

**Mobilizing Mini-Publics:
The Causal Impact of Deliberation on Civic Participation Using Panel Data**

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Abstract

Deliberative exercises are designed to provide input into the policy areas under discussion, but these exercises may also help re-invigorate civic life by building citizens' capacity to engage in other types of civic activities. The extent to which this capacity-building takes place depends on the nature of the deliberative event and the procedures used in the deliberative process. This study examines members of a citizens' panel (n=56) who participated in a six-day deliberative event on climate change and energy transition in Edmonton, Alberta (Canada) in 2012. We compared panelists' civic engagement, political interest, and political knowledge with those of the general population using a concurrent random digit dialing survey (n=405). Panelists are more likely to talk about politics, boycott, and volunteer in the community compared to their counterparts in the larger population. Examining three points in time, we reveal a trajectory of increasing political interest, political knowledge and civic engagement. Finally, we examine the mechanisms that mobilize panelists into greater civic engagement. The development of evidence-based opinions correlates strongly with increased political interest, political knowledge and civic engagement. We also find that panelists who developed civic skills such as comfort speaking in public meetings also reported higher levels of civic engagement two-and-a-half years after the end of the deliberative event. This study illustrates how deliberative events could strengthen engagement in civic and political life, depending on the procedural features of the deliberative event and their impact on civic capacity.

Keywords: deliberative democracy; civic engagement; political interest; political knowledge; longitudinal

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Deliberative exercises are designed to provide public input into policy areas based on reasoned discussion (Bohman, 1996). These deliberative exercises may also help reinvigorate civic life. Some of this impact relates to norms and requirements of “thin democracy,” which foregrounds representation, individualism, and the expression and brokering of interests (Barber, 1984; Habermas, 1994). For example, participation in deliberative processes may affect the propensity to vote in elections. Deliberative participation can also build capacity to engage in ‘thicker’ types of civic activity (Barber, 1984), thus serving as a school of democratic participation and agency. The extent to which this capacity-building takes place depends on the nature of the deliberative event and the procedures used in the deliberative process.

This study examines members of a citizens’ panel (n=56) who participated in a six-day deliberative event in Edmonton, Alberta (Canada) in 2012. We compared panelists’ civic engagement, political interest, and political knowledge with those of the general population using a concurrent random digit dialing survey (n=405) collected in June 2015—two-and-a-half years after the deliberative event. Our paper shows that panelists are more likely to talk about politics, boycott, and volunteer in the community compared to their counterparts in the larger population; they also are more interested in local politics. We attribute these differences to participation in the citizens’ panel. In addition, we examine the trajectory of changes in panelists’ political interest, knowledge, and civic engagement, which reveals patterns of increasing interest, knowledge and engagement across multiple data points, from the pretest survey to the survey conducted two-and-a-half years after the event. The deliberative event and the period afterwards built citizens’ capacity to engage in additional civic and political activities. Finally, we examine the mechanisms that mobilize panelists into greater engagement in civic life. Using our panel

design, we explore how perceived fairness, exposure to diverse viewpoints, provision of evidence-based opinions, and perceived government responsiveness impact political interest, political knowledge and civic engagement. This study illustrates how procedurally sound deliberative events can strengthen engagement in civic and political life. Our study is distinctive in employing seven-wave panel data as well as a control group to assess the process through which deliberative events can transform civic capacity and engagement in civic and political life. The data sources and modeling approach advance scholarship on deliberative democracy and on processes through which citizens are mobilized into civic action.

Deliberation and Civic Participation: The Relationship

Over a century ago, de Tocqueville first hypothesized a relationship between jury service and civic engagement (Gastil et al., 2010, p. 26) and pointed out various participatory and deliberative practices as schools of citizenship (de Tocqueville, 1835). Since then, many scholars have provided empirical evidence to demonstrate the positive relationship between deliberation and civic life, defined as volunteering, donating and other forms of participation in or connected to community groups and organizations that exist outside the formal mechanisms of the state (Zukin et al., 2006). They have shown a correlation between deliberation on the one hand, and attention to public affairs, talking with others about political issues, and working or volunteering in local communities and affairs on the other (Wuthnow, 1994; Delli Carpini, 1997; Delli Carpini, Cook, & Jacobs, 2004). In a national US survey on a random sample of approximately 1,500 people, Jacobs, Cook, and Delli Carpini (2009) found that the more people participated in

various online or offline deliberative forums, the more they volunteered in community, worked on community organizing and problem solving (p. 87-117).

Moving beyond correlation analysis and self-reported data on deliberation and civic participation, Gastil and his colleagues used a national study of court and voting records to compare the voting behavior of people who served on a jury and those who did not (Gastil et al., 2008). They found that jury deliberation can significantly increase turnout rates among those who were previously infrequent voters. Therefore, “there is strong evidence that deliberative participation in one form of public life can increase the likelihood of civic or political participating in other settings” (Gastil et al., 2008, p. 363). People do not just feel more engaged; there is evidence that after deliberation, they are more likely to participate in non-voting political activities such as following politics through media, contacting public officials, and volunteering (Gastil et al., 2010).

Building on these findings, we propose that participation in a deliberative event has long-term impacts on participants’ levels of civic and political engagement. We test this relationship using multi-wave panel data. This analysis will help us understand whether the effect of deliberation on civic life is short-term or enduring. Jacobs et al. have pointed to the difficulty of establishing causal links: “public talk and public action may be correlated, but does engaging in the former lead to more of the latter?” (2009, p. 84-85). Our data are unique in addressing this “complicated issue of causality” (p. 84-85). To further isolate the distinct effects of the deliberation on civic engagement and address issues of causality, we use data from a simultaneous public opinion poll to serve as a control group. We expect the following:

H1: Compared to non-participants, participants in a deliberative event will report higher levels of engagement in a variety of civic and political activities.

H2: Compared to pre-test levels, participants will report higher levels of engagement after the deliberative event.

Deliberation and Civic Participation: The Mechanisms

Not all scholars have found a relationship between participation in a deliberative event and civic participation. After studying a series of both online and offline citizen deliberation experiments in Finland from 2006 to 2008, Grönlund and associates found minor effects of deliberation on participants' readiness for political action (Grönlund, Setälä, & Herne, 2010; Strandberg & Grönlund, 2012). The minimal effect was very likely due to the short amount of time (2 hours) given to deliberation during the experiment. Moreover, as Grönlund et al. (2010) note, participants' unfamiliarity with the online technology might impact the observed results of deliberation. The findings stress the importance of procedural features in understanding the impact of deliberative events. As Jacobs et al. (2009) note,

“if we do not specify the paths by which deliberation can affect politics, we cannot investigate them. Researchers may thus fail to examine critical connections and falsely conclude that discursive participation has no tangible effect...if public talk and deliberation do exert direct or indirect influences on civic and political life, we need to explain the mechanisms by which this occurs” (p. 84).

