



# **Strategic Participation in Protests: Evidence from Women's March in Chile**

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# Strategic Participation in Protests: Evidence from Women’s March in Chile

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## Abstract

In economics and political science, there is insufficient consensus regarding the strategic incentives individuals encounter when deciding to participate in protests. Although most theoretical models assume strategic complementarity, recent evidence (Cantoni et al., 2019) suggests the presence of strategic substitutability. In this paper, we study how agents’ reference groups can influence their strategic decision to attend demonstrations and protests. In particular, we study whether strategic incentives with respect to the own group — according to some given dimension — differ from those with respect to the other group. To accomplish this, we conduct a field experiment involving undergraduate students from two universities during the 2023 Women’s March in Chile. We define reference groups in terms of students’ (self-reported) household income. Agents are then randomly assigned to one of six treatments, with information about the intention to participate in the march reported by their own group, the other group, the entire sample, or a combination of these. With these treatments, we assess whether agents present heterogeneous strategic incentives concerning their group and the other. Our results indicate that participation of high-income students is substantially underestimated by the entire sample on average, while the participation of low-income students appears to be more accurately predicted. In addition, students from different socioeconomic backgrounds behave strategically differently. Evidence suggests that both groups of students behave as strategic complements, but in regards to different reference groups: while the higher income group demonstrates complementarities with both the own and other group, the lower income group only behaves as complements with the other group.

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# 1 Introduction

Protests have become a prevalent phenomenon worldwide. Since the Arab Spring, protests, demonstrations, or other similar events have increased in frequency and size, attributed, in part, to the proliferation of social media (Cantoni et al., 2023). Given this rise in importance, protests have increasingly been studied across the social sciences, specially in economics. Studies have attempted to dilucidate the reasons behind protesting, the contexts in which they arise, and the associated costs and benefits of these mass political movements.

Strategic considerations have long been considered as pivotal in the decision to protest, where an individual’s participation is shaped by the beliefs of participation of others. However, there is still no consensus in the literature on the strategic incentives people face when deciding whether to participate. Most theoretical models of protests assume strategic complementarity, justified by the idea of safety and power in numbers (DeNardo, 2014), or by social image concerns (Enikolopov et al., 2020; Gonzalez, 2020; Bursztyn et al., 2021). However, recent empirical evidence challenges this idea by showing evidence of substitutability (Cantoni et al., 2019). Furthermore, recent models have changed the complementarity conception to include both strategic complements and substitutes (Shadmehr, 2018).

In this paper, we study the role of agents’ differences and similarities in the strategic decision to attend protests. In particular, we explore if strategic incentives can differ depending on reference groups. We ask: do people present different strategic incentives with people sharing their same characteristics compared to those who are more distant to themselves? To be more precise, if we divide the population into two groups according to one relevant dimension—income, ideology, etc.— would people behave as complements (substitutes) with respect to one group and substitutes (resp. complements) with the other? Under which conditions do we see one or the other?

To answer these questions, we implement a field experiment with undergraduate students of two Chilean universities in the context of the Women’s March in Chile. We separate students into two groups according to their monthly household income level (low vs. high), which we use to deliver information that can potentially affect their decision to participate.<sup>1</sup> Agents are randomly assigned to one of six treatments, each consisting of information about the intention to participate reported by their group, the other group, the entire sample, or a combination of these. With these treatments, we can assess whether agents present heterogeneous strategic incentives, and whether these differ between

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<sup>1</sup>As we detail in Section 3.2.1, income was chosen as the dimension of heterogeneity for this experiment because the distribution of income across the sample allowed us to divide students into two groups—high and low income—that can be easily interpreted and commonly understood.

high and low-income groups.

The Women’s March in Chile takes place every year on March 8th, to commemorate International Women’s Day. This is one of the largest protests held on a frequent basis, which makes it a great candidate for a field intervention.<sup>2</sup> As this yearly protest is organized to commemorate Women’s Day, it is more symbolic and demonstrative in nature, without a clear short-term agenda. In addition, the demonstration usually gathers women (or people who identify as women) from different ages, socio-economic backgrounds, and recently has become very diverse in terms of ideologies as well (see Table A4 and Figures A2 & A3), providing us an excellent context to evaluate the role of heterogeneities in the strategic decision to participate. It is also known for its peaceful nature, which makes it a good candidate for interventions as it imposes very low risks on participants.<sup>3</sup>

Heterogeneous incentives concerning different groups can depend on many factors, which can be specific to the strategic environment or the chosen groups. If the outcome of a demonstration depends on the identity, preferences, or characteristics of participating citizens, agents will consider these factors when deciding to join. Individuals might perceive greater value in higher participation from those similar to themselves, leading to increased incentives to participate and hence, strategic complementarity with their own group. Conversely, increased participation from individuals different from themselves might result in less desirable protest outcomes, reducing the incentives to participate (and therefore suggesting strategic substitutability). Social image concerns might also play a role in the participating decision: individuals may have more incentives to participate alongside their own group rather than the other. This would predict more complementarity with the own group. If, in addition, there is animosity with the other group, one could observe strategic substitutability.

Our results suggest the following. First, we find that participation of the high-income group of students is highly underestimated on average by all students, whereas participation of the low-income group seems to be predicted more accurately. In addition, estimation of own group participation appears to be more precise for both income groups.

Second, when analyzing general drivers of participation in protests, both past participation and beliefs about each group’s attendance are found to be significant economically and statistically. While past participation has been widely mentioned by the related literature as an important determinant of current participation, little has been said about beliefs of specific groups’ attendance. Here we

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<sup>2</sup>Historic participation usually ranges around 300.000 participants, but in the year 2020, participation reached an unprecedented participation of more than a million participants. See Table A1 for more detail.

<sup>3</sup>In the survey, participants reported an average level of perception of violence of 1.80, where answers ranged from 1=Peaceful to 5=Violent.

find that an increase of 1 percentage point (pp) in the belief of higher and lower income attendance increases the probability of attending by 10.6 and 8.87 pp respectively, while global attendance beliefs have no significant effect.

Lastly, we find evidence of heterogeneous strategic incentives across different socioeconomic backgrounds. Estimations suggest that both groups of students behave as strategic complements, but with different reference groups. While the higher income group demonstrates complementarities with both the own and other group, the lower income group only behaves as complements with the other group. Furthermore, the effect of other group attendance on own participation for the lower income group is more than double the effect of own group attendance, once again reinforcing the importance of heterogeneous strategic incentives and this present study.

The results found in this paper contribute to a wide but still growing literature on strategic incentives to participate in protests. On the one hand, the evidence suggestive of complementarity challenges the predictions of [Shadmehr \(2018\)](#), who postulates that incentives will depend on the goals of a protest. In this study, we find evidence of complementarities despite the lack of particular demands in Women’s Day marches, contrary to the substitutability that had been predicted by [Shadmehr \(2018\)](#) in similar protests where free-riding concerns should dominate. We believe that in this case, expressive and social concerns (which tend to generate complementarities) dominate over the demand channel postulated by [Shadmehr \(2018\)](#). On the other hand, the heterogeneities found in strategic incentives between groups also presents challenges for economic modelling and the general protest literature, as they suggest that some groups’ specific features might affect incentives despite the fact that both are embedded in the same strategic game, emphasizing the importance of studying the role of heterogeneities in the participation decision.

This paper is organized as follows. We begin by a brief overview of the related literature in [Section 2](#), followed by an in-depth description of the experimental design in [Section 3](#). Then, we proceed to sample descriptive statistics in [Section 4](#), an exploration of general motivations to protest and belief prior distributions in [Section 5](#) and [6](#), and an analysis of the belief updating mechanism in [Section 7](#). The core empirical analysis and estimations can be found in [Section 8](#). Finally, this study is concluded with robustness exercises in [Section 9](#) and a discussion of results in [Section 10](#).

## 2 Related Literature

As activism and protests have become more and more common globally in the last few years ([Cantoni et al., 2023](#)), related literature studying the determinants behind participation in protests and

associating it to a collective action/coordination problem has become quite extensive. While original studies constructed theoretical models postulating strategic complementarity, recent papers have found evidence of substitute forces at work, while other studies allow both forces to interact. These findings are discussed in the following section.

Overall, the protest literature assumes that individuals will participate in a protest if the benefits of protesting (overthrow a government, change the status quo, signalling values, etc.) overcome the costs (coordination and possible repression costs). As mentioned above, until recently most papers assumed that agents behaved as strategic complements, associating it to social benefits and participating utility, reduction of coordination costs, and increase in protest success due to participating numbers. But recent evidence has shown that agents can also behave as strategic substitutes, suggesting that in reality protests are just another example of the classic political collective action problem where individuals have incentives to free-ride on the participation of others (Cantoni et al., 2019).

Among papers that find evidence of complementarities in participation in protests lie Bursztyn et al. (2021), Enikolopov et al. (2020), and Gonzalez (2020). Bursztyn et al. (2021) implements a field experiment during Hong Kong student demonstrations by randomly and indirectly encouraging protest participation. They find that attendance incentives increase future protest attendance, but only when a sufficient fraction of an individual's social network is encouraged, indicating social motives behind participation. In a similar manner, Gonzalez (2020) utilizes school attendance data during the 2011 student protests in Chile and finds causal evidence of complementarities in the decision to skip school within student networks. Enikolopov et al. (2020) explores these social image concerns in Russian protests and finds that the penetration of a social network similar to Facebook increased protest activity during a wave of protests in 2011. McClendon (2014) takes an even more psychological route and attempts to isolate the effects of promises of social esteem on participation in an LGBT pride rally. He finds that this mechanism has an effect on intention to attend, actual attendance and also reported attendance.

On the other hand, there are a series of papers that provide evidence of substitutability. Cantoni et al. (2019) had previously implemented another field experiment in Hong Kong where one day before the Hong Kong antiauthoritarian protests, a subset of subjects is randomly provided with truthful information about the protest plans of others. After the protest, information of final participation is collected, finding that subjects behave as substitutes in the participating decision. The field experiment implemented in this present paper is similar to this study, but instead allows for both substitute and complementary forces to exist and interact due to the existence of differentiated participating

groups of reference. Another paper that finds evidence of substitutability, but in a different context regarding participation in canvassing near elections is [Hager et al. \(2023\)](#). In this paper, a field experiment is implemented near an election and finds that treated canvassers significantly reduce their canvassing intentions when they learn that peers are canvassing more than previously believed. They also find that treatment effects are more important for those who have weaker social ties to the party, leaving room for both strategic forces to coexist ([Hager et al., 2023](#)).

[Shadmehr \(2018\)](#) gathers all of this previously mentioned empirical evidence and attempts to address why one could find different strategic effects in different contexts. He develops a theoretical model and postulates that when a movement's goal is modest, free riding will dominate, causing subjects to behave as substitutes. On the other hand, if a movement has more important goals, such as overthrowing a regime for example, coordination concerns will dominate and subjects will behave as strategic complements. This could potentially explain why some empirical studies have found evidence of complementarities while others of substitute forces. If Shadmehr's model is correct, then one would expect to find more evidence of substitutability in Women's Day marches, as they are more symbolic and demonstrative in nature. Still, it is important to highlight that these models focus on political demonstrations that have interactions between a government and an homogenous mass of citizens, and do not leave room for interaction between heterogenous agents/citizens. We believe that in Women's Day marches, social interactions between individuals are more important than government/citizen interactions, due to all of the particularities of these specific demonstrations, which will be further discussed later on in these paper.

Other recent papers have attempted to study heterogeneous peer effects. [Hager et al. \(2022\)](#) studies the decision to protest when there are threats of counter-protests in Germany and finds that the size of the opposing group has no effect on the protest intentions of supporters. However, as the protest itself becomes larger, supporters of the right movement behave as substitutes, while supporters of the left movement behave as complements. [Martínez \(2023\)](#), on the other hand, finds when studying twitter debate about the right to abortion in Argentina that online activism behaves as strategic complements, both from people of the same and opposite position.

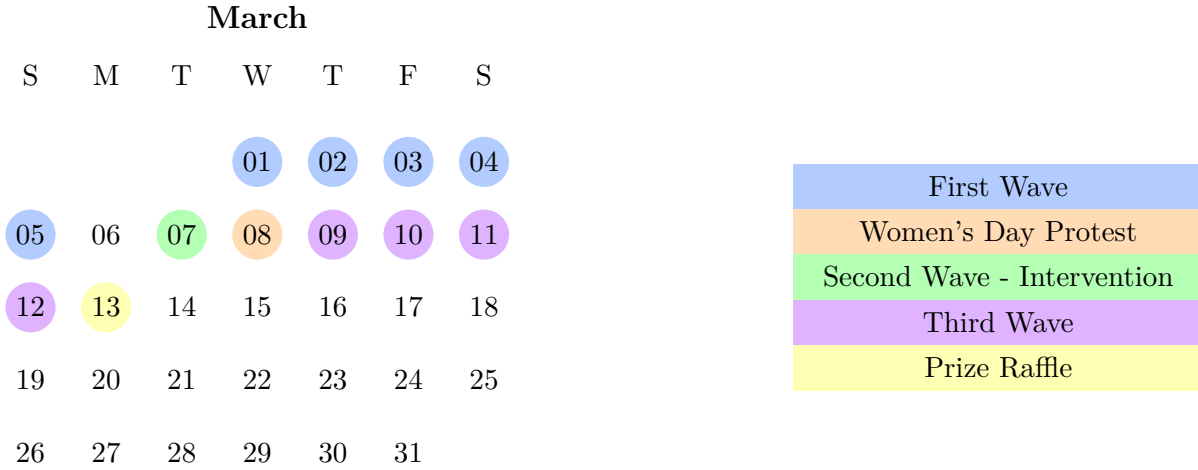
As this present paper studies a protest which is strongly influenced by a feminist agenda, we must also consider literature associated to female political participation. In this line, [Larreboure and González \(2021\)](#) studies the impact of the 2017 Women's march on the U.S. House elections and finds that protesters increased the vote share of underrepresented groups by 3,000 votes in the average county, clearly portraying one possible effect of protests on political participation and representation.

[Bargain et al. \(2019\)](#) studies Arab Spring protests and similarly finds that in regions most affected by protests, there were considerable improvements in women's participation in decisions on health and household expenditure, in addition to declines in acceptance of domestic violence and female circumcision. On the contrary, [Castle et al. \(2018\)](#) finds that the #MeToo movement did not increase political participation among most Americans, but instead only affected individuals who were already aware and predisposed. This paper emphasizes the importance of opportunity costs in the utility function of participation, and postulates that few movements are capable of changing established patterns of political behavior ([Castle et al., 2018](#)). This would suggest that our intervention might not have any effect over people who did not initially have intentions to participate. Another interesting finding to consider is [Hadzic and Tavits \(2019\)](#), which suggests that violent conflicts can produce disparities in political engagement across genders: when confronted with violence, men tend to express more desire to engage in politics than women. If this finding is applied to the present context, the possibility of police repression and violence should be quite important in the list of determinants of participation in protests for women.

Finally, literature regarding the general study of protest events in Chile must also be considered within this review. [Donoso and Von Bülow \(2017\)](#) compile several investigations that analyze movements in Chile through different perspectives, emphasizing particularly the importance of collective action and differences between “institutional” and “non-institutional” politics. Within this book, Chapter 6 ([Forstenzer, 2017](#)) stands out to be particularly relevant for this study, as it studies the evolution of Chilean feminism in the 2000s, distinguishing three branches, and also goes on to characterize the recent rebirth of feminist activism in 2018, post the #MeToo phenomenon. In [Donoso et al. \(2023\)](#), the authors use the Chilean student's movement between 2015 and 2020 to study the relationship between social movements and policy adoption. They find that protests were successfully used to establish free tuition as a pivotal point in the political agenda and public opinion. [Rhodes-Purdy and Rosenblatt \(2023\)](#) delve into the late Chilean 2019 Social Outburst and use it as a case study to argue that empowering citizens through diverse parties and democracy, and avoiding political elitism, is the best way to avoid populism and social unrest. Countless more papers such as [Donoso \(2017\)](#), [Disi Pavlic \(2020\)](#), [Carrasco Paillamilla and Disi Pavlic \(2023\)](#) and others use protest events in Chile as case studies, highlighting the importance of collective action and its influences over politics and society.



Figure 1: Experiment Calendar: March 2023



### 3 Experimental Design

We aim to study people’s strategic decision to attend demonstrations and protests. In particular, we explore if strategic incentives depend on the group of reference: do people respond differently to actions of people sharing their same characteristics than to those who are different? To answer this, we design a field experiment to affect agents’ beliefs about different group’s participation, and study the effect of these beliefs on the decision to protest. We implement this experiment on undergraduate students from two universities in Chile, in the context of the Women’s Day March of 2023.

Women’s Day demonstrations take place every year on March 8th, to commemorate International Women’s Day. There are several characteristics that make this march a good case study. First, it is one of the biggest protests held yearly in Santiago (historic participation rates can be found in Appendix A1). Second, it is particularly known for being peaceful, so the risks to participants of the experiment are very low. And third, it unites people of very different backgrounds: ideologies, social and economic status, ages, etc.<sup>4</sup> This specific heterogeneity in participation will hopefully allow us to explore how different groups interact and determine their own individual attendance.

The experiment is implemented through an online survey that comprises three waves: a first wave, where we collect students’ basic information and intentions to participate in the march; a second wave, where we deliver information on expected attendance from different groups; and a third wave, where we obtain reports on actual participation, together with additional demographic information. Figure 1

<sup>4</sup>See Table A4 for a characterization of the experimental sample and perceptions of the nature of this protest.

shows the timing of the experiment and dates of the respective survey waves. As we detail below, the second wave is the critical stage of the experiment, in which subjects are randomly assigned to different treatments that deliver attendance information. In this way, we are able to track attendance beliefs, participation (intention vs. effective), and the effects of different information treatments on these.

All surveys were conducted online using the Qualtrics platform. Invitations were originally sent to all undergraduate students from institutional university e-mails. During waves two and three, invitations were sent from an e-mail account generated specifically for this experiment. Reminders were also sent, both via e-mail and text message (for those who provided their phone numbers). In order to encourage participation, tickets to a popular music festival were raffled among subjects who participated in all three waves of the survey.

In the following subsections each survey wave will be described in more detail.

### **3.1 First Wave (March 1 - 5) - Baseline Survey**

The first wave was conducted a week before the march (March 1-5). It gathers general information about the participants, such as sociodemographic characteristics, past participation in the movement and marches, position with respect to feminism and sexism, ideological position, religion, and beliefs about expected attendance at the upcoming march for International Women’s Day.<sup>5</sup>

### **3.2 Second Wave (March 7) - Intervention**

This stage is the most important part of the field experiment, as it is when agents are randomly assigned to treatments in which we deliver relevant information on the estimated attendance of specific groups: either a group they belong to, the opposite group, the total sample, a combination of these or no information (the control group).

In this survey wave, subjects were reminded of their reported prior beliefs and depending on the treatment they were randomly assigned to, they receive (or not) additional information about other’s attendance. Then, they were asked to update their beliefs about global and group attendance to the march, and also about personal intentions to participate.

Two types of relevant information were (potentially) provided: (i) information on overall expected attendance at the march, (ii) information on attendance of a specific group. In this way, each person received a combination of information about global attendance and/or attendance from some group

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<sup>5</sup>In order to construct questions regarding gender roles and political interests/participation we based ourselves on [COES: Reproducible Research and Studies \(2023\)](#) and [Paredes et al. \(2023\)](#).

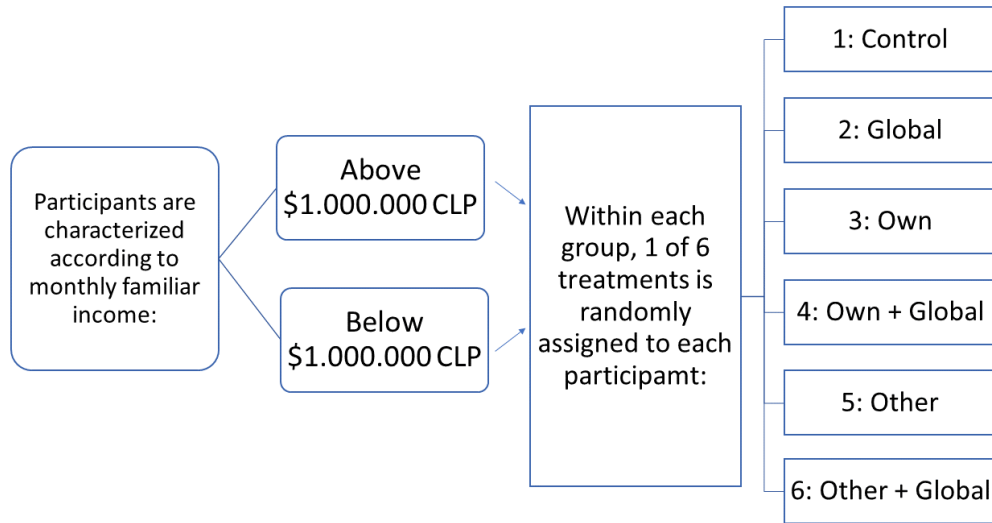
to which they belong to or not. Hence, in the second wave there are six possible treatments:

**Treatments:**

1. Control: No information is provided.
2. Global: Information on global attendance is provided.
3. Own group: Information on own group attendance is provided.
4. Own group + Global: Information on own group and global attendance is provided.
5. Other group: Information of the other group’s attendance is provided.
6. Other group + Global: Information of another group’s and global attendance is provided.

