 0.093 |
| <i>Panel B: Instrumental variable</i> | | | | | | |
| Affective polarization index | -0.211 (0.475) | 0.575 (0.458) | 0.550 (0.412) | -0.277 (0.471) | -0.023 (0.438) | 0.109 (0.451) |
| First stage test F | 13.80 | 13.90 | 13.92 | 13.58 | 13.98 | 13.93 |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1462 | 1463 | 1460 | 1461 | 1462 | 1462 |
| R^2 | -0.055 | -0.011 | 0.145 | -0.101 | -0.007 | 0.024 |

Standard errors in parentheses

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

Table C.3: Heterogeneous treatment effect on ideological polarization by plebiscite choice

| | Ideological polarization measures | | | | | |
|-------------------------|-----------------------------------|-------------------------|-------------------|------------------------|----------------------------|-----------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Taxes | Inequality vs Growth | Abortion | Liberty vs Security | Liberal vs Conservative | Government vs Individual |
| <i>Panel A: Apruebo</i> | | | | | | |
| Treatment | 0.087 (0.082) | 0.014 (0.078) | 0.113 (0.073) | -0.073 (0.091) | -0.033 (0.074) | -0.071 (0.072) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 611 | 611 | 610 | 611 | 611 | 611 |
| R^2 | 0.088 | 0.141 | 0.132 | 0.140 | 0.189 | 0.117 |
| <i>Panel B: Rechazo</i> | | | | | | |
| Treatment | -0.086 (0.077) | 0.153** (0.078) | 0.029 (0.079) | 0.032 (0.064) | 0.063 (0.074) | 0.133 (0.085) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 653 | 653 | 652 | 652 | 653 | 653 |
| R^2 | 0.123 | 0.128 | 0.070 | 0.128 | 0.190 | 0.144 |
| <i>Panel C: Neither</i> | | | | | | |
| Treatment | -0.005 (0.156) | 0.011 (0.157) | -0.104 (0.163) | -0.057 (0.130) | -0.005 (0.152) | -0.141 (0.150) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 216 | 216 | 216 | 216 | 216 | 216 |
| R^2 | 0.205 | 0.195 | 0.145 | 0.296 | 0.212 | 0.189 |

Standard errors in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table C.4: Effect of treatment on support for democracy, by groups (reduced form and IV)

| | Support for democracy by: | | | | |
|---------------------------------------|---------------------------|---------------------|---------------------------|---------------------|-------------------|
| | (1) | (2) | (3) | (4) | (5) |
| | All | Partisans | Top 50% length written | Apruebo voters | Rechazo voters |
| <i>Panel A: Reduced form</i> | | | | | |
| Treatment | -0.065 (0.050) | -0.134** (0.052) | -0.117* (0.068) | -0.140** (0.064) | -0.123 (0.084) |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1483 | 1264 | 736 | 610 | 653 |
| R^2 | 0.153 | 0.132 | 0.161 | 0.210 | 0.092 |
| <i>Panel B: Instrumental variable</i> | | | | | |
| Affective polarization index | -0.616 (0.479) | -1.192** (0.571) | -0.860 (0.656) | -1.269 (0.789) | -1.100 (0.880) |
| First stage test F | 14.52 | 13.34 | 7.46 | 5.66 | 7.32 |
| Individual controls | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 1462 | 1247 | 726 | 601 | 645 |
| R^2 | -0.205 | -0.718 | -0.362 | -1.477 | -0.365 |

Standard errors in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figures and Tables – Not for Print
Affective vs. Ideological Polarization in a Latin American Country
 Pedro Cubillos R.

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