We explore two aspects of the mechanism linking deliberation to civic engagement. We first focus on procedural elements and features of the deliberation exercise, such as perceived fairness, exposure to diverse viewpoints, developing evidence-based opinions, and perceived government responsiveness. Secondly, we focus on civic capacity-building, drawing on the civic volunteerism model, which highlights the importance of motivation and resources to engage in civic life (Verba et al., 1995). We explore the role of political attention, political interest,

political knowledge, and public-speaking skills as outcomes of the deliberative process as well as predictors in subsequent civic engagement.

[insert Figure 1]

Aspect 1: Procedural Elements of the Deliberation Process

As noted above, we attribute the mixed findings in this field to different deliberative features and elements. For instance, many deliberative events are of short duration, which could limit the outcomes for civic engagement, particularly in the long term. In contrast, more sustained forms of deliberation might lead to stronger and longer-term outcomes. The Deliberative Polls (DP), which was developed by James Fishkin, provide a useful reference point in unpacking how a well-organized setting of deliberation can affect civic engagement. DP offer a variety of conditions and procedures to ensure a quality deliberation: they provide participants with balanced briefing materials, use a moderator to coordinate small group discussion thus supporting equality of participation during deliberation, and organize plenary sessions in which experts with diverse views answer questions from the small group discussions (Fishkin & Luskin, 2005; for details of Deliberative Poll, see: <http://cdd.stanford.edu>). DP have been conducted in over twenty-four countries and over seventy times since 1988.

Eggin et al. (2007) used the data from an Australian Deliberative Poll on a bill of rights. The event was conducted in 2002. In their examination, the authors studied several main elements including exposure to diverse viewpoints and fair treatment during deliberation. These two elements were tested through a post-poll survey. Participants were asked their perceived exposure to all sides of the issue and to what extent they were treated with respect and felt free to express their views during deliberation. The authors found that exposure to multiple viewpoints

and perceptions of fair treatment did increase people's levels of engagement, as measured by *intent* to talk to others. Their explanation is that exposure to all sides of the issue increases participants' sense of representing the whole community. During deliberation, if one perceives one's views being treated as important and with respect, one's group-community identity is stimulated and this sense of representativeness is likely to play out in future civic participation (Simon & Stürmer, 2003).

On the other hand, the literature also suggests that exposure to multiple viewpoints could have a dampening effect on civic engagement. Mutz (2006) noted that when deliberation occurs in non-organized settings such as informal, everyday political talk, it can negatively affect people's level of political participation. People encounter conflicting views or disagreements during informal deliberation and these can increase uncertainty about one's views on an issue; as a result, one is less likely to take action (Mutz, 2006). We propose that in a properly moderated deliberative event, exposure to multiple viewpoints will increase civic capacity (political interest, knowledge, etc.) and ultimately lead to increased civic engagement. Using multiple waves of data, we expect that:

H3: Exposure to diverse viewpoints during the deliberative process will increase civic capacity (in the short-term) and civic engagement (in the long-term).

H4: Perceptions about fair treatment during the deliberative process will increase civic capacity (in the short-term) and civic engagement (in the long-term).

Another important mechanism relates to changes in political views as a result of deliberation. As Ryan (2002) and Fishkin (2009) pointed out, deliberation gives people the information they need to develop more evidence-based opinions and educates people to weigh the pros and cons of an argument. Indeed, evidence from multiple deliberative polls (Fishkin,

2009; Fishkin, 2018) demonstrated that participants show substantial information gains after deliberation. Fishkin (2009, p. 35) and Fishkin (2018, p.123-125) also stressed the educative function of deliberation, which helps build capacity to reason about public affairs. As explained by Fearon (1998), participants in deliberation offer analyses that do not occur to others, and thus enhances judgment and supports knowledge of better solutions. Similarly, Esterling, Neblo, and Lazer (2011) used a field experiment in 2006 whereby U.S. Congress members discussed immigration policy with a randomly recruited group of citizens in their constituencies. They found that “constituents who participate in a deliberative session demonstrate both an evident *willingness* and a strong *capacity* to become informed in response to the opportunity to discuss an issue with their representative” (p. 485, emphasis added). When people are provided opportunities to deliberate about political issues they are more likely to build understanding of these issues and to participate politically around these issues in future, for example, contacting a public official. Through our long-term research design, we expect to find that:

H5: Providing evidence-based opinions during the deliberative event will increase civic capacity (in the short-term) and civic engagement (in the long-term).

A final characteristic relates to government responsiveness. If the government responds to citizens’ deliberative recommendations, by either making policy changes or giving feedback, citizens are more likely to feel that their voices matter and are thus more likely to participate in politics in the future. Conducting a series of experiments to vary whether the decision maker responds to subject’s arguments, Hibbing and Theiss-Morse (2002) found that when participants saw evidence that a decision maker took action in response to their arguments, their perception of the fairness of the decision-making process increased and this increased perception of fairness or satisfaction could also lead to behavioral changes such as complying with policies in the

future. As Trucco (2017) pointed out, “when the government is not responsive to citizens’ demands, citizens may feel discouraged from participating.... [W]hen the government is responsive, citizens may feel engaged and thus become more active, which would reinforce the government’s strong performance” (p. 2). Trucco (2017) conducted a field experiment in a local government in the city of Buenos Aires and showed that when government responded to citizen suggestions or complaints concerning public goods, such as taking action to repair broken roads, more citizens participated in offering suggestions. Thus, if participants can see evidence that the government is responsive, this increases the likelihood of their future civic participation.

Following this line of evidence, we propose that:

H6: Believing the deliberation will impact government decision-making will increase civic capacity (in the short-term) and civic engagement (in the long-term).

Aspect 2: Civic Capacity-Building

Besides the elements of deliberative design that can affect civic participation, scholars also suggest that deliberation influences key mediators in the mobilization process for civic engagement. These mediating factors include political attention, interest, knowledge, and civic skills such as public speaking (e.g. Boulianne, 2011). As mentioned, research demonstrates a correlation between self-reported participation in a deliberative exercise and attention to public affairs, talking with others about political issues, and working in local communities (Wuthnow, 1994; Delli Carpini, 1997; Delli Carpini, Cook, & Jacobs, 2004; Jacobs, Cook, & Delli Carpini, 2009). Knobloch and Gastil (2015) investigated two deliberative events in Australia and Oregon and asked people whether they thought there was a change in their political interest, attention, and participation since the conclusion of the deliberative process. Participants self-reported

changes in how frequently they talked to others about politics, paid attention to politics in the news, worked in the community, and went to political meetings. Knobloch and Gastil did not measure behavior before and after the deliberative events, but rather relied on self-reports of perceived changes.