Information nudges are constructed using the intention to attend that agents reported in the first wave of the survey. These are shown in Table 1 and may be referred to as “true” attendance priors in the rest of this paper, although evidently they are by no means the true and effective final march attendance rates. These are simply the only internally consistent attendance statistics available (before treatment and Women’s Day march) to use as possible “true” parameters for the experiment.

Figure 2: Survey Structure



Naturally, students are heterogeneous along several dimensions: ideology, religion, cohorts, income levels, etc. We decide to define groups according to their self-reported socioeconomic status, as can be seen in Figure 2. The main reason for choosing this dimension is that the distribution of income across the sample allowed us to divide students into two groups—high and low income—that can be easily

interpreted and commonly understood. A further analysis of the determination of this dimension can be found in sub-section 3.2.1.

Table 1: **Information utilized as treatments**

Type of Treatment	University 1	University 2
Global	68%	70%
Relative: Below \$ 1MM	67%	73%
Relative: Above \$ 1 MM	70 %	65%

To further illustrate how treatments worked, we present an example of the information delivered in Wave 2 in Figure 3, where the *Treatment 4 - Global + Own* for lower income students of University 1 is displayed.

Figure 3: Information delivered for Treatment 4 - University 1 & Lower Income Group Students

Next we will ask you to predict attendance at the Women’s Day march. Some of these questions were already included in the first wave, so before each question we will remind you of your previous answers.

You may have since changed your mind, so we want to give you the opportunity to respond as best as possible. If you continue believing the same as before, there is no problem, you should simply indicate the same number.

We inform you that in the first wave of the survey, **68%** of the people who responded from University 1 reported that they had intentions to participate in the march.

Additionally, **67%** of people from University 1 whose household income classifies as *Under \$1,000,000 CLP* reported an intention to participate in the march. You had previously predicted  $x\%$ .

Randomization of treatments was done automatically by the survey server (Qualtrics) once participants entered the second wave. The randomization was programmed to assign treatments in a roughly equal manner across all respondents within the randomization unit: group (income level) and university. The distribution of treatments can be observed in Figure A1.

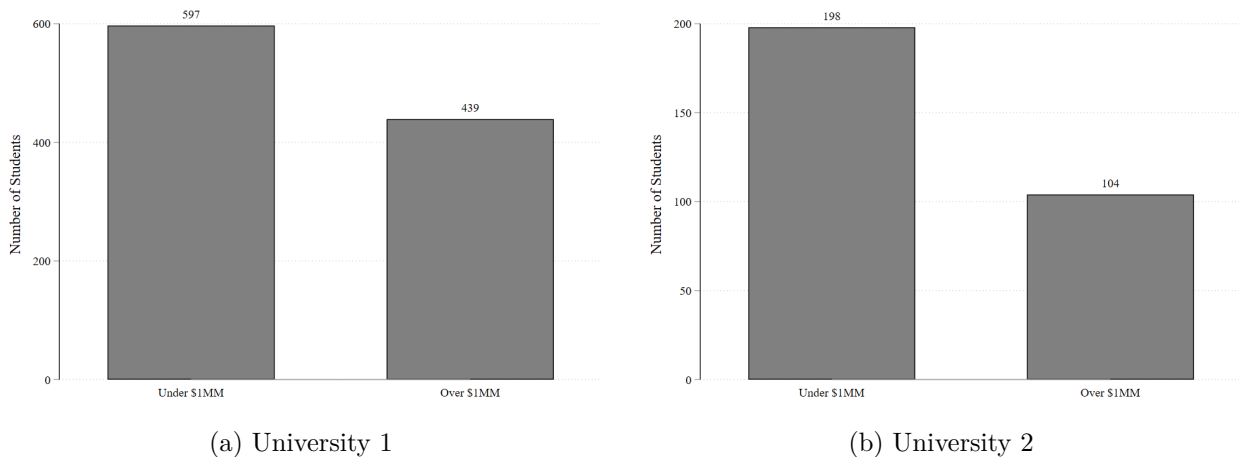
### 3.2.1 Determination of Groups and Dimension of Heterogeneity

Determining the dimension that best captures student heterogeneity is not obvious. A good measure of heterogeneity should discern differences among students based on identifiable characteristics. In that sense, ideology and income are natural candidates. When measured correctly, both dimensions can generate groups with recognizable traits and behaviors, which society might attribute either because of prejudice or historical reasons. For example, high-income students might suffer the stereotype of

being more right-wing and less politically involved than their low-income peers. Left-wing students might be seen as more active and, hence, more likely to participate in demonstrations than right-wing students. Both of these differences in behavior are good enough to capture heterogeneous strategic incentives in the decision to participate in the Women’s March. Hence, the critical factor in deciding a measurement group will be the capacity to measure each dimension correctly. As we argue below, the skewness in the distribution of ideology across students makes it impossible to generate two separate recognizable groups. In contrast, the heterogeneity in students income levels does allow us to separate the high and low-income students in a more consistent way.

To use political ideology as the dimension of heterogeneity, one needs to be able to separate students into (roughly) equally-sized groups that are recognizably different: the left and the right.<sup>6</sup> However, there are two problems with this. First, the measure of ideology is self-reported, and therefore students located on the left of the distribution might not necessarily identify themselves with the left. And second, the distribution of ideology across students is very skewed to the left, with a median of 3 on an ideology scale from 0 (left) to 10 (right). When receiving information treatments this could affect results due to misaligned own/other group identification. In order to avoid such issues, income level was chosen as it is not subject to such interpretation problems.

Figure 4: Groups Formed According to Monthly Household Income Level



Several questions within the first survey attempt to gather information about income level: identification with a social class (low, medium, or high), housing commune, and monthly household income are all asked. But the last mentioned of these is chosen to create the groups for the intervention as it avoids the problems associated to interpretation and distribution that we previously discussed. In

<sup>6</sup>In order to not lose power in estimations, the decision was made to only divide the sample in two groups.

addition, it is found that monthly household income correlates positively with the other socioeconomic variables mentioned (see Table 3), correctly capturing general socioeconomic characteristics.

Students were asked to report monthly household income levels within ranges of \$ 500.000 CLP from \$0 to +\$2.500.000 CLP (the distribution of students within each university according to income level can be observed in Figure A3). This income variable was utilized to divide students into two aprox. equal groups: below \$1.000.000 CLP and above \$1.000.000 CLP, as shown in Figure 4. Treatments in wave 2 will therefore consider subject’s group and university in order to report estimated attendance.

Although monthly household income was the variable among those available that had less interpretation and distribution issues, it is not exempt of them. Particularly we believe it is important to keep in mind that a \$1.000.000 CLP is not a monthly household income that separates those of high income from low (for reference the average monthly household income in Chile for the year 2022 was \$1.304.771 CLP (Ministerio de Desarrollo Social y Familia, 2022)). This monthly income in particular was chosen solely to separate and create groups of roughly equal sample sizes. But as we use this range of income to separate groups, it could be misunderstood that it actually refers to high and low class. To avoid these issues, when we deliver information treatments and refer to groups throughout the experiment, we exclusively refer to groups as “Below \$1.000.000 CLP” and “Above \$1.000.000 CLP”, and never refer directly to class.

### 3.3 Third Wave (March 9 - 12) - Follow-up Survey

Finally, the third and last wave occurs after the protest. In this stage, we obtain subjects’ reports on their actual participation in the march, their motives behind that decision, as well as some additional reflections on how they felt in the protest and any feedback on the survey.

## 4 Experimental Sample

Our experimental population consists of undergraduate female students from two Chilean universities (from now on referred to as University 1 and 2). This sample was chosen for two reasons: on the one hand this public has had an important historic role in Women’s Day protests, and on the other hand it also allows us to reach a relatively large number of people, while keeping control of the experiment and sample.

Thanks to the agreed participation of the two aforementioned universities, around 2.944 students participated in the first wave, of which 2.053 were considered due to initial filters (students were under

age, of another sex, etc. For more detail, see Appendix Table A2). Then, of the 2.053 students, only 1.765 finished the first wave of the survey. Attrition in the following two waves further reduced the sample (see Table 2).

Although there was a high response rate during the first wave of the survey, the second wave suffered from an important degree of attrition. As this loss in observations is significant and poses an important challenge to the internal validity of the experiment, regressions are run in order to determine if attrition was not random. The results of this analysis can be found in Table A3. Regressions indicate that most characteristics are not significant when attempting to explain the decision to participate in the second wave of the survey. The only variable who has significance is year of admission to university. We thus believe that selective attrition is not a threat to internal validity.

Table 2: **Participation by Survey Wave**

	Finish Wave 1	Finish Wave 2	Finish Wave 3
University 1	1403	1087	1036
University 2	362	312	302
Total	1765	1399	1338

If we take final participation and compare to university female populations<sup>7</sup>, we find that University 1 had a final response rate of 4.4% and University 2 of 2.8%. Power analyses indicate that the resulting sample sizes are sufficient in order to achieve at least 80% power (see Figure 5). For these analyses we use the most intensive estimation in samples and covariates as a parameter; the first stage estimation which has 5 covariates (one for each treatment) and two sub-samples (estimations must be run separately for higher income and lower income). When setting power ideally to 80% and assuming a significance criteria of 5%, we find that depending on the  $R^2$  parameter being used<sup>8</sup>, required sample sizes vary between 36 and 79 observations per sub-sample (income group). These sample sizes are more than achieved: for that same first stage estimation final sub-samples varied between 200 - 600 observations. These sub-samples consider both universities and all treatments, as estimations pool these groups together (while controlling for them).

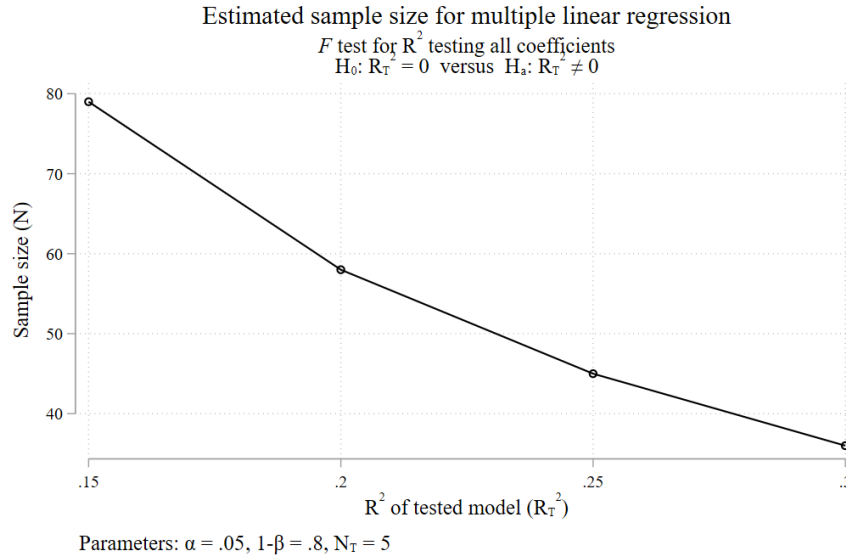
#### 4.1 Sample Characterization

Now that the sample has been described in terms of observations and response rates, we proceed to do an overall characterization of the final experimental sample. This is crucial for determining any

<sup>7</sup>University 1 has 45.248 undergraduate students, where 23.403 students (51.72%) declare to be women. On the other hand, University 2 has 20.762 undergraduate students, of which 10.868 are women (52.35%). (Mifuturo, 2023)

<sup>8</sup>As we are interested in the significance of all of the treatment predictors together, we will use the F test of significance of  $R^2$  which is recommended for these type of analyses.

Figure 5: Power Estimations: Sample size required for determined  $R^2$  levels)



Power estimations were run using the *F* test of significance of  $R^2$  as we are interested in the significance of all covariates. Power = 0.8, and  $\alpha=0.05$ .

underlying imbalances in observable characteristics. For a general review of outcome variables, such as participation and attendance beliefs, and characteristics of the entire sample, refer to Table A4.

As treatments are delivered within income groups, we must first determine if there are any differences in observable characteristics in regards to this dimension. This analysis can be found in Table 3. Significant differences between income groups are observed in regards to ideological position, justification of violence, protest violence and repression expectations, household income range, social class, age and mother’s work status. None of these are very surprising, as they go in line with expected differences between higher and lower income groups due to social and economic stratification. The higher income group on average is seen to have a more right-inclined political ideology, higher social class identification and higher chances of having a working mother when young.

Differences that are significant and interesting to note are that the higher income group proves to have on average a lower justification of violence, and also lower expectations of repression and violence on Women’s Day Protests. Meanwhile, the studied income groups had no significant differences in regards to level of interest in politics, discrimination, average past participation in marches, and appreciation of the feminist movement. These last two are particularly important because if any income group had shown closer ties to the feminist movement (either in past participation or appreciation), results would have likely suffered from bias. These results are in some way similar to Castle et al. (2018),



who finds that people who were most likely to be aware and mobilized by the #MeToo movement were Democrats, those with higher political interest, and those who have experienced sexual harassment, but finds no significant relationship between awareness and mobilization with income level.

Table 3: **Characterization of Income Groups**

	Lower Income Group		Higher Income Group		Difference in means (5)
	Mean (1)	Sample (2)	Mean (3)	Sample (4)	
Ideological Position(1=Left, 10=Right)	2.94	794	3.22	543	-0.29***
Level of interest in Politics	2.34	788	2.38	541	-0.04
Frequency of conversation about Feminist topics	3.45	795	3.45	542	-0.00
Appreciation of Feminist Movement	4.49	795	4.42	543	0.07
Mobilization leads to more change	4.43	787	4.31	537	0.12***
Violence is justified in some cases	2.82	773	2.53	528	0.28***
Women’s mobilization has led to positive changes	4.40	788	4.35	540	0.05
Expected level of violence (1=Peaceful, 5=Violent)	1.83	794	1.75	543	0.08*
Probability of repression in Women’s Day Protests	52.39	795	47.07	542	5.32***
Social Class	2.04	776	3.87	529	-1.83***
Monthly Household Income Range	1.48	795	4.36	543	-2.88***
Age	20.93	794	21.35	542	-0.42**
Have felt discriminated	0.85	717	0.82	487	0.03
Mother worked for salary when I was young	0.79	747	0.87	529	-0.07***
Average participation in marches 2019-2022	0.39	787	0.41	542	-0.02
Non Traditional Gender Role Attitude	4.06	795	4.18	543	-0.13***
Proactive Gender Role Attitude	4.28	795	4.23	543	0.05
Believes women are discriminated in life	4.55	795	4.52	543	0.03

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01. Table shows the mean and sample size of several studied characteristics by income group. Column (5) reports the difference between means, and the significance of a T-Test of means. The analyzed sample considers both universities.

When analyzing the sample’s balance in regards to treatment groups we find few significant differences. In Tables 4 and A6 one can find the means of the same characteristics studied earlier, but now presented at the most disaggregate level: by income group, university and treatments. Table 4 reveals that there is sample imbalance for University 1 between the control and other treatment groups in regards to several characteristics, but always just for one treatment group (either for Own + Global or Other + Global) and additionally, the F-test of a one-way analysis of variance (ANOVA) testing for differences between all groups proves to have no significance in most of these cases. The only variable that seems to have a relevant imbalance, as it appears for both income groups and also has a significant F-test, is having a working mother when young. This could affect results if having a working mother has a direct relation with protest participation, which could be a possibility if class struggles are associated to protest demands for example. Still, as we control for income group by construction, in addition to other SES variables and political ideology, results should not be biased by this particular imbalance.

Table 4: **Characterization of Treatment Groups: University 1**

	Treatment Group												F-Test (13)
	Control		Global		Own		Own + Global		Other		Other + Global		
	Mean (1)	Sample (2)	Mean (3)	Sample (4)	Mean (5)	Sample (6)	Mean (7)	Sample (8)	Mean (9)	Sample (10)	Mean (11)	Sample (12)	
<b>Panel A: Lower Income Group</b>													
Ideological Position(1=Left, 10=Right)	2.96	99	2.95	101	2.99	97	2.87	98	2.92	101	2.83	101	0.10
Level of interest in Politics	2.39	99	2.21	98	2.26	96	2.43	97	2.28	101	2.40	100	0.87
Frequency of conversation about Feminist topics	3.40	99	3.48	101	3.36	97	3.46	98	3.35	101	3.46	101	0.48
Appreciation of Feminist Movement	4.49	99	4.46	101	4.48	97	4.30	98	4.51	101	4.43	101	0.86
Mobilization leads to more change	4.37	98	4.45	101	4.34	94	4.32	97	4.52	100	4.43	100	0.98
Violence is justified in some cases	2.80	94	2.94	100	2.63	92	2.92	96	2.79	96	2.85	100	0.82
Women’s mobilization has led to positive changes nationally	4.45	98	4.44	99	4.39	96	4.28	96	4.48	100	4.36	101	0.95
Level of violence in Women’s Day	1.82	99	1.87	101	1.90	97	1.97	97	1.86	101	1.83	101	0.46
Protests (1=Peaceful, 5=Violent)													
Probability of repression in Women’s Day Protests	53.05	99	52.78	101	45.35**	97	55.29	98	50.59	101	49.17	101	2.10*
Social Class	1.94	97	1.98	97	2.16*	94	2.10	98	2.02	96	2.04	98	0.90
Monthly Household Income Range	1.48	99	1.47	101	1.58	97	1.47	98	1.44	101	1.50	101	0.93
Age	21.22	99	20.50	101	20.61	97	20.80	97	20.66	101	20.12**	101	0.31
Have felt discriminated	0.80	92	0.81	89	0.88	89	0.84	87	0.83	92	0.90*	86	0.90
Mother worked for salary when I was young	0.74	90	0.73	94	0.93***	90	0.77	92	0.74	98	0.79	95	3.07**
Average participation in marches 2019-2022	0.37	97	0.38	100	0.36	96	0.34	98	0.34	101	0.39	99	1.66
Non Traditional Gender Role Attitude	4.08	99	4.10	101	4.04	97	3.96*	98	4.11	101	4.14	101	0.39
Proactive Gender Role Attitude	4.25	99	4.26	101	4.24	97	4.27	98	4.32	101	4.31	101	0.85
Believes women are discriminated in life	4.58	99	4.53	101	4.52	97	4.48	98	4.56	101	4.49	101	0.40
<b>Panel A: Higher Income Group</b>													
Ideological Position(1=Left, 10=Right)	3.57	70	3.29	72	2.90*	73	3.24	72	3.25	76	3.05	76	0.87
Level of interest in Politics	2.36	70	2.28	72	2.48	73	2.43	72	2.32	74	2.46	76	0.45
Frequency of conversation about Feminist topics	3.30	70	3.46	72	3.51*	73	3.50	72	3.53*	76	3.43	76	0.84
Appreciation of Feminist Movement	4.24	70	4.46	72	4.34	73	4.40	72	4.47	76	4.53**	76	1.01
Mobilization leads to more change	4.25	68	4.35	71	4.27	73	4.24	72	4.49	76	4.32	76	0.84
Violence is justified in some cases	2.55	67	2.46	70	2.46	71	2.42	71	2.58	74	2.48	73	0.19
Women’s mobilization has led to positive changes nationally	4.26	70	4.38	71	4.38	72	4.23	71	4.46	76	4.45	76	1.31
Level of violence in Women’s Day	1.70	70	1.67	72	1.82	73	1.76	72	1.84	76	1.83	76	0.71
Protests (1=Peaceful, 5=Violent)													
Probability of repression in Women’s Day Protests	44.69	70	46.90	72	45.75	72	46.26	72	49.62	76	49.24	76	0.43
Social Class	3.91	68	3.87	70	3.96	71	3.87	69	3.77	75	3.91	74	0.53
Monthly Household Income Range	4.36	70	4.40	72	4.52	73	4.39	72	4.49	76	4.41	76	0.19
Age	21.39	70	20.94	72	21.14	73	20.96	72	21.46	76	21.07	76	0.29
Have felt discriminated	0.79	62	0.79	63	0.86	69	0.86	64	0.79	66	0.89	66	0.94
Mother worked for salary when I was young	0.90	69	0.85	68	0.87	71	0.99**	69	0.84	76	0.77**	74	3.22**
Average participation in marches 2019-2022	0.42	70	0.41	72	0.41	73	0.36	72	0.38	76	0.40	76	0.36
Non Traditional Gender Role Attitude	4.14	70	4.29*	72	4.19	73	4.19	72	4.22	76	4.19	76	0.76
Proactive Gender Role Attitude	4.14	70	4.28	72	4.15	73	4.29	72	4.22	76	4.32*	76	1.14
Believes women are discriminated in life	4.46	70	4.45	72	4.47	73	4.60	72	4.49	76	4.51	76	0.68

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01. Table shows the mean of several studied characteristics by treatment group. Stars in columns (1)-(12) represent p-values of t-tests between treatments and the control group. In addition, column (13) reports the F-test of a one-way analysis of variance (ANOVA), where larger values indicate greater differences between group means. The analyzed sample considers only University 1.