Fournier et al. (2011) examined deliberative events and find that comparing pretest and post-test values, “participants report paying more attention to the news, becoming more interested in, and feeling more informed about politics at the end of the process than they did at the beginning” (p.115). They also compared panelists to a group that expressed interest in the event but were not chosen to participate. They documented participants’ higher levels of attention, interest, and feelings of being informed, compared to non-participants. Given this pre-existing evidence, we expect that participation in deliberative events, provided these events are procedurally sound (see previous section), could stimulate interest in the political process, particularly attention to political issues, interest in politics, and subsequent participation. We expect that:

H7: Increased political attention leads to increased civic engagement in the long-term.

H8: Increased political interest (attributed to the deliberative process) leads to increased civic engagement in the long-term.

As part of the deliberative process, participants may learn about how citizens’ input feeds into the government decision-making process, which contributes to political knowledge. A knowledgeable citizenry is not only a democratic ideal, but political knowledge is a key predictor of participation in election campaigns, including voting and donating money (Delli Carpini & Keeter, 1996). Further, a meta-analysis of research on voting demonstrates that political

knowledge, as well as political interest, is a consistent predictor of voting (Smets & van Ham, 2013). We expect to see similar results for civic engagement:

H9: Increased political knowledge (attributed to the deliberative process) leads to increased civic engagement in the long-term.

Verba et al. (1995) outline a civic volunteerism model that explains why some people do and do not participate in civic and political activities. They look at motivation, resources and whether people were asked to participate (a factor that is addressed with recruitment to a deliberative event). For *motivation* they explore the role of political interest, efficacy, and knowledge. They characterize resources in terms of time, money, and skills. They find that civic skills, such as experience in public speaking, writing letters, as well as planning, participating, and chairing meetings, are crucial factors promoting political engagement (also see Brady, Verba, & Schlozman, 1995). If participation in a deliberative exercise enhances these civic skills, we expect to see an increase in overall civic and political participation.

Fournier et al. (2011) tested this idea by studying participants in a deliberative process in the Netherlands. They asked participants before and after the event whether they feel nervous speaking in front of a group and did not find any change in comfort with public speaking. They emphasized the importance of deliberative procedures, but did not find evidence to suggest that feeling like one's views were respected explained the lack of improved public speaking skills. Nonetheless, we propose re-visiting this question, looking at this civic skill and its long-term impact on civic engagement. We expect:

H10: Increased civic skills (public speaking) leads to increased civic engagement in the long-term.

In sum, this study is distinctive in offering strong data to attribute changes in civic capacity and civic engagement to participation in a deliberative event. The multi-wave data combined with a control group help trace the evolution of deliberative outcomes on civic capacity and civic engagement. This study is also unique in testing key procedural elements of the deliberation process, such as fairness, diverse viewpoints, evidence-based opinions, and government responsiveness that may impact civic capacity in short term and civic engagement in the long-term. Understanding these mechanisms will help us reflect upon the contested evidence on the relationship between deliberation and civic engagement.

Data and Method

Case Study

The Citizens' Panel on Energy and Climate Challenges was designed and executed as a collaboration between the City of Edmonton, the Centre for Public Involvement, and Alberta Climate Dialogue, a network of scholars and practitioners.¹ Panelists spent six Saturdays from October 13-December 1, 2012, discussing their values, hearing different perspectives about Edmonton's climate and energy challenges, evaluating different policy options for addressing these challenges, and deciding on policy recommendations (Centre for Public Involvement et al., 2012). For an outline of the six Saturday meetings and description of the process, see Hanson (2018, p. 44-45).

Sample

¹ For extensive information and analysis around this Citizens' Panel, see www.albertaclimatedialogue.ca

Panelists were recruited through interactive voice response survey (for more details, see Author, 2018a). Quotas were used to ensure representation based on age, education, gender, and other variables (see Appendix 1). Those who expressed interest and met quotas were invited to join the Citizens' Panel on Edmonton's Energy and Climate Challenges. This approach to invitations is rare in this field of research, where the norm is to rely on more passive forms of recruitment, such as posters and newspaper ads (see Author, 2018a). Sixty-six citizens were recruited to participate and fifty-six continued to participate through the entire 42 hour event. The size is typical of these types of deliberative events (see Author, 2018b).

Panelists completed a web survey (October 2012) prior to the deliberative event and were asked to complete identical questionnaires at Sessions 2 and 4. The one-page surveys included a handful of procedural questions and gathered qualitative feedback about the day's events. Panelists were given the option to complete these surveys anonymously to ensure their comfort in reflecting critically. However, most participants wrote their names on the form after reading a statement clarifying that doing so would allow researchers to link their responses across the different surveys. The same questions were repeated in Session 6, but Session 6 also repeated select questions from the pretest survey. Not all questions were repeated, only those that could be expected to change in a two-month period. Finally, six months (June 2013) and two-and-a-half years (June 2015) after the event, panelists were surveyed with a robust set of questions from the pretest survey.

In 2015, the University of Alberta's Population Research Lab was commissioned to ask a small set of questions matching those asked in the two-and-a-half year follow up survey (June 2015). The questions were included in the Alberta Survey 2015 series, a random digit dialed, interviewer-led survey of the Alberta population. The data are free to download from the

University of Alberta's repository: <https://dataverse.library.ualberta.ca/dvn/>. The AAPOR Response Rate #2, which includes partially completed interviews, is 11 percent for the Edmonton-based samples, which is the focal point for the comparative analysis. The poll data serves as a control group for the panel. That said, the poll data contains slight biases in terms of an over-representation of well-educated people. In contrast, the panel (at the pretest stage) is more representative of the census composition of the community than the poll results (Appendix 1). To enable comparisons between the poll and the citizens' panel, the poll data is weighted on education to match census characteristics.

Measurements

For procedural elements, we focused on items that were best matched to the ideas offered by the existing literature. To test Eggins et al.'s (2007) ideas about exposure to diverse viewpoints and fair treatment during deliberation, we asked respondents to agree or disagree with the idea that the citizens' panel has been run in an unbiased way (for exact wording see Table 1). On a scale of strongly agree (1) to strongly disagree (4), the average was 1.78. For diverse viewpoints, we asked whether participants believed that the citizens' panel would represent those most impacted by energy and climate challenges (Table 1). The average was 1.58 on the four-point scale. Finally, we repeated a question about listening to different viewpoints at Session 2 (October 2012), Session 4 (November 2012), and finally, at Session 6 (December 2012). We can see that across these data points, responses remained fairly consistent, but there was a slight drop at session 4 (1.54 to 1.30 to 1.51). Overall, participants agreed that the citizens' panel was unbiased in its procedures, represented diverse perspectives and enabled sharing of diverse viewpoints.

Another set of procedural elements focus on evidence-based opinions and government responsiveness. To test Fishkin's (2009, 2018) ideas about evidence-based opinions, we repeated a line of questioning at multiple sessions. The question was about participants' use of reasoning when expressing their views (see Table 1). The question addresses a defining feature of deliberative talk (Habermas, 1985) as well evaluating the success of the deliberation in encouraging reasoned talk. Across the three data points (October to December 2012), we can see consistent appraisals (1.51 to 1.56 to 1.53) on a four-point scale ranging from strongly agree to strongly disagree.

Finally, like Hibbing and Theiss-Morse (2002) and Trucco (2016), we examined evaluations of government responsiveness. On a scale of 1 to 4 (very unlikely to very likely), we asked respondents how likely the recommendations would be adopted by City Council. Respondents reported, on average, a 3.05 on this four-point scale, which translates to an answer of "somewhat likely".

[insert Table 1 here]

Another set of measures relate to civic capacity. We asked about participants' interest in local community politics, using a five point scale ranging from not at all interested (1) to extremely interested (5), following work by Knobloch and Gastil (2015) and Fournier et al. (2011). Averages are presented as part of the analysis in the next section and as such, we do not repeat the findings. The specific question wording is from Verba et al. (1995). The original scale was 1 (not at all) to 4 (very), but we were concerned about clustering in the highest levels and ceiling effects, so we introduced a fifth response, 'extremely'. While Verba et al. (1995) measured civic skills by asking people if they had to give presentations as part of work, church, or volunteer work in non-political organizations, we adjusted the question to ask about comfort

with public speaking. The adjustment is more in line with the expected duties of a deliberative event participant as well as expected outcomes from participation in a deliberative exercise.

Fournier et al. (2011) used a similar question, but asked about nervousness with public speaking. We ask participants how comfortable they are speaking in a community meeting, on a scale of 1 (not at all) to 10 (very).

Respondents were asked to self-assess how informed they feel about how municipal policy-making works, using a scale of 1 (not at all) to 10 (very). This measure was used to assess political knowledge. As mentioned, political knowledge is a core predictor of voter turnout; we expect similar results for civic activities.

Respondents were asked whether they participated in a series of civic activities, including talking to people to change their views about a political issue, which has been a focal point for much research (Delli Carpini et al., 2004; Eggins et al., 2007; Jacobs et al., 2009; Knobloch & Gastil, 2015). These studies also explored volunteering in the community as an outcome of participation in deliberative process (Delli Carpini et al., 2004; Jacobs et al., 2009; Knobloch & Gastil, 2015). Knobloch and Gastil (2015) also explored political attention. We measured political attention to the issues under discussion at the deliberative event: energy and climate change. Respondents were asked how much attention do they personally pay to environmental issues, on a scale of 1 (no attention) to 5 (a lot of attention). The same question was asked about energy issues.

The questions about civic activities asked about participation in the past 12 months at the pretest stage (October 2012). Building on work from Esterling et al. (2011), we examined contacting public officials as a measure of civic activity. As a further extension to work in this area, we included two additional measures of civic activities: boycotting and donating money to

an organization or group. The inclusion of boycotting is intended to offer a broader definition of civic activities, which have become more diverse in contemporary periods (see Theocharis & van Deth, 2018; Copeland, 2014). In addition, boycotting is particularly relevant for activism related to the environment (Berlin, 2011). As for donating money, we again wanted to include civic activities rather than only ones tied to the formal political process (Theocharis & van Deth, 2018) and donating money has become a popular way to participate in civic life, as will be discussed in the next section. Including boycotting and donating represents a move beyond existing research in this area, which has focused on ‘thin’ measure of institutionalized participation, such as voter turnout (Gastil et al., 2008, p.358; Gastil et al., 2010, p.36). At the six month follow-up, the question was adjusted to “since October 2012, have you done the following” as part of trying to account for changes that may be distinctively related to the deliberative event. Finally, at the two-and-a-half year follow-up (June 2015), the question returned to “in the past 12 months”, which is consistent with the pretest survey.

Method of Analysis

To offer an overview of how civic engagement has evolved over time, the five activities were added together in our analysis. This approach facilitates understanding of how procedural features and civic capacity influence civic engagement in general. It also works well for summarizing trend data across three points in time. Additionally, it offers consistency in the analysis: procedural features and civic capacity measures include ordinal scales, which are analyzed as t-test differences of group means over the series of data points and used in correlational analysis. The civic scale, as opposed to individual items, enables this consistency in the analysis approach. Finally, all these variables are included in the analysis of correlations,

using Pearson product moment correlations. The correlational analysis replicates existing analysis approaches for these research questions, i.e., Eggins et al. (2007).

The sample sizes decrease in the correlational analysis, as the results are based on data that could be linked across time periods – a difficult task since participants were offered the option to submit their survey results anonymously and there are seven data points spanning more than 2.5 years. Because the sample sizes are so small, many substantial correlations do not meet the threshold for statistical significance, even after adjusting the level of significance from $p < .05$ to $p < .10$. To offer transparency in the results, we report on the p -values associated with the estimates. Following trends in political science (Gill, 2018), we move beyond the focus on p -values into the discussion about how substantive the relationships are. Readers can judge for themselves the significance of the relationships using results presented in the tables.

Finally, our analysis focuses on the data points that offer the strongest tests of our causal model (Figure 1). In other words, we use responses to procedural elements collected during the six-Saturday deliberative event, then we focus on the impact at the six month survey for civic capacity, and on civic engagement at the two-and-a-half year period. This panel framework helps test the model depicted in Figure 1. This model offers strong claims about the direction of causal flow, which we want to test with the data. This approach moves the literature beyond the correlational analysis that dominates the civic capacity and civic engagement literatures and explores mediating factors (e.g., Boulianne, 2011). Despite the small sample size and the single case study approach, we believe that the tests of this causal model offer a significant contribution to scholarship, well beyond the confines of deliberative democracy. Of course, the study is a key contribution to the study of the impacts of deliberative democracy on civic engagement, as existing scholarship does not assess long-term impacts.