In Table A6, one can appreciate that University 2 had more sample imbalance due to lower participation and smaller observations. In light of this difficulty, we considered only running estimations and final analyses on University 1 participants, but finally decided to include the entire experimental sample as these observations contributed power and richness to the data set. In addition, control variables in estimations consider several of the variables that prove to have imbalances, such as interest in politics, ideological position, appreciation of the feminist movement, and age.

Altogether, the results of these multiple balance tests indicate that randomization of treatments was successful in generating balanced treatment groups.

## 5 Protest Motives

Before analyzing how beliefs of others' participation in protests influences one's own determination of participation, we explore general motivations to participate. In order to do this, we estimate linear regressions with protest attendance as the dependent variable. Results can be found in Table A7 and Figures 6 & A4.

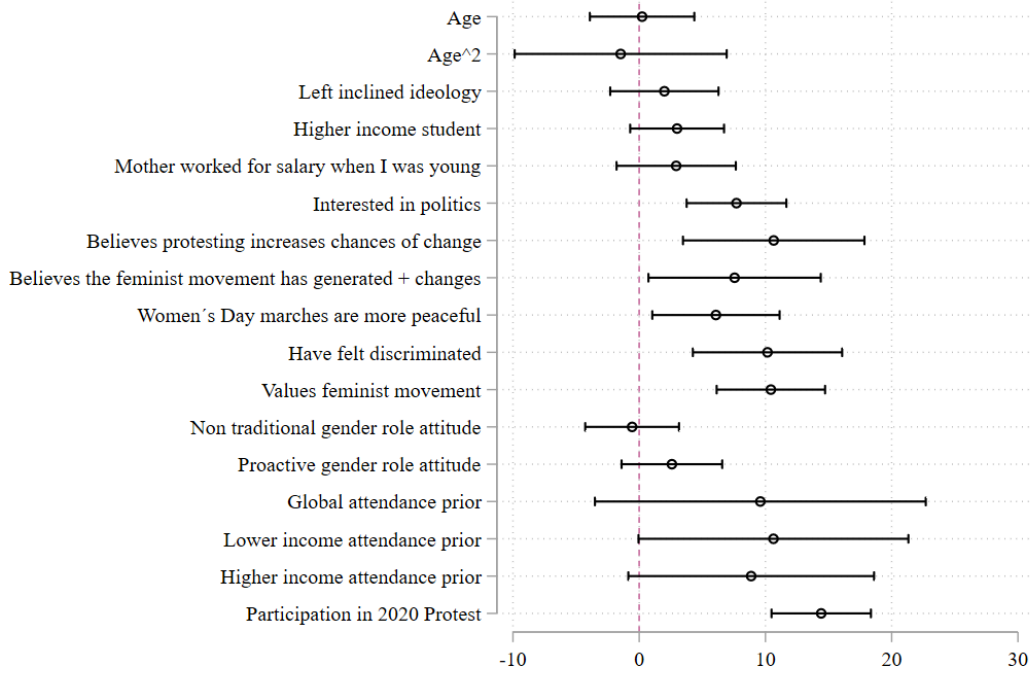
We find that important drivers of protest participation in this sample are: past participation in protests, past experiences of discrimination, appreciation of the feminist movement, the belief that protesting increases chances of change, interest in politics, and attendance priors. Another significant driver is the belief that marches are more peaceful, which is in line with associated literature that mention violence and repression in manifestations as important determinants of participation (DeNardo, 2014). Furthermore, income level (defined as belonging to the lower or higher income group) is seen to be a more significant and powerful predictor of participation than left inclined political ideology: while an increase in income group from lower to higher is seen to increase the probability of participation by 6.3 percentage points (significant to a 5% level), left inclined ideology has a non-significant coefficient of 1.99 (this would mean, if significant, that a change in ideology from right to left<sup>9</sup> would increase probability of participation in 1.99 pp). This further validates the selection of income level as the dimension to evaluate heterogeneities in strategic incentives.

Past participation is certainly a very important motivator: participation in the past march of 2020 increases the probability of participation in 14 to 18 percentage points, significant to a 1% level. This validates the findings of Chenoweth et al. (2022) and Bursztyn et al. (2021) of evidence of persistence in participation. In fact, this result is even more direct than those cited, as here we find that past

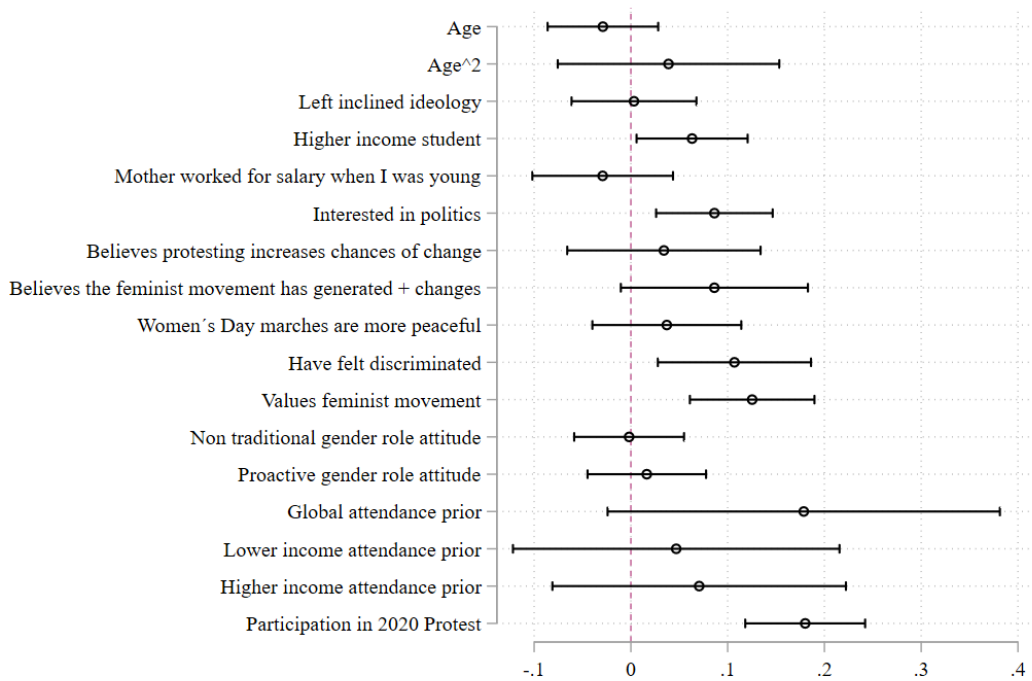
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<sup>9</sup>In the survey participants identified themselves in an ideological scale from 1 to 10 where 1 was left and 10 was right. To form two groups, and hence the binary dummy used in this regression, left was defined as those who identified from 1 to 4 on the scale, and the rest as right.

Figure 6: Why protest?



(a) Probability of Participating



(b) Effective Participation

Plots show point estimates and 95% confidence intervals of linear regressions using protest attendance (measured as probability of attending or effective participation) as a dependent variable. Both universities are considered within the studied sample.

participation increases the probability of attending the same protest, while [Chenoweth et al. \(2022\)](#) finds that participation in some protests increases the chances of participating in other protests and [Bursztyn et al. \(2021\)](#) finds persistent participation in Hong Kong protests if a sufficient number of people from an individual’s network is also incentivized to attend. The persistent nature of Women’s Day marches and its popularity allows us to evaluate this particular persistence in protests, and we find that it is quite an important effect to consider.

Finally, group attendance priors also predict individual participation, but only at the 10% level and for the probability to protest (Panel A of Figure 6), confirming therefore the existence of social drivers and strategic participation in the decision to protest. Although more weak in significance, these coefficients have an important magnitude: depending on the attendance prior in question (global, higher income, or lower income attendance) an increase in 1 percentage point (pp) in these beliefs can increase the probability of participation in 8 to 17 pp.

When analyzed by income group in Figure A4, one can observe certain heterogeneities in drivers of protest participation. Having a mother with a working salary when young seems to be a determinant for higher income but not for lower income students. Interest in politics is significant for both income levels, but has double the magnitude for higher income students (10.33 versus 5.95 percentage points). Interestingly, the belief that protests increase chances of change is only significant for lower income students and has an important magnitude of 12.41 percentage points. Global attendance priors are significant for the lower income group and have a similar effect as past participation: an increase in global attendance beliefs for lower income students increases the probability of participation by 15.93 percentage points. Past participation is equally significant for both income levels, but has a higher magnitude for lower income students (16.1 versus 11.91 percentage points). Finally, it is important to note that both income groups’ valuation (or appreciation) of the feminist movement drive participation similarly and at the same significance.

## 6 Distributions of Priors

Now, we proceed to analyze how attendance belief priors are distributed among survey participants and how they compare to the information treatments that were delivered. This analysis can be found in Table 5.

Beginning by global attendance priors, one can appreciate in Table 5 and in Figure 7 that in University 1, attendance was overestimated by around 2 percentage points, while in University 2 it was underestimated by around 4 pp. In both universities there are no significant differences in predictions

Table 5: **Attendance Priors**

	Mean Belief				
	Truth	Lower	Higher	Difference	P-value
	(1)	Income Group	Income Group	(2)-(3)	(4)
<b>Panel A: University 1</b>					
Global attendance prior	68	69.64	70.20	-0.56	0.53
Lower income attendance prior	67	65.46	65.67	-0.20	0.84
Higher income attendance prior	70	47.33	53.41	-6.08***	0.00
<b>Panel B: University 2</b>					
Global attendance prior	70	66.34	66.00	0.34	0.87
Lower income attendance prior	73	64.38	59.24	5.14**	0.02
Higher income attendance prior	65	45.23	51.48	-6.25**	0.01

\*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\* Treatment truths are displayed in column (1) to compare with both income's group mean attendance beliefs in columns (2) and (3). These are prior beliefs, i.e. before receiving treatment. Column (4) shows the difference in belief of both income groups, and column (5) the p-value of a t-test of means to see if the difference is statistically significant.

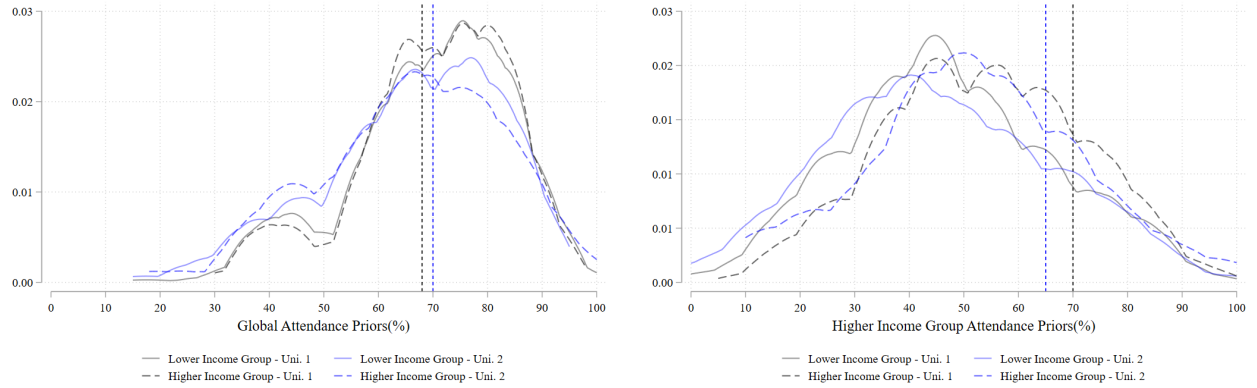
between income groups.

On the other hand, in regards to relative group attendance priors, both were, on average, underestimated, but attendance belief priors of the higher income group were remarkably underestimated, especially by the lower income group. This trend of underestimation of higher income participation is present in both Universities, and even more so in University 1 where the difference between treatment and the mean prediction of the lower income group is 23 percentage points (in University 2 the difference was of 20 pp). The higher income group also underestimates their own participation but by less: in University 1 this difference is of 17 pp while in University 2 of 14 pp.

Attendance of the lower income group was also underestimated but notably less than higher income attendance. In University 1 both income groups have a mean predicted attendance of around 65% while the truth was 67%, only 2 pp in difference. In University 2 there is a greater underestimation: the lower income group predicted on average an attendance of 64% while the higher income group an average of 59% and the truth was 73%, 9-14 pp in difference respectively. Here it is important to note that University 1 comprises 77% of the sample, so when considering treatment effects one must take into consideration that on average the truth of lower income attendance was not that far from average attendance beliefs.

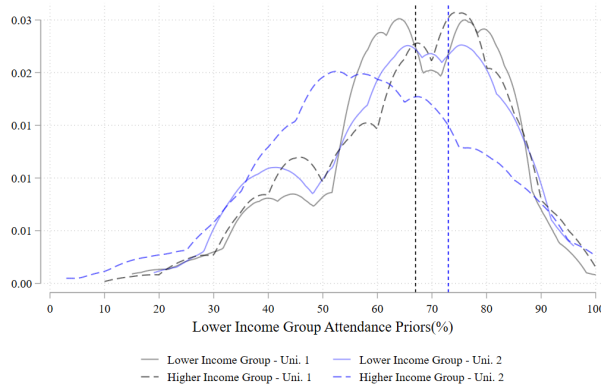
The differences discussed in this section between attendance priors and information treatments will

Figure 7: Distribution of Attendance Priors



(a) Global Attendance

(b) Higher Income Group



(c) Lower Income Group

Kernel density estimates are displayed for the distribution of global, higher and lower income attendance priors of the 4 different samples chosen to study: lower and higher income groups of both universities. Vertical dashed lines show treatment truths for both universities of the chosen attendance prior being studied.

be crucial when assessing the success of this experiment. If there is no belief updating when receiving treatments, then there will be no exogenous nudge in attendance beliefs. This would in consequence not allow a causal analysis of the effects of other’s participation on the own decision to protest.

## 7 Belief Updating: Effect on Attendance Posteriors

For there to be any final treatment effects on participation, treatments must first be able to affect posterior attendance beliefs. In regards to this, two results will be fundamental in order for treatments to be considered successful: (1) treatments are capable of moving posterior beliefs and (2) the direction in which people update their beliefs must be rational, i.e. if their priors were above the information treatment they tend to update negatively towards the truth, and inversely if they were below the information treatment. These two results will be evaluated in the following section, firstly through a descriptive analysis and secondly through first stage regressions.

### 7.1 Descriptive Analysis

It is very direct to appreciate that treatments had an effect on posterior beliefs in density graphs. If one compares with the control group, all treatment groups have a more compressed distribution around the level of the information nudge that was delivered, indicating that subjects did consider this new information in their belief updating (see Figures 8, 9, 10 for University 1 distributions. Figures with University 2 distributions can be found in Figures A5 - A7). Also to be noted: group attendance beliefs are much more disperse than global attendance beliefs. This is to be expected as one might have a more general idea of how many people attend a demonstration, but less of an idea of the attendance of certain groups of people.

In addition, one can also observe in density graphs that relative treatments for the higher income group also have an effect on global belief attendance predictions, even when they are delivered without global attendance information. This does not occur in such a dramatic manner for the inverse case, i.e. global attendance information nudges affecting relative group posteriors.

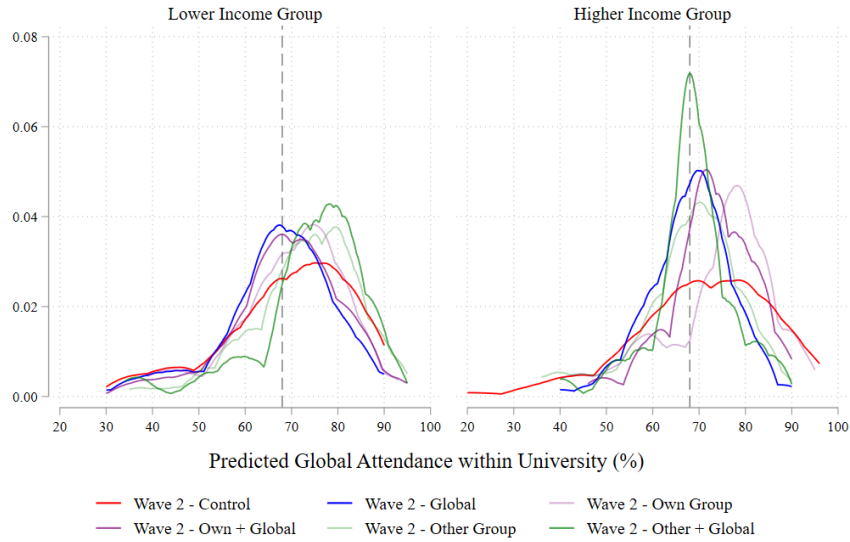
Furthermore, it is also fundamental to evaluate if belief updating follows the direction of rational expectations. If one’s prior beliefs were below the truth, then one would expect subjects to update their posteriors positively (and vice-versa for those who were above the truth). To evaluate this, we replicate binned scatter plots of changes in beliefs (posteriors minus priors) against original prior beliefs made by [Cantoni et al. \(2019\)](#) in Figure 11.<sup>10</sup> Belief updating passes this “sanity-check”, updating

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<sup>10</sup>To see updating of all attendance beliefs and subsamples see Figures A8 - A11.

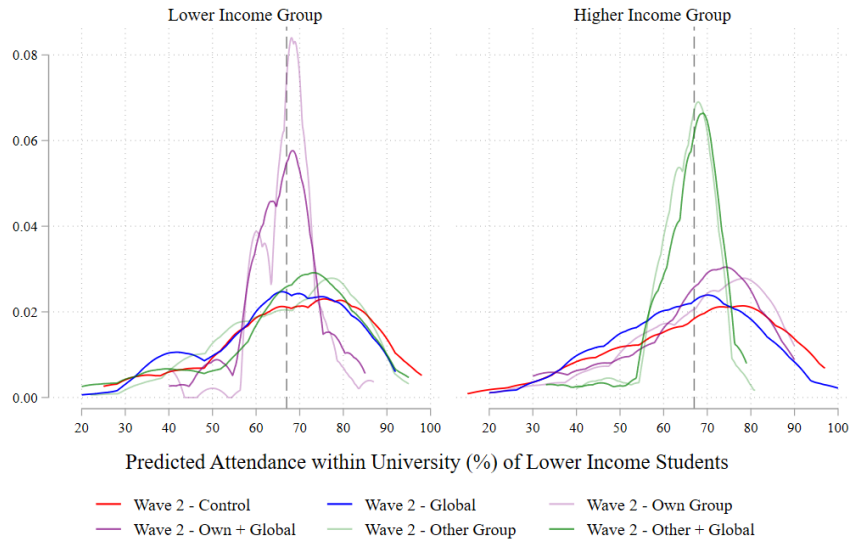


Figure 8: Global Attendance Posteriors



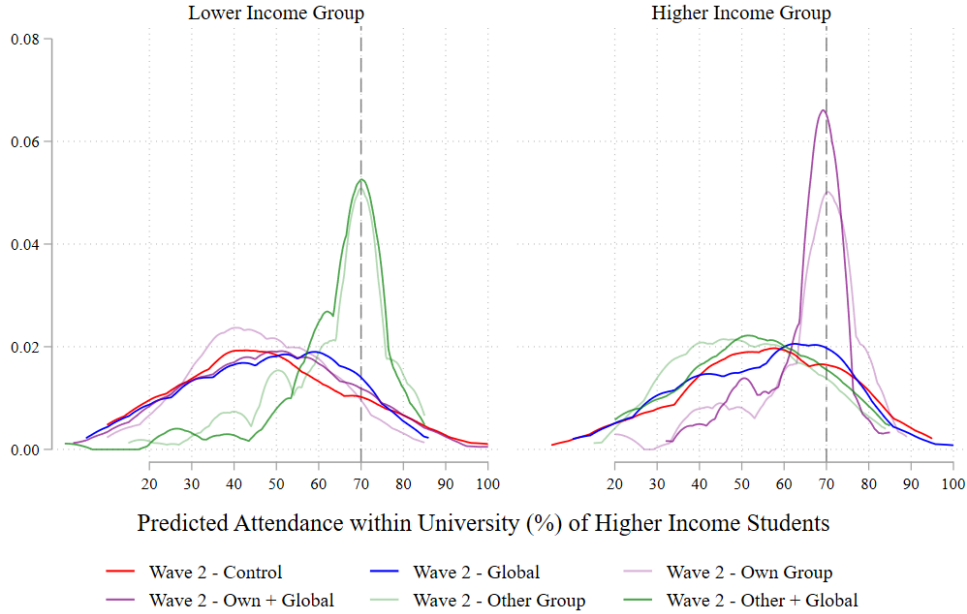
Kernel density estimates are displayed for global attendance beliefs for both income groups (shown in different panels) and all treatments (different colored lines). Sample considers only University 1 and beliefs are posteriors, i.e. post receiving the information treatment. Vertical dashed line is the treatment truth delivered.