Results

The most popular civic activities are political talk and donating to an organization or group (see Table 2). Approximately 66.7% of panelists reported talking to someone to try to change their mind about a political issue (n=45). In contrast, among the non-participating general public, only 49.2% reported talking to someone to try to change their mind (n=405, weighted data). However, the strongest support for Hypothesis 1 is based on measures of boycotting. Approximately 48.9% of panelists boycotted (n=45), compared to 19.8% of the non-participating general public (n=405). Panelists were also more likely to report volunteering to work on a community project, a 20 percentage point difference (44.4% vs. 24.5%). Aggregating across the various types of civic activities offers a holistic picture about changes. Panelists were more engaged, compared to those who had not participated in the deliberative event (2.48 versus 1.71). Hypothesis 1 also mentions building civic capacity. As for political interest, panelists report higher levels of political interest, compared to non-participating citizens. The difference is .44 on a five-point scale (Table 2). Panelists and non-participants did not differ significantly in their self-assessed knowledge about policy-making. In sum, Hypothesis 1 has strong support.

[insert Table 2 here]

Hypothesis 2 relates to how panelists' participation changes over three points in time (Table 3). From the pretest to the six months post-test and the two-and-a-half year follow-up, we see a consistent pattern of increasing knowledge about how policy-making works. The average

changed from 4.00 to 5.15 to 5.20 (Table 3). Political interest remained more consistent across the three data-points (see Table 3).

[insert Table 3 here]

As for participation in civic activities, the changes from the pretest (September to October 2012) to the six-month period (June 2013) were small, which makes sense given the short time span limiting opportunities to get involved. Comparing the pretest to the two-and-a-half year follow-up, there are patterns of increasing engagement (Table 3). The most dramatic changes are observed in relation to talking about political issues and contacting officials. At the pretest, 42.2% of panelists reported talking about political issues with the intent to persuade others' opinions. In contrast, 66.7% of panelists reported doing so more than two-and-a-half years later. For contacting officials, 15.6% of panelists reported doing so in the past 12 months when asked at the pretest stage; at the two and half year follow-up, 31.8% of panelists reported contacting officials. Aggregating across the various types of civic activities offers a holistic picture about changes. The average number of activities engaged in increases from 1.91 to 2.48 ($p = .06$). In sum, we find support for Hypothesis 2. Participants reported higher levels of knowledge about policy-making and higher average levels of engagement, comparing the pretest to the 2.5 year post-test.

Hypothesis 3 to Hypothesis 6 relate to the role of procedural elements (October to December 2012) in impacting political interest (June 2013), political knowledge (June 2013) and eventually, civic engagement (June 2015). As noted in relation to Table 1, participants generally reported that they agreed with the fairness of the process, exposure to diverse viewpoints, creation of evidence-based opinion, and perceptions of government responsiveness to the citizens' panel. How do these perceptions influence civic capacity and engagement?

Hypothesis 3 explores a series of questions about exposure to diverse viewpoints (Table 4). Exposure to diverse viewpoints, as measured by “listening to people who I disagreed with,” did increase political interest and in one case, the relationship became significant ($r = .277, p = .097$). Listening to differing viewpoints correlates positively with political knowledge ($r = .244$) and civic engagement ($r = .178$), but the relationship fails to meet the threshold of significance because of the low sample size (see Table 4). There is a comparable coefficient for the relationship between civic engagement and believing the panel reflects diverse viewpoints (.156) but again, the relationship is not significant. Hypothesis 3 has mixed support.

[insert Table 4]

As for fair treatment (Hypothesis 4), the results were not in line with expectations. Believing the citizens’ panel has been run in an unbiased way decreased political interest and civic engagement, but the relationships were not significant (Table 4). Hypothesis 4 was not supported.

As for developing more evidence-based opinions, Hypothesis 5, we asked respondents to report on whether they sought to give reasons for their views. Indeed, this is a core expectation of deliberative talk. In this line of questions, we find our strongest evidence about the role of procedural elements in impacting civic capacity and engagement. We asked this question at sessions 2, 4, and 6. Each time, we find positive correlations with political interest and political knowledge (Table 5). These coefficients range in size from .204 to .389. These correlations are substantially significant. For example, during session 2, providing reasoned opinions increased political interest ($r = .291, p = .076$) and political knowledge ($r = .343, p = .035$). Correlations between developing more evidence-based opinions and civic engagement are also positive.

ranging from .062 to .196, but fail to reach statistical significance. Overall, we find support for Hypothesis 5.

[insert Table 5 here]

As for Hypothesis 6, we find consistent patterns of positive correlations for government responsiveness on political interest, knowledge, and civic engagement. None of the correlations are significant. Hypothesis 6 has little support.

Hypotheses 7 to 10 examine the relationship between civic capacity and civic engagement. We use multiple data points for the analysis of civic capacity. Political attention was not asked about during the pretest survey; as such we could not include it in the analysis related to Hypothesis 2. Respondents were asked on a scale of 1 (no attention) to 5 (a lot of attention) how much attention they personally pay to environmental issues, then the same questions were asked about energy issues. From the six month survey to the survey two years later, there are small increases in political attention to these issues (see averages reported in Table 6). The correlations of attention to political issues and civic engagement are quite strong (.398, .456) in the two-and-a-half year survey (Table 6), but the data points are concurrent and thus cannot speak to causal flow. Linking the six month follow-up (June 2013) survey results about attention to environmental issues and civic engagement two years later (June 2015), we find support for Hypothesis 7. Paying attention to environmental issues leads to civic engagement two years later ($r = .351, p = .042$).

[insert Table 6 here]

As for political interest, we observe similar patterns as for political attention. The concurrent responses for the two-and-a-half year survey (June 2015) show very strong correlations ($r = .595, p < .001$). In the public opinion survey (2015), we find also find strong,

positive correlations between political interest and civic engagement ($r = .393, p < .001, n = 405$). While these correlations of concurrent data are important, they do not speak to causality and causal flow. Considering political interest at the six month follow-up (June 2013) and civic engagement two years later (June 2015), we find support for Hypothesis 8. Political interest leads to civic engagement two years later ($r = .330, p = .061$).

[insert Table 7 here]

Hypothesis 9 explores self-assessed knowledge about municipal policy-making. As mentioned in relation to Hypothesis 2, a trajectory of increasing knowledge related to policy-making can be observed across the pretest, six month follow, and two-and-a-half year follow-up (Table 3). Table 7 introduces another data point, the period immediately after the deliberative event to the trajectory, again affirming a pattern of increasing knowledge about policy-making. As observed with other variables, there is a strong correlation of political knowledge and civic engagement as observed in survey results collected two-and-a-half years after the deliberation. Unlike the other variables, the 6 months survey results for political knowledge do not strongly correlate with civic engagement two years later (Table 7). On the other hand, in the public opinion survey (2015), we find strong, positive correlations between political knowledge and civic engagement ($r = .330, p < .001, n = 405$).