Figure 9: Lower Income Group Attendance Posteriors



Kernel density estimates are displayed for lower income attendance beliefs for both income groups (shown in different panels) and all treatments (different colored lines). Sample considers only University 1 and beliefs are posteriors, i.e. post receiving the information treatment. Vertical dashed line is the treatment truth delivered.

Figure 10: Higher Income Group Attendance Posteriors

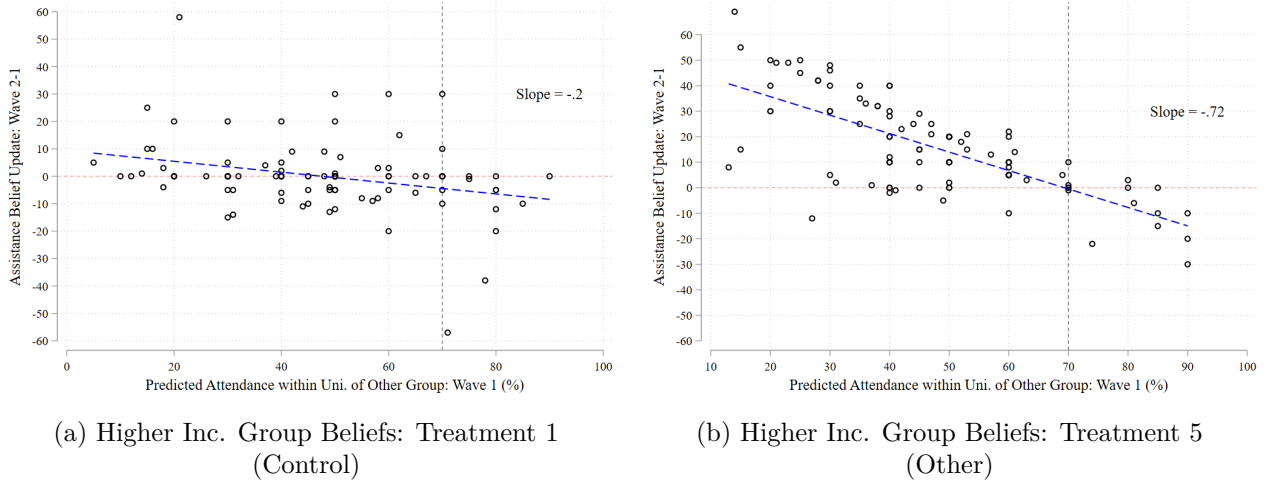


Kernel density estimates are displayed for higher income attendance beliefs for both income groups (shown in different panels) and all treatments (different colored lines). Sample considers only University 1 and beliefs are posteriors, i.e. post receiving the information treatment. Vertical dashed line is the treatment truth delivered.

positively if below information treatment and updating negatively if above information treatment (this is portrayed in figures by the negative slope of linear fits within treated groups). A negative slope is observed in all scatter plots of treated individuals, and even more so for those who received information treatments associated with the higher income group (which had the most dramatic updating due to differences between priors and truth attendance levels as can be seen in Figure 11).

It is also noteworthy to point out that overall one can observe in Figure 11 and Appendix Figures A8 - A11 that in the control group, subjects also updated their beliefs in the same direction but in a much less significant manner (slope is less negative and close to zero, in comparison with treated groups). This is probably due to, once again, a rational behavior in belief updating: one would expect subjects to adjust beliefs towards the center and less towards extremes as the protest date approaches. Or, this could be indicative of an information breach: subjects who participated in the survey could have discussed information treatments with others. We believe this is unlikely as there was little time to share information since treatments were delivered one day before the protest, and also subjects were reminded throughout the experiment to not share information regarding the survey.

Figure 11: Changes in Posteriors According to Treatment: Lower Income Group Students in Uni. 1



Graphs show binned scatter plots of changes in beliefs (posteriors minus priors) against original prior beliefs of higher income group attendance by the lower income group. While Panel A considers only individuals who received the control treatment, Panel B considers those who received treatment 5: Other (as this is the lower income group this means that they received higher income group attendance information). The sample studied only considers University 1 students.

## 7.2 First Stage Regressions

Estimations are also run in conjunction to the previous descriptive analysis in order to determine the effect of treatments on posteriors. Table A8 shows three sets of estimations depending on the posterior belief being analyzed: global attendance (columns 1 - 2), lower income attendance (columns 3 - 4) or higher income attendance (columns 5 - 6). Hence, the regressions run depending of the posterior being analyzed are:

$$\text{Post. Attendance Belief}_i = \alpha_0 + \tau_1 \text{Global} + \tau_2 \text{Own} + \tau_3 \text{Other} + \tau_4 \text{Global} * \text{Own} + \tau_5 \text{Global} * \text{Other} + \theta X_i + \epsilon_i \quad (\text{Eq. 1})$$

Where  $\tau_i$  are the coefficients accompanying dummies indicating the treatment received and  $X_i$  a vector of variables controlling for university, value of the feminist movement, characterization of the protest (more peaceful or violent), political ideology, interest in politics, past participation in Women’s Day marches, commune of residence and attendance priors (global and relative). The dependent variable will be the posterior attendance belief being analyzed, either global, higher income or lower income attendance.

As treatment’s effects on posterior beliefs will depend on prior attendance beliefs, each regression is run in two sub-samples depending on the posterior attendance belief being analyzed. Odd columns show those who were below that respective information nudge or “truth”, and even columns show

those who were above. For example for global attendance beliefs in University 1 where the attendance truth was 68%:

(1) Post. Global Attend.  $\text{Belief}_i = \alpha_0 + (\tau_1 - \tau_5) \text{Treat. Dummies} + \theta X_i + \epsilon_i$  if Global Attend. Prior < 68

(2) Post. Global Attend.  $\text{Belief}_i = \alpha_0 + (\tau_1 - \tau_5) \text{Treat. Dummies} + \theta X_i + \epsilon_i$  if Global Attend. Prior  $\geq$  68

Total effects of treatments are displayed in Table 6 in order to simplify the analysis. These estimations are done without the inclusion of the control variables mentioned earlier (for results with controls refer to Table A8). All coefficients of equation Eq. 1 can be found in Table A9, where mixed (global + relative) treatment effects can be analyzed separately if needed.

Table 6: **First Stage: Treatment Effects on Posterior Beliefs (Total Effects)**

	Attendance Posteriors					
	Global		Lower Income		Higher Income	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)
<b>Panel A: Lower Income Students</b>						
Global Treat.	2.519** (1.179)	-2.080*** (0.672)				
Own Treat.			8.272*** (1.315)	-6.186*** (1.104)		
Other Treat.					19.996*** (1.289)	-2.059 (2.474)
Observations	320	473	423	370	660	133
<b>Panel B: Higher Income Students</b>						
Global Treat.	1.766 (1.277)	-2.464*** (0.760)				
Other Treat.			8.755*** (1.751)	-5.960*** (1.248)		
Own Treat.					14.074*** (1.616)	-2.081 (2.369)
Observations	216	327	277	266	412	131

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions only control for attendance priors(global and relative) and university. Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

One can observe that overall, treatments successfully affected posterior beliefs, both in magnitude and direction. For treated subjects who were below the respective truth, significant coefficients are all

positive, and vice versa for those who were above truth.

We saw before that most students greatly underestimated the attendance of the higher income group. This causes relative treatments of this particular group to be the most powerful in affecting posterior beliefs: in 19.9 percentage points for lower income students and in 14.07 percentage points for higher income students (who were below the truth). As most subjects underestimated higher income group participation, the subsample of subjects with priors above higher income attendance truth has limited power (133 observations versus 300 - 600 observations in the other subsample/columns) and therefore no significant effects.

Global treatments have the smallest effect of around +/- 2 percentage points depending on whether subjects were above or below truth. This is probably attributed to the small differences between priors and delivered treatments, which was discussed before.

For lower income attendance treatments, the effect was around 8 percentage points for those below truth and -6 percentage points for those above truth (around the same magnitude for both income groups). This is still an important nudge in posteriors considering that lower income attendance priors were not that deviated from the truth for most of the sample (University 2 had more differences than University 1).

These estimated treatment effects are robust to controlling for subject characteristics and prior beliefs. Magnitudes of coefficients and significance vary very little when including controls (see Table A8).

## 8 Strategic Decision to Participate

Now that treatments were deemed successful in nudging beliefs, we can proceed to analyze if they had an effect on participation. This will be done through several estimations: first by analyzing the direct link between posterior beliefs and participation (second stage regression), then by analyzing the reduced form of treatment effects directly on participation, and finally we combine all of these previous estimations into an instrumental variables approach.

### 8.1 Second stage: Posterior effects on participation

In Table 7 one can find the effects of regressing the different attendance posteriors on participation (both intended probability to attend and reported effective participation). The regressions are the following:

$$\text{Participation}_i = \alpha_1 + \beta_1 \text{Posterior Belief}_i + \theta X_i + e_i \quad (\text{Eq. 2})$$

Where *Participation* can be either reported probability to attend in wave 2 or final reported participation in wave 3, and *PosteriorBelief* is any of the three posterior attendance beliefs (global, higher or lower income).  $X_i$  is the same vector of control variables described in the previous section. Table 7 shows results without controls, refer to Table A11 for results with controls.

We find statistically significant effects only for lower income students and for global and higher income attendance posteriors. The magnitude of these effects appear to be small: an increase in 1 percentage point in global attendance beliefs increases the reported probability of lower income students to attend by 0.255 percentage points, while a 1 percentage point increase in the belief of the higher income group attendance increases the probability to attend by 0.197 percentage points. When looking at the effect of an increase of one standard deviation of posteriors, we find that both attendance posteriors (on their own) nudge participation by around 3.5 percentage points.<sup>11</sup> This accounts for around 10% of the dependent variable’s standard deviation ( $\sigma = 34.54$ ).

These results indicate complementarities in the strategic decision to participate in protests, both with the global population and the opposite group, in the case for lower income students. For higher income students, complementarities are also found with the own group (an increase in 1 percentage point of higher income attendance increases the reported probability to attend of this group by 0.315 percentage points), but it is important to note that these results are not robust to the inclusion of control variables (see Table A11).

Possible sources of endogeneity in these estimations must be considered. For example, they could be coming from changes in beliefs of attendance associated to changes in perceptions of the protest (changes in expectations of violence, or feminist movement propaganda). In this case, if direct second stage estimates were to be used, then results would be biased as they would incorporate effects associated to these perception effects, and not the exogenous change in attendance we want to measure. Hence, as possible endogeneity in this estimation could be downplaying/amplifying the role of attendance beliefs on participation, we proceed to reduced form and IV estimations to further elucidate the links between these two.

## 8.2 Reduced Form Estimations

Now we proceed to analyze reduced form estimations. As it is important to consider if agents’ priors were below or above truth for the particular treatment effect we want to analyze, regressions are run

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<sup>11</sup>This is found by multiplying coefficients by their respective standard deviations:  $\beta_{global} * \sigma_{global} = 0.255 * 12.44 = 3.17$  &  $\beta_{higher} * \sigma_{higher} = 0.197 * 18.99 = 3.7$

Table 7: **Posterior Effects on Participation**

	Reported Probability to Attend			Effective Participation		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Lower Income Students Sample</b>						
Global Attendance Posteriors	0.255*			0.257		
	(0.134)			(0.190)		
Lower Income Attendance Posteriors		0.004			-0.142	
		(0.104)			(0.150)	
Higher Income Attendance Posteriors			0.197**			0.260**
			(0.078)			(0.112)
Mean of Dep. Var.	57.10	57.10	57.10	41.82	41.82	41.82
St. Dev. of Dep. Var.	34.54	34.54	34.54	49.36	49.36	49.36
Observations	792	792	792	782	782	782
<b>Panel C: Higher Income Students Sample</b>						
Global Attendance Posteriors	-0.032			-0.057		
	(0.194)			(0.259)		
Lower Income Attendance Posteriors		0.077			0.027	
		(0.137)			(0.187)	
Higher Income Attendance Posteriors			0.315***			0.182
			(0.112)			(0.154)
Mean of Dep. Var.	60.23	60.23	60.23	47.31	47.31	47.31
St. Dev. of Dep. Var.	35.42	35.42	35.42	49.97	49.97	49.97
Observations	542	542	542	539	539	539

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions only control for attendance priors(global and relative) and university. Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

with all treatment interactions for each attendance treatment (global, other, own), level of prior in regards to truth (above or below), and income group (high or low). As before, we analyze two dependent variables to evaluate if there were any effects on participation: self-reported probability to attend the march (reported in wave two) and final effective participation (reported in wave 3). These reduced form estimations are summarized in Table 8.

In this table it is fundamental to remember that each reported coefficient represents a different estimation. For example, take the first coefficient in column (1) and row (1): this estimation is run for lower income students who had global attendance priors below the global attendance truth, and only the effect of the global attendance treatment upon reported probability to attend is reported. Note that even though we are only presenting the relevant coefficient, these regressions include all possible treatment interactions and controls as regressors within each estimation. The estimation run in this example would therefore be:

$$P_i = \begin{cases} \alpha_1 + \beta_1 \text{Global}_i + \beta_2 \text{Own}_i + \beta_3 \text{Other}_i + \beta_4 \text{Global}_i * \text{Own}_i + \beta_5 \text{Global}_i * \text{Other}_i + \theta X_i + \epsilon_i, & \text{if } \mathbf{Global} \text{ attendance prior} < \mathbf{Global} \text{ Truth} \\ \alpha_2 + \beta_6 \text{Global}_i + \beta_7 \text{Own}_i + \beta_8 \text{Other}_i + \beta_9 \text{Global}_i * \text{Own}_i + \beta_{10} \text{Global}_i * \text{Other}_i + \theta X_i + \epsilon_i, & \text{if } \mathbf{Global} \text{ attendance prior} \geq \mathbf{Global} \text{ Truth} \end{cases} \quad (\text{Eq. 3})$$

Where  $P_i$  is the participation dependent variable being studied,  $X_i$  is the vector of control variables, and all the variables accompanying  $\beta_x$  are treatment dummy variables. As before, we will divide the sample into two groups according to whether subjects were above or below that particular truth. Within this estimation we will only consider the marginal effect pertaining to the attendance treatment we are analyzing (in this case global attendance for example).

This is done for each row and column, considering every time which treatment effect is being evaluated and therefore the respective type of prior to compare with treatment truth.

Results appreciated in Table 8 indicate that only treatments referring to higher income attendance had a direct effect on participation. This is probably due to the smaller differences of other treatments with priors, which we have discussed on several occasions before. For students of lower income, complementarities are observed with the attendance of the higher income group: an increase in 1 percentage point of attendance of this group will increase final participation by 8.5 percentage points (Panel B, Col. 3). On the other hand, for higher income students an increase in one percentage point of own group attendance increases the probability to attend by 6.25 percentage points (or 11.6 percentage points if referring to final participation).

Overall this exploration, which is mostly indicative as direct treatment effects on participation on their own are not as important, indicates that only treatments referring to higher income attendance had a direct effect on participation of both income groups. This is in line with what we had found previously when analyzing prior distributions and treatment effects on posteriors: the biggest nudging effect in attendance beliefs is produced by higher income attendance which had been considerably underestimated. An additional graphical analysis of changes in participation according to treatment and level of priors in comparison to truth can be found in Appendix Section 12.

### 8.3 Two Stage Estimates (IV)

Finally, we include all the above mentioned estimations into one analysis via two stage estimates using instrumental variables. In the first stage, which was discussed in Section 7.2, we estimate the effects of treatments on subject's posterior beliefs of participation. Then in the second stage, we exploit vari-



Table 8: **Reduced Form: Treatment Effects on Participation**

	Lower Income Students				Higher Income Students			
	Reported Probability to Attend (Wave 2)		Effective Participation (Wave 3)		Reported Probability to Attend (Wave 2)		Effective Participation (Wave 3)	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Baseline</b>								
Global Treat.=1	0.473 (3.750) [n=319]	-1.750 (3.166) [n=473]	6.5 (0.053) [n=314]	2.2 (0.047) [n=468]	-1.075 (4.859) [n=215]	-4.876 (3.842) [n=327]	7.7 (0.069) [n=214]	-1.8 (0.056) [n=325]
Own Treat.=1	0.653 (3.973) [n=422]	-2.175 (4.324) [n=370]	2.4 (0.057) [n=417]	1.4 (0.063) [n=365]	5.861 (4.341) [n=411]	-3.432 (7.482) [n=131]	9.7 (0.061) [n=410]	-2.3 (0.108) [n=129]
Other Treat.=1	4.957 (3.169) [n=659]	11.426 (7.059) [n=133]	10.9** (0.046) [n=649]	16.8 (0.106) [n=133]	1.870 (5.380) [n=276]	-2.540 (5.098) [n=266]	7.6 (0.076) [n=274]	-5.7 (0.075) [n=265]
<b>Panel B: + Controls</b>								
Global Treat.=1	1.224 (3.377) [n=316]	-1.738 (2.796) [n=467]	7.9 (0.050) [n=311]	2.9 (0.045) [n=464]	-1.121 (4.305) [n=214]	-3.160 (3.243) [n=326]	10.9 (0.066) [n=213]	1.9 (0.053) [n=324]
Own Treat.=1	1.167 (3.696) [n=418]	-2.825 (4.163) [n=365]	6.4 (0.054) [n=413]	0.1 (0.064) [n=362]	6.258* (3.481) [n=411]	-1.279 (6.153) [n=129]	11.6** (0.056) [n=410]	-5.0 (0.108) [n=127]
Other Treat.=1	3.783 (2.838) [n=650]	-3.667 (7.853) [n=133]	8.5** (0.042) [n=642]	-4.7 (0.110) [n=133]	1.516 (4.315) [n=275]	-1.290 (4.262) [n=265]	9.2 (0.066) [n=273]	-6.5 (0.072) [n=264]
Observations	[n=650]	[n=133]	[n=642]	[n=133]	[n=275]	[n=265]	[n=273]	[n=264]

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Panel A reports baseline results, which only control for attendance priors(global and relative) and university. Panel B includes all control variables: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

ation in beliefs induced exogenously by treatments to estimate the final effect of other's participation on one's own decision to protest.

In a similar manner as before we will estimate for the corresponding subsamples: below and above truth, combined with higher or lower income group identification. Second stage estimations are performed in subsamples according to whether priors were above or below truth because the first stage must be estimated in this manner, otherwise the direction of belief updating would be incorrectly estimated. Here, positive (or negative) coefficients are interpreted independent of whether they belong to the above or below truth subsamples: an increase in attendance beliefs increases (decreases) the intention to participate. Therefore while positive coefficients would be indicative of the presence of strategic complementarity, negative would be indicative of substitutes.

Each treatment will be included in one separate IV estimation. Therefore, for a given group  $Z \in \{global, own, other\}$ , we will estimate for each of the eight subsamples<sup>12</sup> the following IV regression:

$$(1) \quad \mathbf{Z \text{ Attendance Belief}}_i = \alpha_0 + \tau_1 \text{Treatment} + \theta X_i + \epsilon_i$$

$$(2) \quad \text{Participation}_i = \alpha_1 + \pi_1 \widehat{\mathbf{Z \text{ Attendance Belief}}}_i + \phi X_i + e_i$$
(Eq. 4)

These results are shown in Table 9, while first stage results of this estimation can be found in Table A12 of the Appendix. Estimations including control variables are found in Tables A13 and A14.