The final hypothesis explores civic skills, measured as comfort with public speaking in a community meeting. Table 7 shows slightly higher levels in the periods immediately after the conclusion of the deliberative event, compared to the two and half year follow-up. As observed with political attention and interest, the concurrent data points contained in the two-and-a-half year survey produce the strongest correlations between public speaking skills/civic skills and civic engagement (Table 7). However, correlating public speaking skills at the six month follow-

up (June 2013) and civic engagement two years later (June 2015), we find support for Hypothesis 9. Comfort with public speaking leads to civic engagement two years later ($r = .387$, $p = .026$).

In sum, using seven-wave data of panelists who participated in an intense deliberative process as well as data from a large public opinion survey ($n=405$), we examined how participation in a citizens' panel impacted civic capacity and civic engagement. Our analysis is unique in examining the conditions under which there are positive impacts, highlighting procedural elements. With 10 hypotheses tested and 63 relationship tests, the key findings could be difficult to determine. As such, we have summarized the findings in Figure 2. The summary does not try to summarize every observed relationship; rather, it summarizes the results that offer the strongest tests of the causal flow linking deliberative process to civic capacity and civic engagement (Figure 1). Of the procedural elements, evidence-based opinions and exposure to diverse viewpoints both impact political interest and, we expect, indirectly impact civic engagement. The direct effects of evidence-based opinions and exposure to diverse viewpoints on civic engagement were sizable, but did not reach statistical significance. The formation of evidence-based opinions also impacted political knowledge, as measured by feeling informed about the municipal policy-making process. Other factors also influence civic engagement, including increased attention to political issues and comfort speaking in public meetings.

Discussion and Conclusion

Prior studies focus on short-term effects of deliberation, which limits our understanding of how deliberative participation can have long-term, enduring effects on civic and political engagement. This paper addresses a clear gap in research. Because of our data's distinction in

demonstrating the trajectory of changes across three points in time, we are able to study both the long-term causal impact of deliberation and the specific elements of deliberation that contribute to civic capacity and engagement. Thus, our findings enrich our understanding of the long-term impact of deliberation on day-to-day civic engagement. In addition, our data addresses “the complicated issue of causality”, which has been a prominent but unaddressed concern in the literature (Jacobs et al., 2009, p. 84-85). We examined how participation in a deliberative event impacted civic engagement. To study this, the literature informs us that the mechanism works in two ways: in the deliberation procedure itself and in the capacity-building brought about by deliberation. We found that (1) some elements of deliberation (i.e., evidence-based process) matter for civic capacity and civic engagement and (2) the capacity factors (i.e., political interest, attention, skills) brought about by deliberation matter for civic engagement.

The most dramatic changes are observed in relation to talking about political issues and contacting officials, which align with existing research on this topic (Knobloch & Gastil, 2015; Esterling et al., 2011). Indeed, the results from testing Hypotheses 1 and 2 offer some strong evidence related to talking politics. The findings clearly point to the role of the deliberative process in increasing levels of political talk (Table 3), increased contact with officials (Table 3), and heightened levels of political interest compared to control group of non-participants (Table 2). We suggest that the results affirm the role of deliberative events in creating opinion-leaders. Panelists become more confident in their opinions and try to influence others. The nature of these opinions is important, since the deliberative event is expected to create more evidence-based opinions and encourage panelists to use reasoning in expressing their views (Fishkin, 2009, 2018). As most scholars of deliberative democracy theory advocate, the goal of deliberation is to foster considered opinions (Fishkin, 2009, 2018). Our findings take a step forward,

demonstrating that considered opinion can increase civic engagement in the long term. These evidence-based opinions are linked to civic capacity, such as political interest and political knowledge (Table 5, Figure 2). While evidence-based opinions were positively correlated with civic engagement, the sample size was a detriment to conclusive findings (Table 5). The correlation failed to meet statistical significance, but the size of the positive correlation is substantial ($r = .196$). In contrast, Egghins et al. (2007) used measures of *intent* to talk politics and exposure to diverse viewpoints, finding a correlation of .312. While our measure of actual activity and multi-wave data are stronger, our sample size is much smaller than Egghins et al. (2007).

Panelists were also more likely to volunteer compared to non-participants (Table 2) and demonstrate a trajectory of increasing likelihood of volunteering (Table 3). The latter finding did not reach statistical significance, but the eleven percentage point change is noteworthy (Table 3). We replicated existing findings in the field that rely on cross-sectional survey data, using self-reporting of deliberative talk and volunteering (Delli Carpini et al., 2004; Jacobs et al., 2009). We also replicate findings that rely on participants' self-assessing changes in their levels of activity (Knobloch & Gastil, 2015). Our multi-wave panel, with a public opinion poll ($n=400$) as a control group, offer stronger causal data to support the theory that deliberation will increase civic engagement.

Our paper is unique in examining how procedural features impact the outcome of deliberation on civic capacity and engagement. While existing literature points to fair treatment, diverse viewpoints, evidence-based opinions, and government responsiveness, we did not find consistently strong support for the importance of these factors. As for fair treatment, we only had one measure for this concept and the measure may not be perfectly aligned with ideas presented

by Eggins et al. (2007). Eggins et al. (2007) used measures of *intent* to talk politics and fair treatment, finding a correlation of .533. The most surprising of results relate to government responsiveness (Table 5). We have a strong measure of this concept. Believing that the government will be responsive to the citizens' panel had small positive correlations with political interest, knowledge, and engagement. The result is surprising, because the event involved government officials in the planning and execution of the event, City Councillors visiting and observing some sessions of the Citizens' Panel, civil servants observing and providing support for every session, and an explicit prior commitment from City administration to seriously consider the report when developing policy, as well as responding explicitly to participants about which recommendation were taken up, which were not, and why (Author, 2018b; Hanson, 2018). Sample size could explain this lack of significance, but the coefficients were quite small (.033 to .127). As for multiple viewpoints (Hypothesis 3), our findings were mixed, which reflects existing scholarship (see above discussion of Mutz, 2006). Again, we suggest further research on whether moderating a discussion with differing viewpoints (versus not moderating) might influence whether there is an impact on civic engagement. Exposure to different viewpoints did increase political interest and as such, holds promise of greater civic engagement.

Participating in a deliberative process does increase civic capacity-building as observed in the results comparing political interest and knowledge across the three points in time as well as comparing panelists to non-participants. Panelists reported higher levels of political interest compared to non-participants (Table 2). From October 2012 (pretest) to June 2015, we see a pattern of increased knowledge of municipal policy-making. The post-event period offered a critical learning process, since panelists observed their report submitted to City Council (April 2013), then acted upon (April 2015) (see Author, 2018b). As such, they learned about policy-

making process in the six Saturdays as well as in the post-event period. The results suggest that political knowledge and civic engagement are only weakly related across data points (Table 7). This could be an artifact of our data and not generalizable. Further research would help evaluate this possibility.