Table 9: **Two Stage Estimates: Treatment Effects on Participation**

	Sample: Lower Income Students				Sample: Higher Income Students			
	Probability to Attend		Effective Participation		Probability to Attend		Effective Participation	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Beliefs</b>								
Global attendance Posterior	0.164 (1.699)	0.792 (1.582)	2.437 (2.548)	-1.186 (2.229)	-0.983 (3.416)	2.015 (1.783)	5.788 (8.065)	0.499 (2.372)
Mean of Dep. Var.	52.61	60.13	36.31	45.51	57.30	62.16	45.33	48.62
St. Dev. of Dep. Var.	34.47	34.29	48.16	49.85	36.23	34.79	49.90	50.06
Observations	319	473	314	468	215	327	214	325
Kleibergen-Paap rk Wald F Statistic	3.21	8.48	3.54	9.57	1.27	8.38	0.98	8.41
<b>Panel B: Own Group Attendance Beliefs</b>								
Lower Income attendance Posterior	-0.272 (0.550)	0.981 (0.686)	-0.771 (0.781)	0.490 (0.997)				
Higher Income attendance Posterior					0.320 (0.254)	-1.074 (4.559)	0.453 (0.354)	-2.357 (6.374)
Mean of Dep. Var.	54.02	60.62	38.61	45.48	58.10	66.92	45.12	54.26
St. Dev. of Dep. Var.	34.46	34.34	48.74	49.86	35.71	33.75	49.82	50.01
Observations	422	370	417	365	411	131	410	129
Kleibergen-Paap rk Wald F Statistic	31.68	34.17	30.90	32.64	116.90	0.50	118.38	0.60
<b>Panel C: Other Group Attendance Beliefs</b>								
Lower Income attendance Posterior					0.523 (0.698)	1.270* (0.758)	1.219 (1.037)	2.033* (1.144)
Higher Income attendance Posterior	0.254* (0.143)	13.023 (29.390)	0.495** (0.205)	15.003 (34.403)				
Mean of Dep. Var.	55.44	65.32	39.29	54.14	56.82	63.78	42.34	52.45
St. Dev. of Dep. Var.	34.51	33.60	48.88	50.02	35.84	34.68	49.50	50.03
Observations	659	133	649	133	276	266	274	265
Kleibergen-Paap rk Wald F Statistic	299.56	0.19	301.41	0.19	20.81	36.12	19.38	36.64

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions only control for attendance priors(global and relative) and university. Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

IV estimations confirm previous findings of lower income group complementarities with higher

<sup>12</sup>For both income groups, two sets of estimates are done (depending on whether priors were below or above truth) for two different dependent variables (probability to attend and effective participation).

income group attendance. In addition, estimations also show evidence of complementarities for the higher income group with both the own group and the other group’s attendance.

In Panel A, no significant effects are found. This is in line with previous first and second stage results where no, or small, effects had been found. When looking at Kleibergen-Paap rk Wald F statistics, we can observe that the global treatment served as a weak instrument despite relatively balanced subsamples with power (200+ observations per column). Hence, as the instrument wasn’t capable of effectively nudging attendance beliefs, we cannot conclude much about the strategic forces behind global attendance and participation.

Then, in Panel B we don’t find effects for own group treatments. When comparing with results that include control variables (see Table A13), we do find effects but only on higher income students: an increase in 1 percentage point in higher income group attendance increases effective participation by 0.6 percentage points and the probability to attend by 0.43 pp (at a 5% significance level). Although this effect only appears in estimations with controls, we believe that it should be considered as magnitudes do not vary much between estimations (with or without controls) and control variables could be potentially eliminating bias that does not allow effects to be significant without their presence.<sup>13</sup> Within Panel B most estimations have powerful F statistics accompanied with 350+ observations except for higher income subsamples with subjects who had priors above truth (this is in line with what we have discussed regarding general underestimation of higher income student’s participation). Therefore, we can conclude that except for columns (6) and (8), own group attendance treatments were successful. Hence, the complementary forces observed only for higher income students, in estimations with control variables, are probably the only ones in action. In subsamples (6) and (8), there is an evident lack of power which does not allow us to conclude about strategic incentives for higher income students with high own group attendance priors.

Finally, in Panel C we find evidence of complementary forces between other group attendance and participation for both income groups. An increase in 1 pp in higher income group attendance, increases the probability of attendance by 0.254 pp and effective participation by 0.495pp of the lower income group. On the other hand, an increase in 1 pp in lower income group attendance increases the probability of attendance by 1.27 pp and effective participation by 2.03 pp of the higher income group. This last effect is quite notable as not only is it more than twice as big as the other effects found, but also represents 42% of the dependent variable’s variation.<sup>14</sup> If we compare this effect with, for example, the

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<sup>13</sup>In all the previous estimations, the inclusion of controls does not affect results apart from marginally affecting the magnitudes of significant coefficients. In addition, in balance analyses we concluded that the use of controls is recommended.

<sup>14</sup>Taking the estimated coefficient and multiplying by it’s standard deviation we find:  $\beta_{lower} * \sigma_{lower} = 2.03 * 10.32 =$

effects found previously in the Section ??, we see that this effect is of a big magnitude. We had found previously that past participation in protests increases present participation by 52%, while here we are finding that opposite group participation can account for around 42% of the participation decision’s variation.<sup>15</sup> Within this panel, all subsamples have very strong Kleibergen-Paap F Statistics except for subsamples in columns (2) and (4). Once again this is due to a lack of observations in subsamples of people with higher income attendance priors above truth. Results of this panel are unaffected when including control variables (magnitudes of significant effects change marginally).

This would indicate that other group attendance, when compared to own group attendance effects, has stronger complementary ties in strategically incentivating participation for the higher income group. On the one hand, this could be explained by a natural more precise estimation of one’s own group attendance (due to closeness and familiarity with individuals of the same group) and therefore a more imprecise estimation of other group participation (as seen in Table 5). Another possible explanation could be that a higher participation from the other group generates a desire to increase own group participation in order to maintain (or increase) group representation in the march. Still, as mentioned earlier, no effects are found within this experimental sample for own beliefs on the lower income group’s attendance, and therefore this result cannot be attributed to the entire sample.

If we compare with the effects found in [Cantoni et al. \(2019\)](#) we find on the one hand different strategic incentives, and on the other hand stronger effects in terms of magnitude. In that paper, IV estimates indicate that an increase in 1 pp of global attendance beliefs decreases own turnout by just over 0.5 pp, indicating the presence of substitute forces in the decision to participate. Although our results are not directly comparable as we do not find significant effects for global strategic incentives, the results found in regards to relative group strategic incentives are either around the same magnitude (depending on the reference and sample group between 0.2 - 0.6 pp) or of more than double the effect (in the case of lower income attendance beliefs for the higher income group: 1.27 - 2.03pp). Interestingly, the sign of effects is different and this is probably due to the different nature of the studied protests, which will be further discussed in the final section of this paper.

Altogether, two stage estimates are indicative of complementary strategic forces in the decision to participate in regards to both other group and own group attendance beliefs (keeping in mind that the second effect is only present for higher income students). These results are very interesting as

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20.95, which is 42% of the dependent variable’s standard deviation:  $\sigma_{Participation} = 50.03$

<sup>15</sup>In table A7, it is found that participating in the 2020 march increases the probability to participate in the present by 18pp. Considering that the probability of participating in the present march if one did not participate in 2020’s march is 34.40%, then, participating in 2020’s march increases one’s present chance of participating by 52%.

they suggest on the one hand, a lack of influence from global attendance beliefs (and consequently the importance of considering heterogenous incentives), and on the other a stronger influence of other group attendance beliefs (in comparison to own group beliefs).

## 9 Robustness Exercises

In this section, several robustness exercises are done in order to evaluate if the observed effects in the previous section continue to exist in different subsamples or estimation modifications.

We begin by first analyzing the same previous IV estimation but for subsamples of subjects with more extreme priors (i.e. a greater difference between attendance priors and truths) to see if effects increase as information nudges are greater. In Table [A17](#) one can find results for subjects with a difference bigger or equal to 10 percentage points with the respective truth being analyzed, whether global or relative attendance. In Table [A18](#) one can find similar results but for subjects with a 5 percentage point difference. Estimations were also run for a 15 percentage point difference, but the resulting subsamples were too small (less than 70 observations for each income group and below/above truth subsample) and therefore did not permit correct inference.

In the subsample of subjects with differences greater than or equal to 5 pp of the truth, the same forces of complementarities are observed, at similar levels of significance and magnitudes. When limiting the sample to a difference of 10 pp or more, the only effect that survives the loss of observations is complementarities with other group attendance for the lower income group. Ideally, one would want to evaluate subjects with a 20% difference or more with the truth, but due to the amount of observations in this experiment and the subsamples we need to analyze to correctly identify effects (below and above truth + income groups) it is impossible to do so.

We then proceed to analyze subsamples of subjects without extreme priors (subjects within the two 5% extreme tails of priors where dropped) in Table [A19](#). Complementary forces between the higher and lower income group with higher income group attendance increase slightly in magnitude. Complementarities between higher income group attendance and other group information also increases slightly in magnitude from the previous 1.07/1.8 pp to 1.86/2.6 pp (intention to participate and effective participation respectively). Another effect that gains significance in this subsample is lower income complementarities with own group attendance beliefs: an increase in 1 pp of attendance of lower income group increases own group participation by 1.453 pp. Still, the F statistic of this estimation is 15.40, indicating a slight weakness of this instrument (which is probably why we did not observe this effect previously in other sub-samples).

Another robustness exercise we perform is to investigate if the underlying observed strategic effects increase when dropping subjects who report no intention of attending in wave 1 of the survey, and vice versa when dropping subjects who report a definite intention to attend. These results can be appreciated in Tables [A15](#) and [A16](#). As expected, when we don't consider subjects without initial intent of participating, we find the same effects but of a slightly bigger magnitude. On the other hand when we drop subjects who had a definite initial intent of participating, we lose almost all significance.

These last results suggest that the underlying effects we are observing are mostly driven by subjects who reported an initial intention of participating. This is in line with previously discussed literature, in particular [Castle et al. \(2018\)](#), which emphasizes difficulties in changing participation intentions and the importance of predispositions such as political interests, past experiences like discrimination, or simply general costs of participating. It is possible that treatments only had an effect in increasing the probability of participation for those who already had a chance of participating, and this could explain in part why results are mostly indicative of strategic complementarities. This is confirmed by Table [A20](#), where one can appreciate that very few of the subjects who reported no or little intentions of participating actually participated.

## 10 Discussion

In this paper, we shed light on possible strategic forces at play within the decision to protest. Strategic behaviour would imply that individuals take into consideration the decision of others when deciding to participate. In initial estimations of motivations to protest, we confirm this by finding that attendance priors of different groups appear to have explaining power in final decisions to participate in Santiago, Chile's 2023 Women's Day March. This in turn supports our hypothesis of heterogeneous strategic incentives: not only do individuals consider global attendance in the decision to participate, but they also take into consideration what groups in particular are planning on attending.

In order to further elucidate what interactions occur in this decision, we run several estimations utilizing the data collected within this experiment. First stage estimations indicate that the designed treatments are successful in nudging attendance posteriors and that individuals update correctly their beliefs: updating downwards if the received truth was above belief priors, and vice versa if they were below truth. Then, we proceed with second stage estimations, finding evidence of complementarities for the lower income group with global and other group attendance beliefs.

Reduced form and instrumental variables estimations find more evidence of other strategic forces at work. IV estimations indicate the presence of complementarities between both own group and other

group attendance beliefs and participation. For the higher income group, both forces are present: an increase in own group participation of 1 pp increases participation by 0.4 to 0.6 pp, and an increase in other group participation even further increases participation by 1.3 to 2.0 pp. For the lower income group, only other group attendance beliefs affect participation by 0.2 to 0.5 pp. When comparing these results to similar studies (Cantoni et al., 2019), we find on the one hand different strategic incentives, and on the other, stronger effects in terms of magnitude: the results found in regards to relative group strategic incentives are either around the same magnitude (depending on the reference and sample group between 0.2 - 0.6 pp) or of more than double the effect (in the case of lower income attendance beliefs for the higher income group). Interestingly, the sign of effects is different: while here we find evidence of complementarities, in Cantoni et al. (2019) they find evidence of substitutability. This is probably due to the different nature of the studied protests. As discussed before, Women’s Day marches are quite different from other studied protests by the literature: they occur every year, have an impressive and very diverse turnout (in 2020, for example, turnout represented almost 40% of Santiago’s female population), and is mostly symbolic and demonstrative in nature. These particular characteristics could be behind the strategic interactions found in this study: it could be that mass demonstrations tend to foster more complementary strategic interactions as coordination and social concerns dominate over other forces, such as free-riding or achieving protest goal’s.

Robustness exercises then reveal several important findings. First, when limiting the sample to subjects with more extreme priors (initial attendance beliefs were farther away from treatment truth) strategic effects are mostly unchanged. On the other hand, when limiting the sample to subjects without extreme priors we find the same effects but slightly bigger in magnitude. This reaffirms this investigations findings, as one of our principal worries was that due to a lack in differences between treatment information and overall sample priors (in global and lower income attendance beliefs), we might not be able to provoke an important exogenous change in beliefs and therefore miss out on identifying possible strategic underlying interactions. We also explore if results are robust to the dropping of subjects who report a definite intention to not attend or attend. In the first case, estimations report the same effects as before but in a bigger magnitude. In the second case, no significant effects are found, challenging our results as apparently they are mostly coming from individuals who had an original intention to attend.

There are some limitations and considerations that must be regarded when examining this study’s external validity. Firstly, the experimental sample was quite biased towards a more left inclined ideology (as can be seen in Figure A2). Therefore, the strategic incentives found at play might be particular to this subsample due to a political bias. Another important disbalance to consider, which has been

discussed throughout this paper, is the underestimation of attendance beliefs regarding the higher income group. This bias, or underestimation, could possibly be present in the population as a whole, or it might be only present in this experiment's sample. Finally, as discussed earlier, results are not robust to the dropping of subjects with a definite intention of participating. Gathering all of the above, this would indicate that the strategic effects found in this investigation could be particular to this experimental sample (left-ideologically inclined, female university students with a previous tendency to participate in the march) and cannot be extrapolated to a bigger population. However, it is important to note that this limitation is quite common to all of the protest literature, as the goals, mechanisms and context of protests change considerably case to case ([Cantoni et al., 2019](#)).

Altogether, our results indicate two main findings: (1) the existence of complementary (and not substitute) strategic forces in the decision to participate in 2023's Women's Day March in Santiago, and (2) the fundamental importance of considering heterogeneous incentives in strategic games such as these.

The first result is in a certain way puzzling, as according to recent literature, Women's Day Marches would be more inclined to encourage substitute strategic incentives due to this protest's more symbolic nature. [Shadmehr \(2018\)](#) postulates that in protests with more material goals, such as toppling regimes for example, strategic complementary forces dominate, while in more modest/symbolic protests, substitute forces and free-riding concerns would be expected to be greater. In contrast to these predictions, in this experiment we see ample evidence of complementary interactions between attendance belief's and the own decision to participate. Does this challenge the previously mentioned literature? Could it be that in our case, despite the goals being modest, social image concerns and peer effects enter into play, dominating any possibility of free riding? We believe this is up for discussion and in need of further investigation. As mentioned earlier, a possible answer to this puzzle could be that both protests' goals and size should be considered when determining the strategic forces that will dominate.

Secondly, the results of this experiment emphasize the importance of considering heterogeneous interactions between different groups of people in the decision to participate. Traditionally, protest literature has focused on the relationship between the belief of attendance of an homogeneous mass of people and how that affects the decision to participate. In this study, we do not find effects of global attendance beliefs. Instead, we find significant effects for relative attendance beliefs: both for own and other group attendance. Furthermore, we find that other group participation has a more powerful effect (more than twice as much) on own participation for the higher income group (even when this group's attendance priors were not that deviated from experiment "truths"). These results are sugges-



tive of important strategic concerns in the participating decision that have been in a sense disregarded: groups who are thought to participate less and/or groups who have differences or animosities with the own group could have a greater influence on a subject's strategic decision.

In conclusion, we believe that this investigation paves the way for future work regarding heterogeneous interactions in the strategic decision to participate. This paper's findings confirm the existence of complementary forces at work, and most importantly, of different magnitudes depending on the reference group being considered. This is why a further effort must be made to elucidate the mechanisms behind strategic interactions in protest games, particularly taking into consideration and giving room to heterogeneous incentives in different protest contexts.

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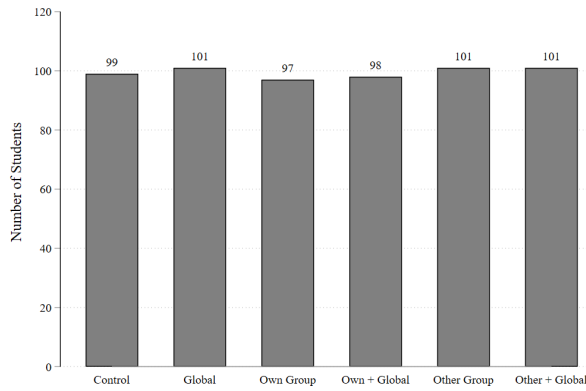
# 11 Appendix

Table A1: **Historic Participation in Women’s Day March in Santiago, Chile**

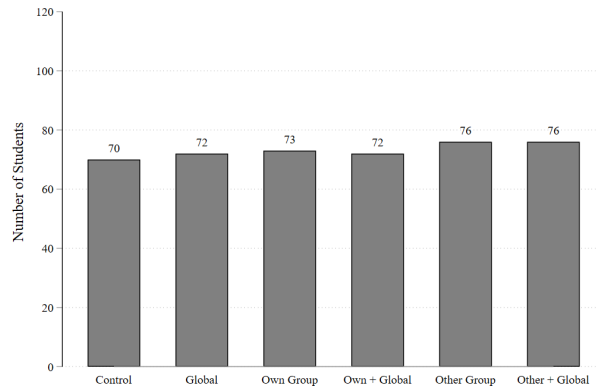
Year	Estimated Number of Participants	Hurt or Detained
2019	180.000	36
2020	1.000.000	35
2021	300.000	15
2022	300.000	-
2023	-	-

These statistics were created by averaging the number of participants detailed in different articles, newspapers, media, etc. found online.

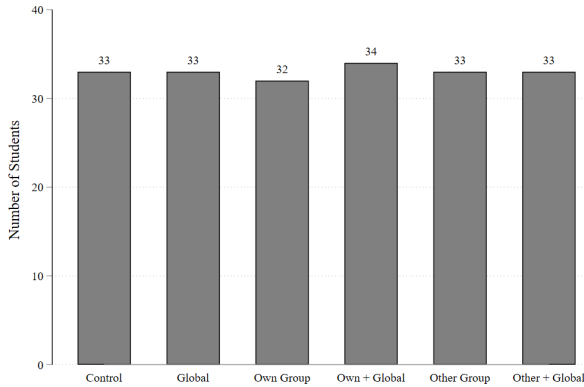
Figure A1: Treatment Distribution



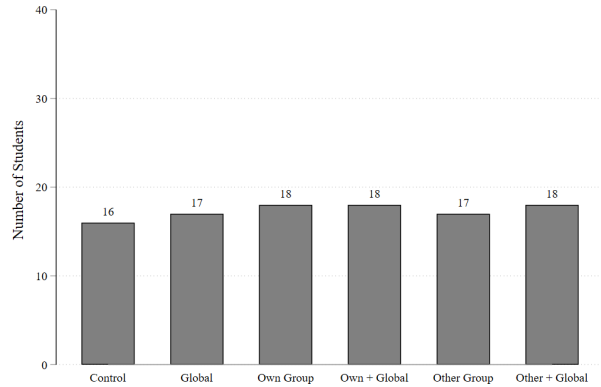
(a) Univ. 1 - Lower Income



(b) Univ. 1 - Higher Income



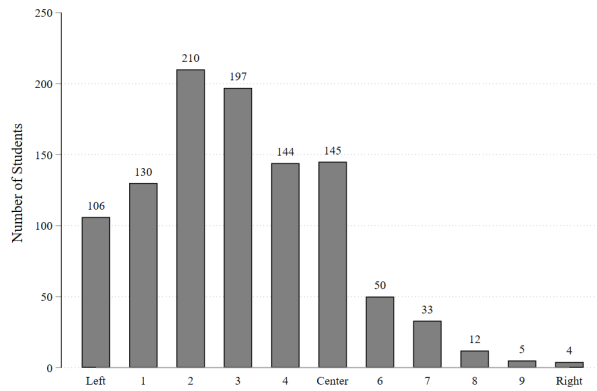
(c) Univ. 2 - Lower Income



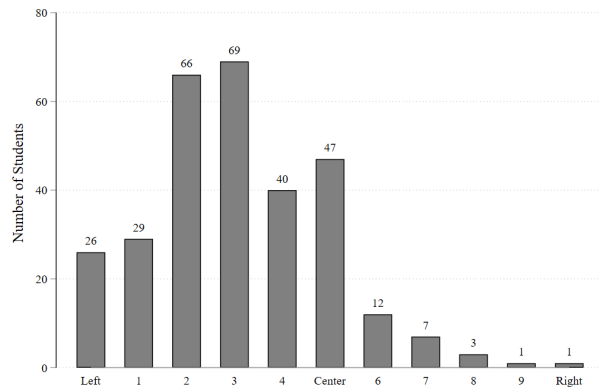
(d) Univ. 2 - Higher Income

Bar graphs portray the distribution of subjects in both universities along treatments and income group. The survey server was instructed to assign treatments in a balanced manner, as subjects entered the questionnaire.

Figure A2: Possible Dimension of Heterogeneity: Political ideology

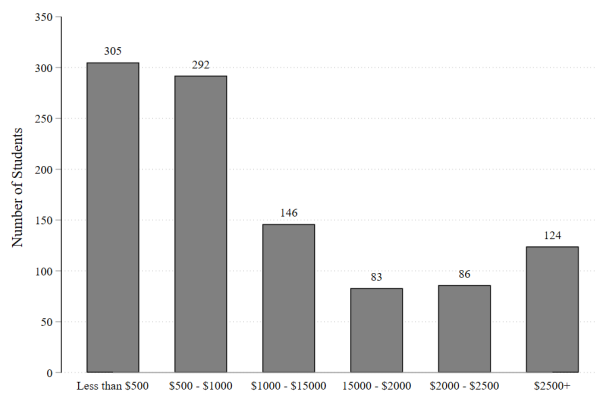


(a) University 1

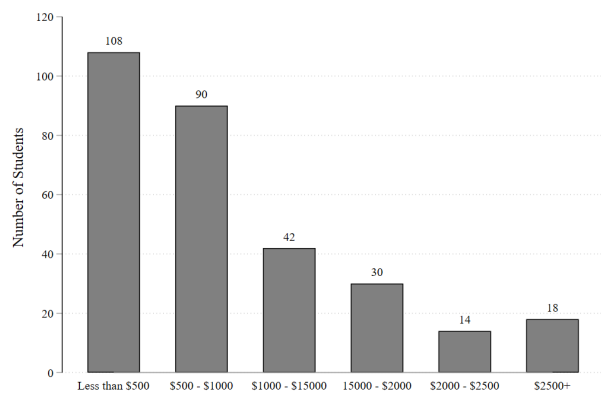


(b) University 2

Figure A3: Possible Dimension of Heterogeneity: Monthly Household Income



(a) University 1



(b) University 2

Table A2: **Wave 1 Filters**

	Participants
Total	2944
Under age (-18)	129
Other University	33
Don't accept informed consent	7
Male or Prefer not to answer	588
No name	121
Duplicates	13
Final Participants	2053

Table A3: **Analysis of Attrition between Waves 1 and 2**

	Response Wave 2
Intention to Participate	-0.0135 [0.0124]
Appreciation of Feminist Movement	0.0007 [0.0148]
Would you characterize Women's Day Protests as violent?	-0.0045 [0.0155]
Political ideology (1=Left, 10=Right)	-0.0090 [0.0066]
Interest in politics	0.0045 [0.0120]
Monthly Income Range	0.0006 [0.0064]
Have you ever felt discriminated?	-0.0405 [0.0313]
Participation in 2020 March	0.0382 [0.0232]
Belief of police repression in this upcoming protest	-0.0004 [0.0004]
Age	0.0041 [0.0034]
Year of Admission to Uni.	0.0002* [0.0001]
Constant	0.4270* [0.2467]
Observations	1510

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . A linear regression was estimated using a binary variable indicating if subjects responded the second wave of the survey as a dependent variable, in order to determine if there were any underlying determinants of attrition. Robust standard errors are reported in parenthesis.

Table A4: **Characterization of Experimental Sample**

	Mean	St. Dev.	Min.	Max.	Obs.
<b>Panel A: Outcome Variables</b>					
Intention to participate - Wave 1	2.96	0.97	1.00	4.00	1310
Intention to participate - Wave 2	2.92	1.05	1.00	4.00	1314
Recoded Intention to participate - Wave 2	0.65	0.48	0.00	1.00	1338
Probability of Participation - Wave 1	60.08	31.88	0.00	100.00	1337
Probability of Participation - Wave 2	58.36	34.90	0.00	100.00	1336
Final participation	0.44	0.50	0.00	1.00	1323
Global Attendance Prior	69.05	14.90	15.00	100.00	1338
Global attendance Posterior	70.29	12.14	20.00	100.00	1338
Higher Income Attendance Prior	49.34	19.20	0.00	100.00	1336
Higher Income attendance Posterior	54.02	18.25	0.00	100.00	1338
Lower Income Attendance Prior	64.88	16.77	3.00	100.00	1338
Lower Income attendance Posterior	66.87	13.95	15.00	100.00	1338
<b>Panel B: Other Characteristics</b>					
Ideological Position(1=Left, 10=Right)	3.05	1.95	0.00	10.00	1337
Level of interest in Politics	2.35	1.00	0.00	4.00	1329
Frequency of conversation about Feminist topics	3.45	0.77	1.00	5.00	1337
Appreciation of Feminist Movement	4.46	0.83	1.00	5.00	1338
Mobilization leads to more change	4.38	0.78	1.00	5.00	1324
Violence is justified in some cases	2.70	1.20	1.00	5.00	1301
Women´s mobilization has led to positive changes nationally	4.38	0.73	1.00	5.00	1328
Level of violence in Women´s Day Protests (1=Peaceful, 5=Violent)	1.80	0.76	1.00	5.00	1337
Probability of repression in Women´s Day Protests	50.23	25.17	0.00	100.00	1337
Social Class	2.78	1.19	1.00	5.00	1305
Monthly Household Income Range	2.65	1.65	1.00	6.00	1338
Age	21.10	3.21	18.00	45.00	1336
Have felt discriminated	0.84	0.37	0.00	1.00	1204
Mother worked for salary when I was young	0.82	0.38	0.00	1.00	1276
Average participation in marches 2019-2022	0.39	0.33	0.00	1.00	1329
Non Traditional Gender Role Attitude	4.11	0.50	2.00	5.00	1338
Proactive Gender Role Attitude	4.26	0.56	1.50	5.00	1338
Believes women are discriminated in life	4.54	0.58	1.00	5.00	1338

The studied sample considers both universities and both income groups. The variable *Recoded Intention to Participate* is the result of transforming *Intention to Participate - Wave 2* into a dummy. This is done by setting *Most likely to not attend* and *Will not attend* equal to 0, and *Most likely to attend* and *Will attend* equal to 1.



Table A5: **Characterization of Treatment Groups**

	Treatment						F-Test (7)
	Control (1)	Global (2)	Own (3)	Own + Global (4)	Other (5)	Other + Global (6)	
Ideological Position(1=Left, 10=Right)	3.28	3.05	2.99	3.00	3.04	2.96	0.75
Level of interest in Politics	2.33	2.31	2.37	2.39	2.34	2.38	0.21
Frequency of conversation about Feminist topics	3.36	3.47	3.45	3.50	3.45	3.47	0.77
Appreciation of Feminist Movement	4.43	4.49	4.44	4.38	4.56*	4.46	1.25
Movilization leads to more change	4.34	4.43	4.32	4.27	4.54***	4.38	3.37***
Violence is justified in some cases	2.69	2.77	2.59	2.71	2.74	2.70	0.58
Women´s movilization has led to positive changes nationally	4.36	4.43	4.39	4.27	4.46	4.38	1.8
Level of violence in Women´s Day Protests (1=Peaceful, 5=Violent)	1.75	1.79	1.80	1.84	1.80	1.82	0.36
Probability of repression in Women´s Social Class	50.27	52.80	46.34	51.46	50.33	50.13	1.62
Monthly Household Income Range	2.73	2.74	2.88	2.80	2.77	2.79	0.43
Age	2.61	2.60	2.74	2.62	2.67	2.67	0.22
Have felt discriminated	21.49	20.94*	21.15	20.96*	21.10	20.97	0.93
Mother worked for salary when I was young	0.83	0.83	0.85	0.83	0.82	0.87	0.61
Average participation in marches 2019-2022	0.81	0.78	0.89**	0.85	0.82	0.79	2.43**
Non Traditional Gender Role Attitude	0.39	0.40	0.41	0.36	0.39	0.41	0.61
Proactive Gender Role Attitude	4.10	4.12	4.08	4.08	4.14	4.13	0.48
Believes women are discriminated in life	4.21	4.28	4.24	4.27	4.26	4.28	0.58
	4.54	4.54	4.54	4.56	4.56	4.48	0.58

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01. Table shows the mean of several studied characteristics by treatment group. Stars in columns (1)-(7) represent p-values of t-tests between treatments and the control group. In addition, column (7) reports the F-test of a one-way analysis of variance (ANOVA), where larger values indicate greater differences between group means. The analyzed sample considers both universities.

Table A6: Characterization of Treatment Groups: University 2

	Treatment Group												F-Test (13)
	Control		Global		Own		Own + Global		Other		Other + Global		
	Mean (1)	Sample (2)	Mean (3)	Sample (4)	Mean (5)	Sample (6)	Mean (7)	Sample (8)	Mean (9)	Sample (10)	Mean (11)	Sample (12)	
<b>Panel A: Lower Income Group</b>													
Ideological Position(1=Left, 10=Right)	3.78	32	2.67**	33	2.91*	32	2.88*	34	2.76**	33	2.94*	33	1.55
Level of interest in Politics	1.91	33	2.55***	33	2.41**	32	2.38**	34	2.79***	33	2.09	32	3.32**
Frequency of conversation about Feminist topics	3.24	33	3.58*	33	3.59*	32	3.68**	34	3.61**	33	3.55*	33	1.28
Appreciation of Feminist Movement	4.48	33	4.64	33	4.50	32	4.74	34	4.85**	33	4.55	33	1.51
Movilization leads to more change	4.42	33	4.61	33	4.42	31	4.41	34	4.82***	33	4.39	33	2.23*
Violence is justified in some cases	2.56	32	2.91	33	2.91	32	2.79	34	2.84	32	2.72	32	0.36
Women ´s movilization has led to positive changes nationally	4.27	33	4.55	33	4.41	32	4.44	34	4.52	33	4.27	33	0.92
Level of violence in Women ´s Day Protests (1=Peaceful, 5=Violent)	1.70	33	1.91	33	1.56	32	1.65	34	1.58	33	1.79	33	1.15
Probability of repression in Women ´s Day Protests	53.91	33	64.91	33	53.06	32	56.24	34	51.67	33	58.76	33	1.11
Social Class	2.18	33	2.00	32	2.10	31	2.12	34	2.03	33	1.91	33	0.82
Monthly Household Income Range	1.52	33	1.42	33	1.50	32	1.47	34	1.39	33	1.42	33	0.30
Age	22.15	33	21.85	33	22.09	32	20.91***	34	21.27*	33	22.33	33	1.64
Have felt discriminated	0.90	31	0.97	31	0.79	29	0.90	30	0.90	31	0.83	30	1.10
Mother worked for salary when I was young	0.75	32	0.77	31	0.83	29	0.76	33	0.94**	32	0.81	31	1
Average participation in marches 2019-2022	0.36	33	0.41	32	0.52*	32	0.46	33	0.55**	33	0.42	33	1.57
Non Traditional Gender Role Attitude	4.11	33	3.78**	33	3.93	32	4.17	34	4.09	33	3.95	33	2.64**
Proactive Gender Role Attitude	4.18	33	4.39*	33	4.37	32	4.26	34	4.32	33	4.22	33	0.77
Believes women are discriminated in life	4.49	33	4.75**	33	4.70*	32	4.65	34	4.69*	33	4.39	33	2.36**
<b>Panel A: Higher Income Group</b>													
Ideological Position(1=Left, 10=Right)	2.94	16	3.35	17	3.44	18	3.06	18	3.41	17	3.33	18	0.21
Level of interest in Politics	2.69	16	2.53	17	2.44	18	2.00*	18	1.94**	17	2.39	18	1.26
Frequency of conversation about Feminist topics	3.63	16	3.29	17	3.39	18	3.33	18	3.41	17	3.53	17	0.48
Appreciation of Feminist Movement	4.69	16	4.59	17	4.50	18	4.11*	18	4.71	17	4.28	18	1.49
Movilization leads to more change	4.44	16	4.35	17	4.28	18	3.89**	18	4.40	15	4.41	17	1.46
Violence is justified in some cases	2.94	16	2.82	17	2.28**	18	2.59	17	2.88	17	2.76	17	0.74
Women ´s movilization has led to positive changes nationally	4.44	16	4.35	17	4.39	18	4.11	18	4.29	17	4.39	18	0.47
Level of violence in Women ´s Day Protests (1=Peaceful, 5=Violent)	1.63	16	1.65	17	1.56	18	1.83	18	1.65	17	1.72	18	0.28
Probability of repression in Women ´s Day Protests	49.94	16	54.41	17	42.11	18	42.44	18	49.41	17	43.44	18	0.68
Social Class	3.73	15	3.76	17	3.72	18	3.82	17	4.06	17	3.89	18	0.56
Monthly Household Income Range	4.13	16	4.00	17	3.94	18	3.94	18	4.29	17	4.17	18	0.27
Age	22.25	16	21.71	17	22.44	18	21.94	17	21.76	17	22.89	18	0.70
Have felt discriminated	1.00	15	0.81*	16	0.82*	17	0.56***	16	0.75**	16	0.76**	17	1.89
Mother worked for salary when I was young	0.88	16	0.71	17	0.83	18	0.88	17	0.94	17	0.88	17	0.85
Average participation in marches 2019-2022	0.49	16	0.47	17	0.49	18	0.31	17	0.41	17	0.47	18	0.87
Non Traditional Gender Role Attitude	3.98	16	4.14	17	4.12	18	4.20	18	3.98	17	4.16	18	0.74
Proactive Gender Role Attitude	4.33	16	4.25	17	4.40	18	4.23	18	3.95**	17	4.09	18	1.67
Believes women are discriminated in life	4.72	16	4.59	17	4.64	18	4.57	18	4.66	17	4.44	18	0.52

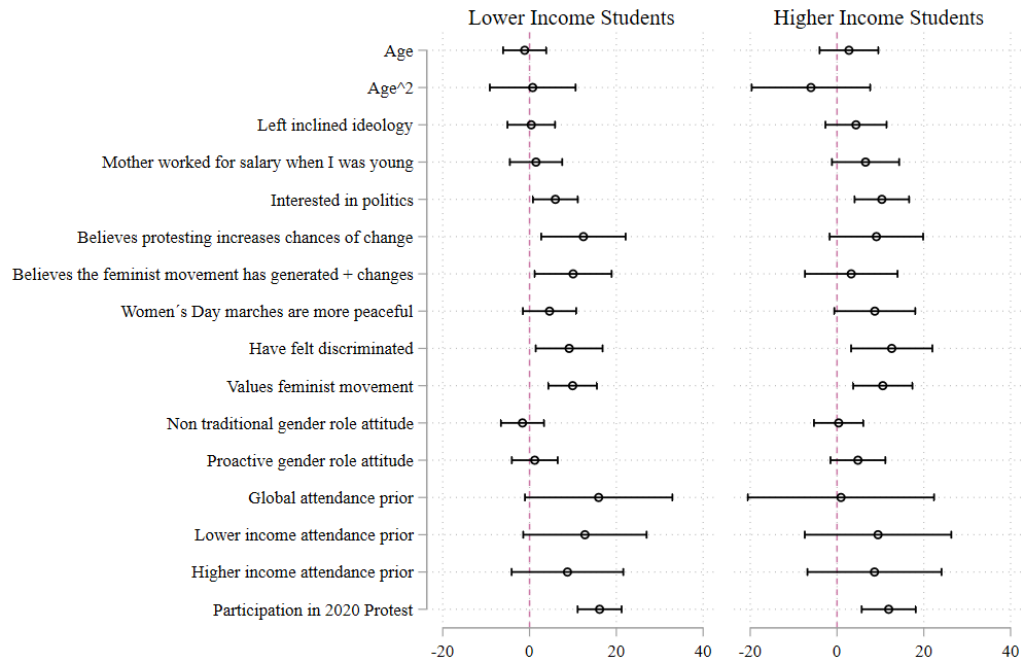
\* p<0.10; \*\* p<0.05; \*\*\* p<0.01. Table shows the mean of several studied characteristics by treatment group. Stars in columns (1)-(12) represent p-values of t-tests between treatments and the control group. In addition, column (13) reports the F-test of a one-way analysis of variance (ANOVA), where larger values indicate greater differences between group means. The analyzed sample considers only University 2.

Table A7: Why protest?

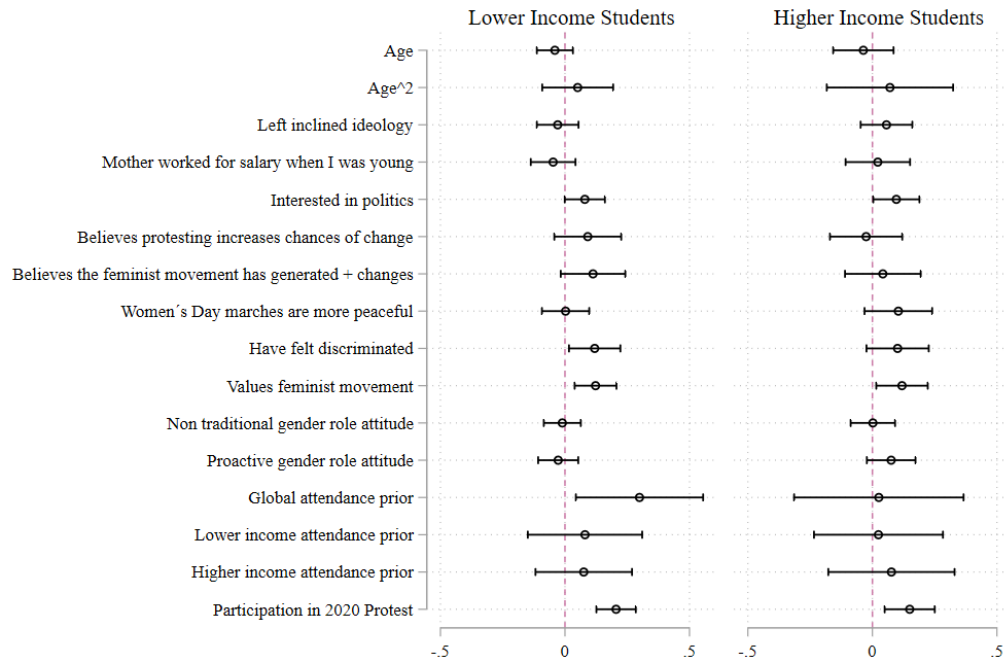
	Probability of Attending (Wave 2) (1)	Effective Participation (Wave 3) (2)
Age	0.229 (2.108)	-0.029 (0.029)
Age <sup>2</sup>	-1.468 (4.280)	0.039 (0.058)
Left inclined ideology	1.995 (2.186)	0.003 (0.033)
Higher income student	3.002 (1.895)	0.063** (0.029)
Mother worked for salary when I was young	2.930 (2.407)	-0.029 (0.037)
Interested in politics	7.706*** (2.013)	0.086*** (0.031)
Believes protesting increases chances of change	10.655*** (3.663)	0.034 (0.051)
Believes the feminist movement has generated + changes	7.557** (3.479)	0.086* (0.049)
Women's Day marches are more peaceful	6.078** (2.571)	0.037 (0.039)
Have felt discriminated	10.162*** (3.014)	0.107*** (0.040)
Values feminist movement	10.430*** (2.189)	0.125*** (0.033)
Non traditional gender role attitude	-0.560 (1.893)	-0.002 (0.029)
Proactive gender role attitude	2.588 (2.032)	0.016 (0.031)
Global attendance prior	9.597 (6.679)	0.179* (0.103)
Lower income attendance prior	10.635* (5.448)	0.047 (0.086)
Higher income attendance prior	8.870* (4.960)	0.071 (0.077)
Participation in 2020 Protest	14.418*** (2.007)	0.180*** (0.032)
Mean of Dep. Var.	59.57	0.45
St. Dev. of Dep. Var.	34.94	0.50
Observations	1,125	1,120

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01. A linear regression is estimated using protest attendance (measured as probability of attending or effective participation) as a dependent variable. Both universities are considered within the studied sample. Robust standard errors are reported in parenthesis.