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Table 1: Descriptive Statistics for Procedural Elements

	Mean (standard deviation) sample size
Fair Treatment*	
In my opinion, this citizens' panel has been run in an unbiased way. (session 6)	1.78 (0.72), <i>n</i> = 49
Diverse Viewpoints*	
In my opinion, the participants of this citizens' panel will fairly represent the members of the public who will be affected by the issues raised in the deliberations. (session 6)	1.58 (0.68), <i>n</i> = 48
I listened carefully to people I disagreed with. (session 2)	1.54 (0.54), <i>n</i> = 56
I listened carefully to people I disagreed with. (session 4)	1.30 (0.50), <i>n</i> = 53
I listened carefully to people I disagreed with. (session 6)	1.51 (0.62), <i>n</i> = 49
Evidence-based opinions*	
In discussions today, I sought to give the best reasons I could for my views. (session 2)	1.51 (0.61), <i>n</i> = 55
In discussions today, I sought to give the best reasons I could for my views. (session 4)	1.56 (0.57), <i>n</i> = 52
In discussions today, I sought to give the best reasons I could for my views. (session 6)	1.53 (0.65), <i>n</i> = 49
Government responsiveness	
How likely do you think it is that the recommendations of this citizens' panel will be adopted by the City Council? (session 6)	3.05 (0.62), <i>n</i> = 43

Original response scale: Strongly agree (1), agree (2), disagree (3), strongly disagree (4). In subsequent tables, this scale is reverse so that disagreement is low and agreement is high.

Table 2: Differences between the control group and the panelists 2.5 years after the event

	Panelists 2.5 years months June 2015 n=45	Control Group RDD survey* June 2015 n=405	t-test, p-values
Civic capacity			
Interest in local community politics or local community affairs?	3.18 (0.96)	2.74 (1.08)	2.88 $p = .004$
How informed do you feel about how municipal policy-making works? [knowledge]	5.20 (2.46)	4.93 (2.12)	0.71 $p = .478$
Civic engagement			
Talked to people to change their mind about a political issue	66.7%	49.2%	2.35 $p = .019$
Boycotted certain products for political reasons	48.9%	19.8%	3.77 $p < .001$
Volunteered to work on a community project	44.4%	24.5%	2.58 $p = .010$
Contacted a politician or a local government official	31.8%	21.5%	1.42 $p = .155$
Donated money to an organization or group	54.6%	56.4%	0.23 $p = .818$
<i>Mean, standard deviation and Cronbach's alpha for above</i>	2.48 (1.41) .481	1.71 (1.34) .551	3.49 $p = .001$

*These results are weighted by education to account for an over-representation of educated people in the poll sample. See Appendix Table for further details.

Table 3: Changes in panelists over time

	Panelists pretest Oct 2012 n=45	Panelists 6 months June 2013 n=46	Panelists 2.5 years months June 2015 n=45	t-test, p- values pretest to 6 month	t-test, p- values pretest to 2.5 years
Civic capacity					
Interest in local community politics or local community affairs?	3.02 (0.66)	3.02 (0.93)	3.18 (0.96)	0.00 <i>p</i> = 1.00	0.92 <i>p</i> = .359
How informed do you feel about how municipal policy-making works? [knowledge]	4.00 (1.95)	5.15 (1.71)	5.20 (2.46)	2.99 <i>p</i> = .004	2.56 <i>p</i> = .012
Civic engagement					
Talked to people to change their mind about a political issue	42.2%	47.8%	66.7%	0.54 <i>p</i> = .592	2.41 <i>p</i> = .018
Boycotted certain products for political reasons	48.9%	43.5%	48.9%	0.52 <i>p</i> = .606	0.00 <i>p</i> = 1.00
Volunteered to work on a community project	33.3%	4.13%	44.4%	0.97 <i>p</i> = .336	1.09 <i>p</i> = .280
Contacted a politician or a local government official	15.6%	26.7%	31.8%	1.31 <i>p</i> = .194	1.84 <i>p</i> = .069
Donated money to an organization or group	50.0%	56.5%	54.6%	0.62 <i>p</i> = .535	0.44 <i>p</i> = .663

<i>Mean, standard deviation and Cronbach's alpha for above activities</i>	1.91 (1.43) .558	2.11 (1.30) .362	2.48 (1.41) .481	0.70 $p = .487$	1.90 $p = .060$
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Table 4: Pearson Correlations of Fair Treatment and Diverse Viewpoints (Aspect 1) with Civic Engagement

	Short-term Political Interest 6 months June 2013	Short-term Political knowledge 6 months June 2013	Long-term Civic Engagement 2.5 years June 2015
Fair Treatment*			
In my opinion, this citizens' panel has been run in an unbiased way. (session 6)	-.238 $p = .181$ $n = 33$	+.099 $p = .585$ $n = 33$	-.180 $p = .325$ $n = 32$
Diverse Viewpoints*			
In my opinion, the participants of this citizens' panel will fairly represent the members of the public who will be affected by the issues raised in the deliberations. (session 6)	-.131 $p = .475$ $n = 32$	-.022 $p = .904$ $n = 32$	+.156 $p = .395$ $n = 32$
I listened carefully to people I disagreed with. (session 2)	+.183 $p = .264$ $n = 39$	-.058 $p = .727$ $n = 39$	-.153 $p = .374$ $n = 36$
I listened carefully to people I disagreed with. (session 4)	+.277 $p = .097$ $n = 37$	+.052 $p = .758$ $n = 37$	+.171 $p = .319$ $n = 36$
I listened carefully to people I disagreed with. (session 6)	+.069 $p = .705$ $n = 33$	+.244 $p = .171$ $n = 33$	+.178 $p = .331$ $n = 32$

*To help the interpretation, the original response scale (agree to disagree) has been flipped to disagreement (low) and agreement (high).