Figure A4: Why protest? Analyzed By Income Group



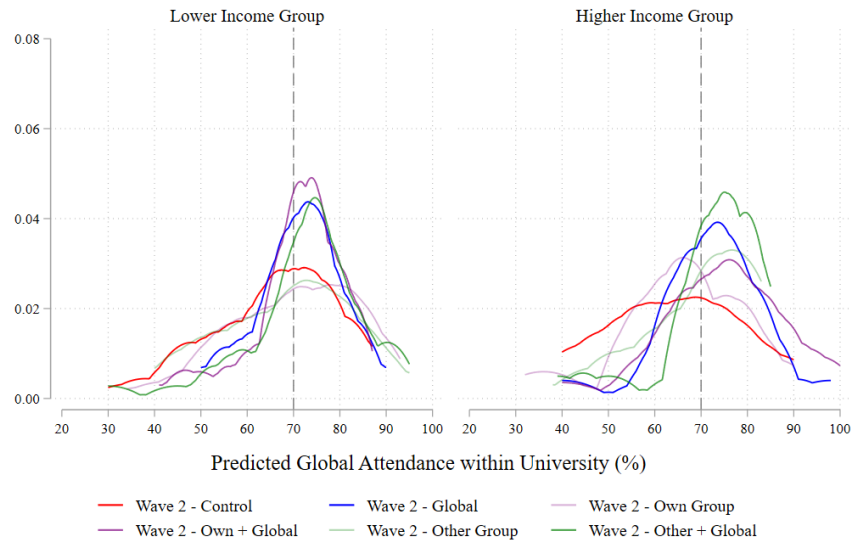
(a) Probability of Participating



(b) Effective Participation

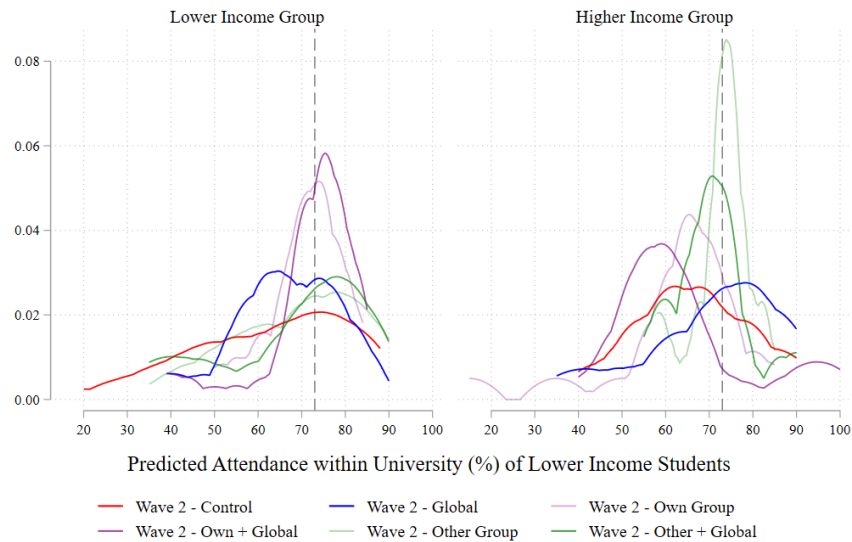
Plots show point estimates and 95% confidence intervals of linear regressions using protest attendance (measured as probability of attending or effective participation) as a dependent variable. Two set of estimates are shown for each dependent variable: estimates for lower and higher income group students. Both universities are considered within the studied sample.

Figure A5: Global Attendance Posteriors



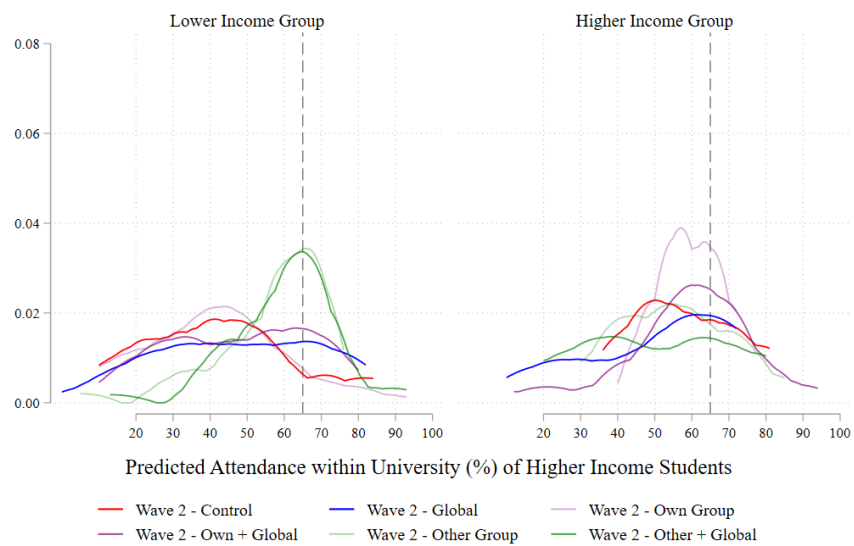
Kernel density estimates are displayed for global attendance beliefs for both income groups (shown in different panels) and all treatments (different colored lines). Sample considers only University 2 and beliefs are posteriors, i.e. post receiving the information treatment. Vertical dashed line is the treatment truth delivered.

Figure A6: Lower Inc. Group Attendance Posteriors



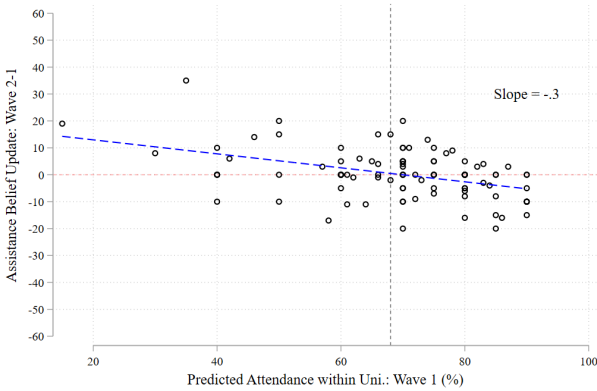
Kernel density estimates are displayed for lower income attendance beliefs for both income groups (shown in different panels) and all treatments (different colored lines). Sample considers only University 2 and beliefs are posteriors, i.e. post receiving the information treatment. Vertical dashed line is the treatment truth delivered.

Figure A7: Higher Inc. Group Attendance Posteriors

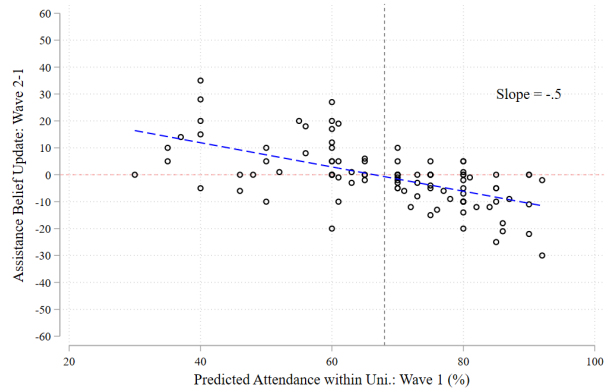


Kernel density estimates are displayed for higher income attendance beliefs for both income groups (shown in different panels) and all treatments (different colored lines). Sample considers only University 2 and beliefs are posteriors, i.e. post receiving the information treatment. Vertical dashed line is the treatment truth delivered.

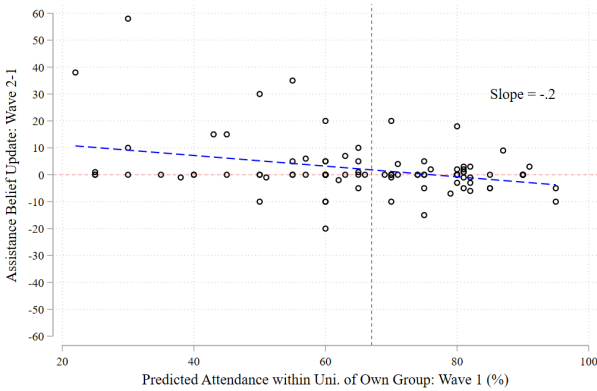
Figure A8: Changes in Posteriors According to Treatment: Lower Income Group Students - University I



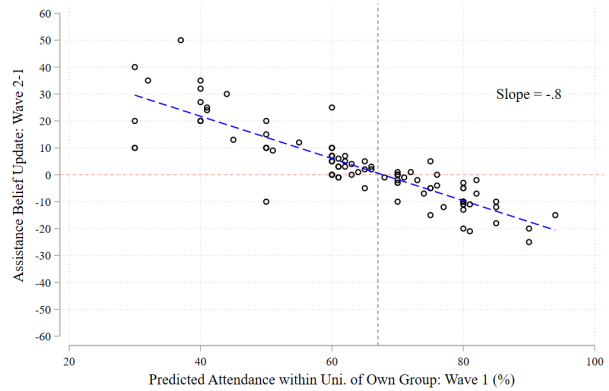
(a) Global attendance Beliefs: Treatment 1 (Control)



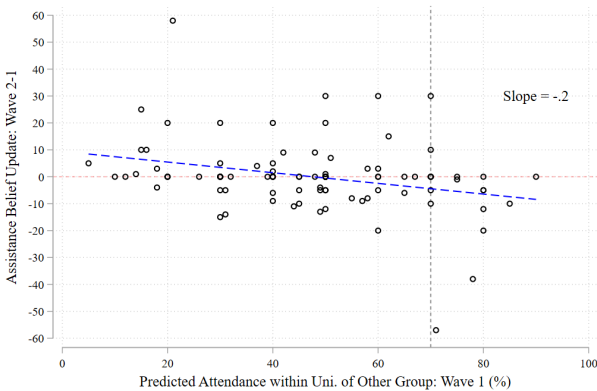
(b) Global attendance Beliefs: Treatment 2 (Global)



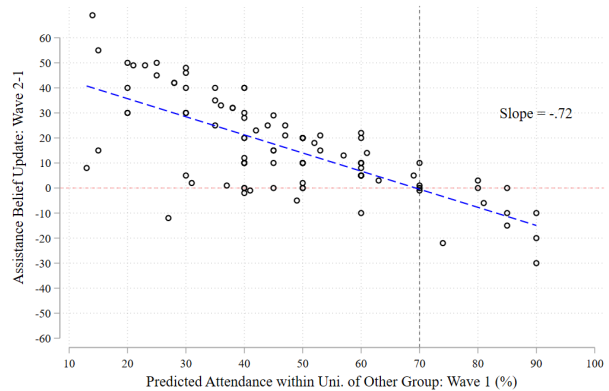
(c) Lower Inc. Group Beliefs: Treatment 1 (Control)



(d) Lower Inc. Group Beliefs: Treatment 3 (Own)



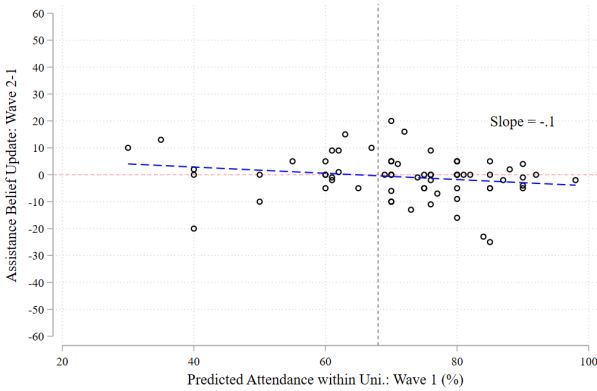
(e) Higher Inc. Group Beliefs: Treatment 1 (Control)



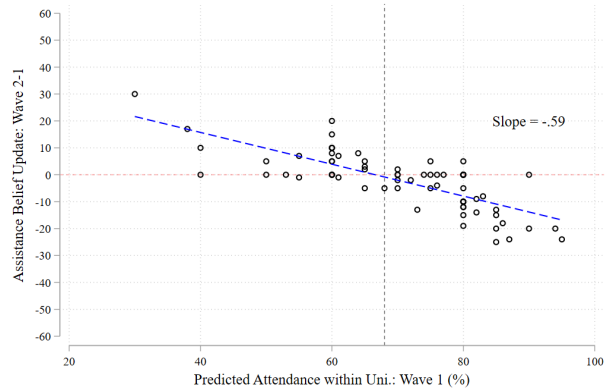
(f) Higher Inc. Group Beliefs: Treatment 5 (Other)

Plots show binned scatter plots of changes in beliefs (posteriors minus priors) against original prior beliefs. The sample studied only considers University 1 lower income students.

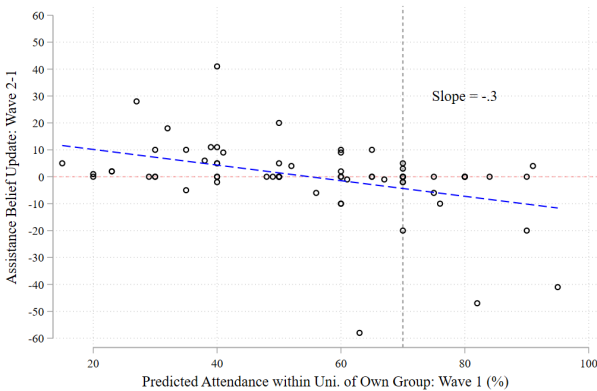
Figure A9: Changes in Posteriors According to Treatment: Higher Income Group Students - University I



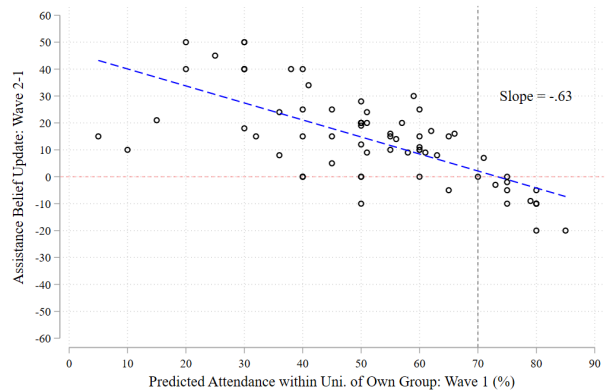
(a) Global attendance Beliefs: Treatment 1 (Control)



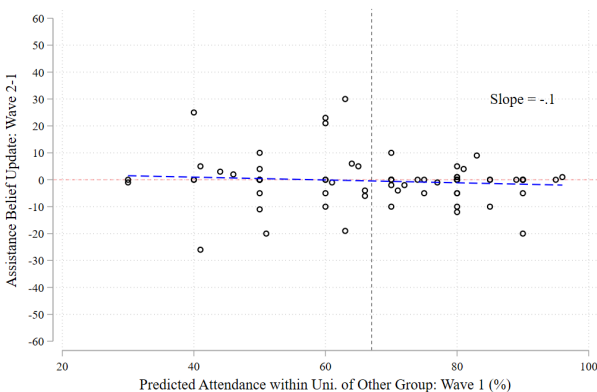
(b) Global attendance Beliefs: Treatment 2 (Global)



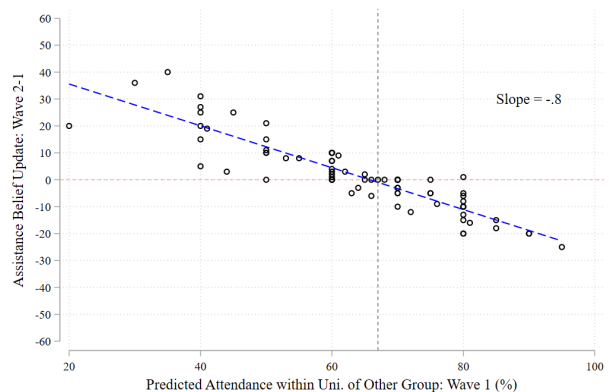
(c) Higher Inc. Group Beliefs: Treatment 1 (Control)



(d) Higher Inc. Group Beliefs: Treatment 3 (Own)



(e) Lower Inc. Group Beliefs: Treatment 1 (Control)

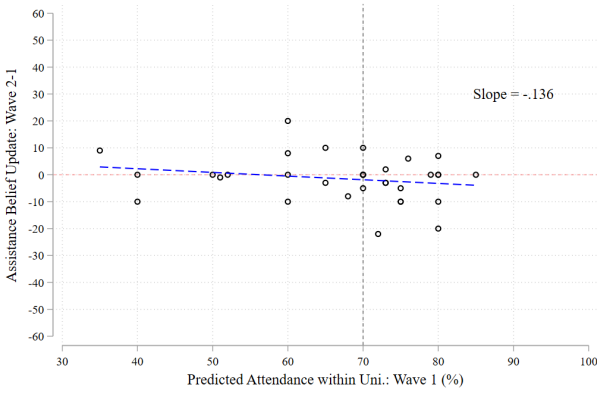


(f) Lower Inc. Group Beliefs: Treatment 5 (Other)

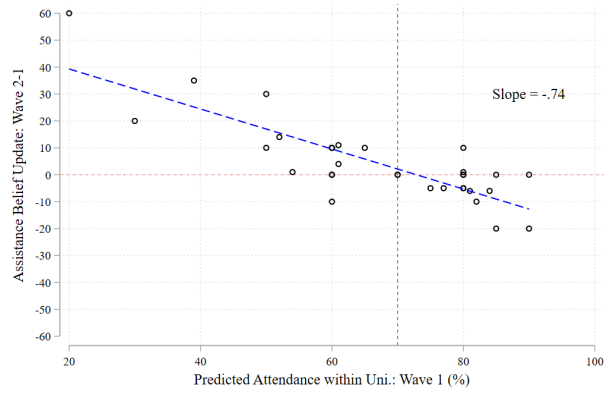
Plots show binned scatter plots of changes in beliefs (posteriors minus priors) against original prior beliefs. The sample studied only considers University 1 higher income students.



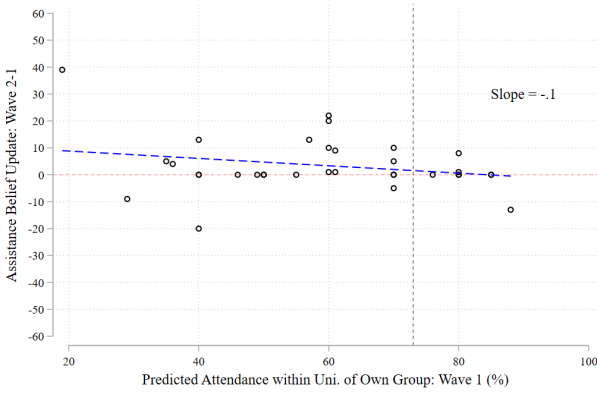
Figure A10: Changes in Posteriors According to Treatment: Lower Income Group Students - University II



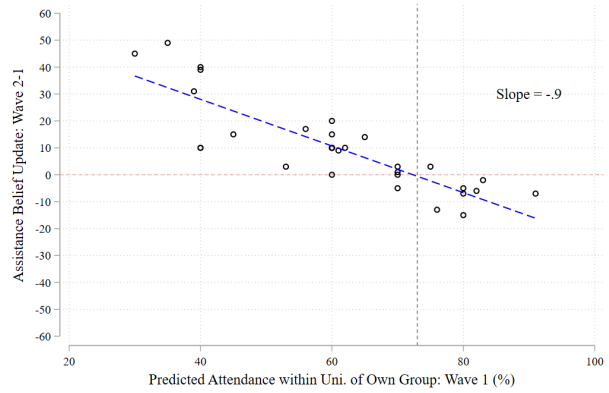
(a) Global attendance Beliefs: Treatment 1 (Control)



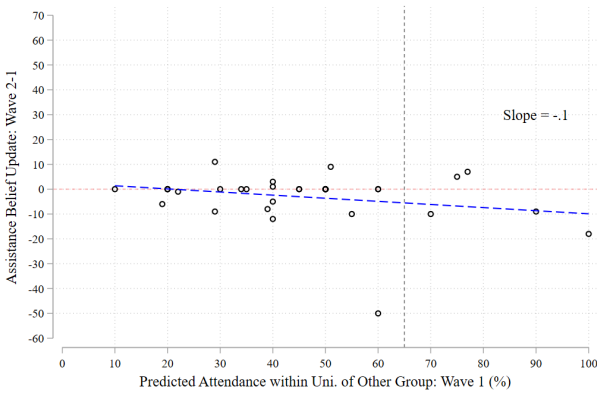
(b) Global attendance Beliefs: Treatment 2 (Global)



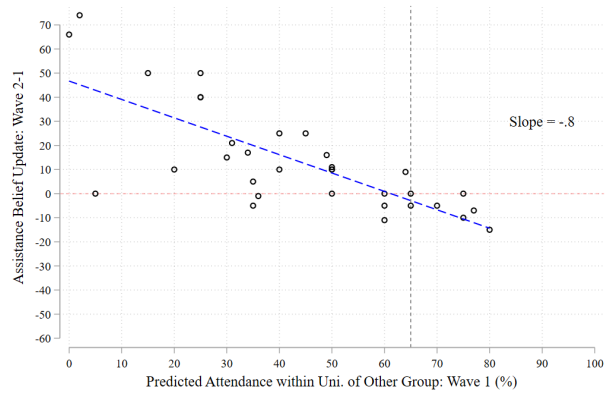
(c) Lower Inc. Group Beliefs: Treatment 1 (Control)



(d) Lower Inc. Group Beliefs: Treatment 3 (Own)



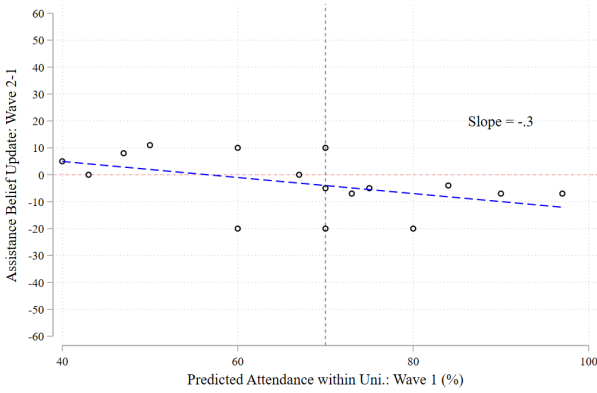
(e) Higher Inc. Group Beliefs: Treatment 1 (Control)



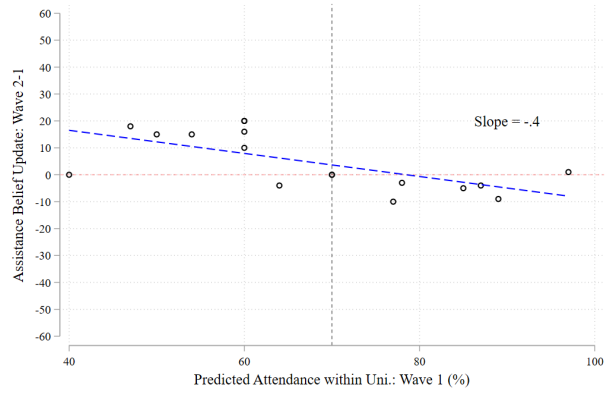
(f) Higher Inc. Group Beliefs: Treatment 5 (Other)

Plots show binned scatter plots of changes in beliefs (posteriors minus priors) against original prior beliefs. The sample studied only considers University 2 lower income students.