Table 5: Pearson Correlations of Evidence-based Opinions and Government Responsiveness (Aspect 1) with Civic Engagement

	Short-term Political Interest 6 months June 2013	Short-term Political knowledge 6 months June 2013	Long-term Civic Engagement 2.5 years June 2015
Evidence-based opinions*			
In discussions today, I sought to give the best reasons I could for my views. (session 2)	.291 <i>p</i> = .076 <i>n</i> = 38	+.343 <i>p</i> = .035 <i>n</i> = 38	+.169 <i>p</i> = .323 <i>n</i> = 36
In discussions today, I sought to give the best reasons I could for my views. (session 4)	.296 <i>p</i> = .080 <i>n</i> = 36	+.204 <i>p</i> = .232 <i>n</i> = 36	+.062 <i>p</i> = .724 <i>n</i> = 35
In discussions today, I sought to give the best reasons I could for my views. (session 6)	.274 <i>p</i> = .122 <i>n</i> = 33	+.389 <i>p</i> = .025 <i>n</i> = 33	+.196 <i>p</i> = .281 <i>n</i> = 32
Government responsiveness			
How likely do you think it is that the recommendations of this citizens' panel will be adopted by the City Council? (session 6)	.059 <i>p</i> = .757 <i>n</i> = 30	.033 <i>p</i> = .865 <i>n</i> = 30	.127 <i>p</i> = .518 <i>n</i> = 28

*To help the interpretation, the original response scale (agree to disagree) has been flipped to disagreement (low) and agreement (high).

Table 6: Pearson Correlations of Political Attention and Interest (Aspect 2) with Civic Engagement

	Mean (standard deviation) sample size	Long-term Civic Engagement 2.5 years June 2015
Political attention (Scale: 1 to 5)		
Since December, how much attention do you personally pay to ENVIRONMENTAL issues? (6 months, June 2013)	3.75 (1.06) <i>n</i> = 48	.351 <i>p</i> = .042 <i>n</i> = 34
Since summer 2013, how much attention do you personally pay to ENVIRONMENTAL issues? (2 year, June 2015)	3.91 (1.05) <i>n</i> = 44	.456 <i>p</i> = .002 <i>n</i> = 43
Since December, how much attention do you personally pay to ENERGY issues? (6 months, June 2013)	3.89 (0.92) <i>n</i> = 46	.246 <i>p</i> = .174 <i>n</i> = 32
Since summer 2013, how much attention do you personally pay to ENERGY issues? (2 year, June 2015)	4.00 (0.92) <i>n</i> = 44	.398 <i>p</i> = .008 <i>n</i> = 43
Political Interest (Scale: 1 to 5)		
Thinking about your local community, how interested are you in local community politics and local community affairs? (6 months, June 2013)	3.02 (0.93) <i>n</i> = 45	.330 <i>p</i> = .061 <i>n</i> = 33
Thinking about your local community, how interested are you in local community politics and local community affairs? (2 year, June 2015)	3.18 (0.96) <i>n</i> = 45	.595 <i>p</i> < .001 <i>n</i> = 44

Table 7: Pearson Correlations of Civic Skills and Knowledge (Aspect 2) with Civic Engagement

	Mean (standard deviation) sample size	Long-term Civic Engagement 2.5 years June 2015
Civic skills (Scale: 1 to 10)		
How comfortable do you feel about speaking in a public at a community meeting? (session 6, December 2012)	5.24 (2.79) <i>n</i> = 49	.182 <i>p</i> = .318 <i>n</i> = 32
How comfortable do you feel about speaking in a public at a community meeting? (6 months, June 2013)	5.30 (2.79) <i>n</i> = 46	.387 <i>p</i> = .026 <i>n</i> = 33
How comfortable do you feel about speaking in a public at a community meeting? (2 year, June 2015)	5.11 (2.96) <i>n</i> = 45	.577 <i>p</i> < .001 <i>n</i> = 44
Political knowledge (Scale: 1 to 10)		
How informed do you feel about how municipal policy-making works? (session 6, December 2012)	4.98 (2.01) <i>n</i> = 44	.004 <i>p</i> = .985 <i>n</i> = 29
How informed do you feel about how municipal policy-making works? (6 months, June 2013)	5.15 (1.71) <i>n</i> = 46	.075 <i>p</i> = .679 <i>n</i> = 33
How informed do you feel about how municipal policy-making works? (2 year, June 2015)	5.20 (2.46) <i>n</i> = 45	.452 <i>p</i> = .002 <i>n</i> = 44

Appendix Table: Demographic Comparison between Panelists, Community and Public Opinion Poll

	Panelists who responded to the survey in 2015	Public opinion poll, 2015	Community profile for 2011
Percentage of females	53.5%	49.4%	50.1%
Percentage who home owners	78.0%	80.8%	70.6%
Average household size	2.4	2.7	2.4
<i>Age:</i>			
18 to 29	23.3%	6.9%	25.3%
30 to 39	14.0%	13.6%	18.9%
40 to 49	18.6%	14.8%	17.9%
50 years and over	44.2%	62.7%	37.8%
<i>Education:</i>			
High school or less	30.2%	5.9%	37.5%
Some college or university	27.9%	15.6%	32.8%
University degree or certificate	41.9%	78.5%	29.7%

Note: The community profile is based on a number of Statistics Canada sources, including the Census and the National Household Survey (Statistics Canada 2012, 2013). The poll/control group results presented in Table 2 are weighted by education.

Figure 1: Theoretical Model

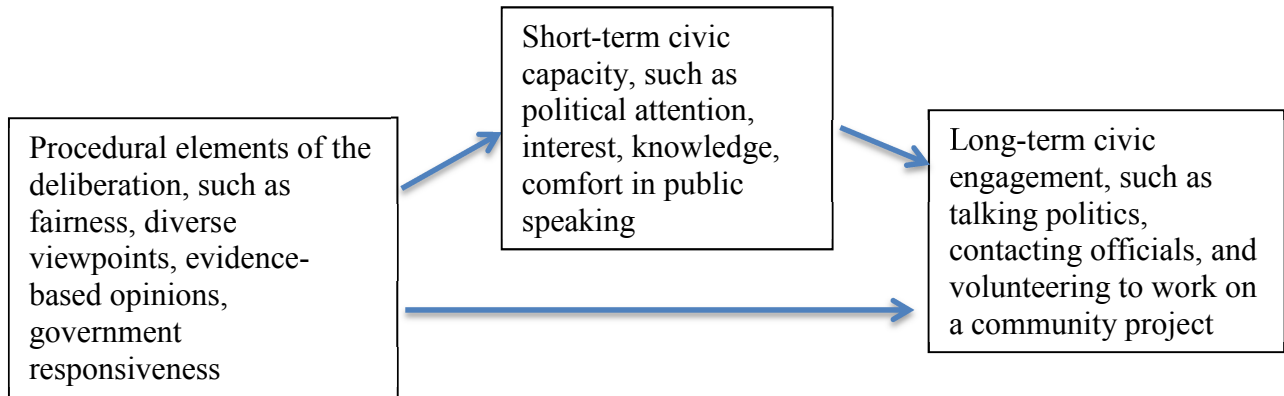


Figure 2: Summary of Key Findings