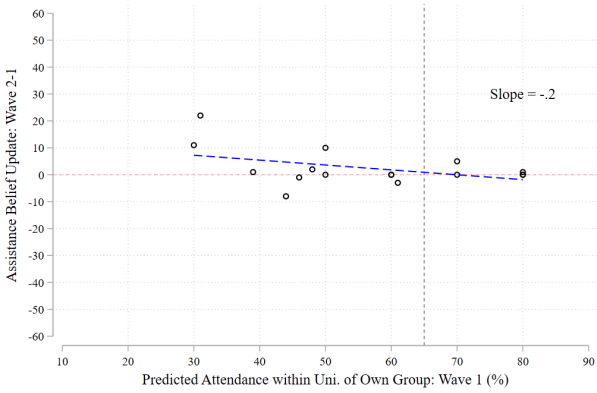
Figure A11: Changes in Posteriors According to Treatment: Higher Income Group Students - University II



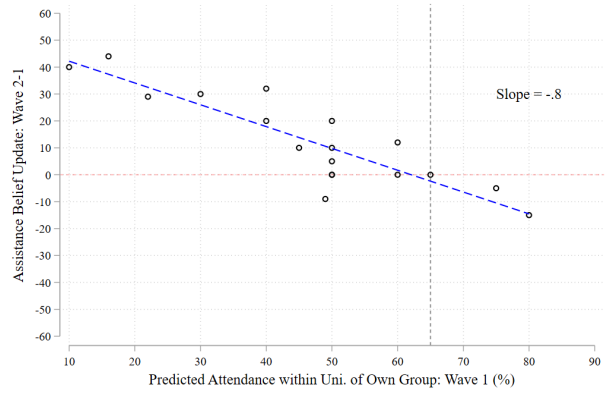
(a) Global attendance Beliefs: Treatment 1 (Control)



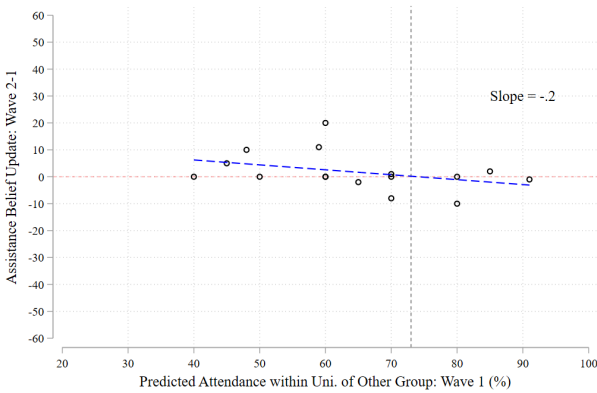
(b) Global attendance Beliefs: Treatment 2 (Global)



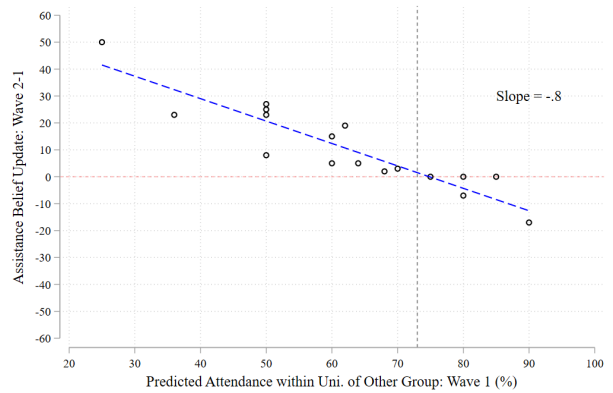
(c) Higher Inc. Group Beliefs: Treatment 1 (Control)



(d) Higher Inc. Group Beliefs: Treatment 3 (Own)



(e) Lower Inc. Group Beliefs: Treatment 1 (Control)



(f) Lower Inc. Group Beliefs: Treatment 5 (Other)

Plots show binned scatter plots of changes in beliefs (posteriors minus priors) against original prior beliefs. The sample studied only considers University 2 higher income students.

Table A8: **First Stage: Treatment Effects on Posterior Beliefs (Total Effects)**

	Attendance Posteriors					
	Global		Lower Income		Higher Income	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)
<b>Panel A: Lower Income Students</b>						
Global Treat.	2.781** (1.334)	-1.844** (0.757)				
Own Treat.			8.898*** (1.458)	-5.789*** (1.298)		
Other Treat.					19.773*** (1.402)	-2.503 (3.165)
Observations	317	467	419	365	651	133
<b>Panel B: Higher Income Students</b>						
Global Treat.	2.465* (1.345)	-2.716*** (0.862)				
Other Treat.			8.901*** (1.955)	-6.486*** (1.388)		
Own Treat.					13.543*** (1.578)	-0.695 (2.940)
Observations	215	326	276	265	412	129

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A9: **First Stage: Treatment Effects on Posterior Beliefs**

	Global attendance Posterior		Lower Income attendance Posterior		Higher Income attendance Posterior	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)
<b>Panel A: Lower Income Students</b>						
Global Treat.=1	5.403*** (1.928)	-2.700** (1.164)	1.795 (1.996)	-5.895*** (1.669)	1.166 (1.680)	-1.370 (3.809)
Own Treat.=1	5.570*** (1.877)	0.410 (1.164)	9.488*** (1.809)	-8.501*** (1.198)	0.676 (1.394)	-5.166 (4.705)
Global Treat.=1 × Own Treat.=1	-5.768** (2.766)	0.050 (1.696)	-2.665 (2.634)	4.158* (2.147)	0.632 (2.248)	-0.711 (6.291)
Other Treat.=1	7.370*** (1.896)	2.503** (1.196)	4.338** (1.979)	-1.321 (1.467)	19.035*** (1.807)	-1.729 (3.529)
Global Treat.=1 × Other Treat.=1	-2.802 (2.993)	1.765 (1.628)	-1.984 (3.077)	0.480 (2.604)	1.950 (2.625)	-0.594 (4.543)
Mean of Dep. Var.	61.74	76.16	61.22	73.90	48.71	68.80
St. Dev. of Dep. Var.	12.77	8.09	14.03	10.57	18.11	13.66
Observations	320	473	423	370	660	133
<b>Panel B: Higher Income Students</b>						
Global Treat.=1	6.303*** (2.074)	-3.766** (1.467)	3.642 (3.059)	-6.673*** (2.051)	0.549 (2.406)	-4.529 (3.004)
Own Treat.=1	8.515*** (2.282)	3.614** (1.402)	6.821** (2.645)	-0.073 (1.756)	14.858*** (2.105)	-2.059 (2.721)
Global Treat.=1 × Own Treat.=1	-7.483** (2.989)	1.142 (1.877)	-5.268 (4.513)	0.622 (3.003)	-1.576 (3.226)	-0.043 (4.412)
Other Treat.=1	5.448** (2.187)	-1.775 (1.483)	10.102*** (2.188)	-8.861*** (1.357)	-0.080 (1.970)	-4.143 (3.150)
Global Treat.=1 × Other Treat.=1	-5.441* (2.932)	2.770 (1.944)	-2.986 (3.628)	5.215** (2.395)	-1.007 (3.123)	4.060 (4.784)
Mean of Dep. Var.	62.35	75.39	60.24	72.95	53.17	68.57
St. Dev. of Dep. Var.	11.80	8.22	13.98	10.31	16.30	12.14
Observations	216	327	277	266	412	131

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions only control for attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A10: **First Stage with Controls: Treatment Effects on Posterior Beliefs**

	Global attendance Posterior		Lower Income attendance Posterior		Higher Income attendance Posterior	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)
<b>Panel A: Lower Income Students</b>						
Global Treat.=1	5.175** (2.296)	-3.020** (1.239)	0.831 (2.072)	-5.137*** (1.975)	0.170 (1.824)	-3.920 (3.895)
Own Treat.=1	5.611*** (2.107)	-0.152 (1.226)	9.240*** (1.956)	-7.695*** (1.532)	0.042 (1.499)	-7.396 (5.225)
Global Treat.=1 × Own Treat.=1	-5.067 (3.095)	1.012 (1.822)	-0.756 (2.814)	3.411 (2.553)	1.524 (2.377)	0.658 (6.621)
Other Treat.=1	7.670*** (2.150)	1.318 (1.285)	3.754* (2.136)	-1.297 (1.844)	18.721*** (1.919)	-4.711 (4.033)
Global Treat.=1 × Other Treat.=1	-2.037 (3.390)	2.470 (1.774)	-0.331 (3.319)	-0.201 (3.062)	2.146 (2.742)	3.967 (5.763)
Mean of Dep. Var.	61.68	76.16	61.10	73.88	48.62	68.80
St. Dev. of Dep. Var.	12.82	8.11	14.00	10.62	18.18	13.66
Observations	317	467	419	365	651	133
<b>Panel B: Higher Income Students</b>						
Global Treat.=1	7.101*** (2.057)	-3.855** (1.579)	4.762 (3.405)	-6.563*** (2.352)	-1.143 (2.431)	-7.833** (3.396)
Own Treat.=1	8.484*** (2.302)	3.644** (1.579)	8.343*** (2.971)	-0.635 (1.995)	13.527*** (2.028)	-2.186 (3.590)
Global Treat.=1 × Own Treat.=1	-6.840** (3.096)	0.326 (1.999)	-7.823 (4.823)	1.135 (3.204)	0.032 (3.334)	2.915 (5.704)
Other Treat.=1	5.461** (2.327)	-2.002 (1.544)	10.151*** (2.400)	-8.948*** (1.578)	-0.955 (1.902)	-2.067 (3.972)
Global Treat.=1 × Other Treat.=1	-6.372** (3.144)	3.065 (2.065)	-2.784 (4.003)	4.439 (2.812)	0.255 (3.255)	7.061 (4.877)
Mean of Dep. Var.	62.32	75.32	60.25	72.85	53.17	68.51
St. Dev. of Dep. Var.	11.82	8.12	14.00	10.19	16.30	12.19
Observations	215	326	276	265	412	129

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A11: **Posterior Effects on Participation**

	Probability to Attend			Effective Participation		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Lower Income Students Sample with Controls</b>						
Global Attendance Posteriors	0.187*			0.172		
	(0.109)			(0.169)		
Lower Income Attendance Posteriors		-0.051		-0.160		
		(0.087)		(0.134)		
Higher Income Attendance Posteriors			0.118*			0.106
			(0.061)			(0.097)
Mean of Dep. Var.	57.22	57.22	57.22	42.06	42.06	42.06
St. Dev. of Dep. Var.	34.66	34.66	34.66	49.40	49.40	49.40
Observations	783	783	783	775	775	775
<b>Panel B: Higher Income Students Sample with Controls</b>						
Global Attendance Posteriors	-0.102			-0.105		
	(0.177)			(0.243)		
Lower Income Attendance Posteriors		-0.028		-0.028		
		(0.110)		(0.173)		
Higher Income Attendance Posteriors			0.142			0.016
			(0.091)			(0.144)
Mean of Dep. Var.	60.11	60.11	60.11	47.11	47.11	47.11
St. Dev. of Dep. Var.	35.42	35.42	35.42	49.96	49.96	49.96
Observations	540	540	540	537	537	537

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A12: Two Stage Estimates: First Stage Results

	Sample: Lower Income Students				Sample: Higher Income Students			
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Posteriors</b>								
Global Treat.	2.173* (1.212)	-1.992*** (0.684)	2.311* (1.227)	-2.123*** (0.687)	1.444 (1.282)	-2.324*** (0.803)	1.275 (1.290)	-2.338*** (0.806)
Mean of Dep. Var.	61.73	76.16	61.69	76.15	62.29	75.39	62.29	75.41
St. Dev. of Dep. Var.	12.79	8.09	12.86	8.09	11.80	8.22	11.84	8.24
Observations	319	473	314	468	215	327	214	325
<b>Panel B: Own Group Attendance Posteriors</b>								
Own Treat.	6.441*** (1.144)	-5.687*** (0.973)	6.430*** (1.157)	-5.546*** (0.971)	14.247*** (1.318)	-1.554 (2.204)	14.394*** (1.323)	-1.733 (2.237)
Mean of Dep. Var.	61.22	73.90	61.20	73.93	53.11	68.57	53.20	68.59
St. Dev. of Dep. Var.	14.04	10.57	14.09	10.54	16.27	12.14	16.34	12.23
Observations	422	370	417	365	411	131	410	129
<b>Panel C: Other Group Attendance Posteriors</b>								
Other Treat.	19.541*** (1.129)	0.910 (2.072)	19.617*** (1.130)	0.910 (2.072)	6.394*** (1.402)	-6.108*** (1.016)	6.230*** (1.415)	-6.163*** (1.018)
Mean of Dep. Var.	48.69	68.80	48.84	68.80	60.18	72.95	60.30	72.94
St. Dev. of Dep. Var.	18.12	13.66	18.00	13.66	13.97	10.31	14.02	10.33
Observations	659	133	649	133	276	266	274	265

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 This table reports the first stage of the principal two stage estimates reported in 9. The same regression is run in columns (1) & (3), (2) & (4), (5) & (7), and (6) & (8), but results vary minimally as samples will change depending on the final dependent variable used in second stage (either reported probability to attend or effective participation). Regressions only control for attendance priors(global and relative) and university. Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A13: **Two Stage Estimates: Treatment Effects on Participation**

	Sample: Lower Income Students				Sample: Higher Income Students			
	Probability to Attend		Effective Participation		Probability to Attend		Effective Participation	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Beliefs</b>								
Global Attendance Posteriors	0.177 (1.393)	0.915 (1.497)	2.688 (2.382)	-1.550 (2.207)	-0.494 (1.696)	1.192 (1.124)	4.765 (4.056)	-0.788 (1.808)
Mean of Dep. Var.	52.55	60.39	36.33	45.91	57.15	62.05	45.07	48.46
St. Dev. of Dep. Var.	34.63	34.37	48.17	49.89	36.25	34.78	49.87	50.05
Observations	316	467	311	464	214	326	213	324
Kleibergen-Paap rk Wald F Statistic	2.47	5.58	2.64	6.38	2.58	9.01	2.37	9.14
<b>Panel B: Own Group Attendance Beliefs</b>								
Lower Income Attendance Posteriors	-0.029 (0.419)	1.024 (0.692)	0.021 (0.617)	0.462 (1.045)				
Higher Income Attendance Posteriors					0.431** (0.195)	-0.688 (2.325)	0.629** (0.313)	-1.838 (4.498)
Mean of Dep. Var.	54.02	60.88	38.74	45.86	58.10	66.50	45.12	53.54
St. Dev. of Dep. Var.	34.61	34.41	48.77	49.90	35.71	33.83	49.82	50.07
Observations	418	365	413	362	411	129	410	127
Kleibergen-Paap rk Wald F Statistic	29.71	19.86	27.63	18.85	100.60	0.58	103.26	0.49
<b>Panel C: Other Group Attendance Beliefs</b>								
Lower Income Attendance Posteriors					0.355 (0.495)	1.071** (0.544)	1.167 (0.782)	1.816** (0.911)
Higher Income Attendance Posteriors	0.216* (0.119)	1.139 (4.768)	0.356** (0.178)	-3.244 (8.150)				
Mean of Dep. Var.	55.57	65.32	39.56	54.14	56.70	63.64	42.12	52.27
St. Dev. of Dep. Var.	34.67	33.60	48.94	50.02	35.86	34.68	49.47	50.04
Observations	650	133	642	133	275	265	273	264
Kleibergen-Paap rk Wald F Statistic	262.58	0.23	263.03	0.23	17.13	40.86	16.66	41.43

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.



Table A14: Two Stage Estimates: First Stage Results

	Sample: Lower Income Students				Sample: Higher Income Students			
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Posteriors</b>								
Global Treat.	2.166 (1.378)	-1.800** (0.762)	2.280 (1.403)	-1.926** (0.763)	2.206 (1.374)	-2.678*** (0.892)	2.136 (1.387)	-2.704*** (0.894)
Mean of Dep. Var.	61.67	76.16	61.63	76.14	62.27	75.32	62.26	75.34
St. Dev. of Dep. Var.	12.84	8.11	12.91	8.09	11.82	8.12	11.86	8.14
Observations	316	467	311	464	214	326	213	324
<b>Panel B: Own Group Attendance Posteriors</b>								
Own Treat.	6.990*** (1.283)	-5.058*** (1.135)	6.852*** (1.303)	-4.902*** (1.129)	13.863*** (1.382)	-1.985 (2.608)	14.026*** (1.380)	-1.922 (2.752)
Mean of Dep. Var.	61.09	73.88	61.07	73.93	53.11	68.51	53.20	68.53
St. Dev. of Dep. Var.	14.02	10.62	14.07	10.58	16.27	12.19	16.34	12.28
Observations	418	365	413	362	411	129	410	127
<b>Panel C: Other Group Attendance Posteriors</b>								
Other Treat.	19.378*** (1.196)	1.230 (2.548)	19.372*** (1.194)	1.230 (2.548)	6.430*** (1.553)	-6.587*** (1.031)	6.330*** (1.551)	-6.698*** (1.041)
Mean of Dep. Var.	48.60	68.80	48.81	68.80	60.19	72.85	60.31	72.84
St. Dev. of Dep. Var.	18.19	13.66	18.07	13.66	13.99	10.19	14.05	10.21
Observations	650	133	642	133	275	265	273	264

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 This table reports the first stage of the principal two stage estimates reported in 9. The same regression is run in columns (1) & (3), (2) & (4), (5) & (7), and (6) & (8), but results vary minimally as samples will change depending on the final dependent variable used in second stage (either reported probability to attend or effective participation). Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A15: **Two Stage Estimates: Treatment Effects on Participation without Subjects with No Intention to Participate**

	Sample: Lower Income Students				Sample: Higher Income Students			
	Reported Probability to Attend		Effective Participation		Reported Probability to Attend		Effective Participation	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Beliefs</b>								
Global Attendance Posteriors	0.442 (1.478)	1.579 (1.617)	0.032 (0.029)	-0.016 (0.023)	-0.262 (1.729)	1.291 (1.076)	0.055 (0.044)	-0.006 (0.018)
Mean of Dep. Var.	59.73	63.42	0.42	0.49	64.31	66.39	0.51	0.52
St. Dev. of Dep. Var.	31.38	32.65	0.49	0.50	32.24	31.88	0.50	0.50
Observations	273	442	267	439	188	304	187	302
Kleibergen-Paap rk Wald F Statistic	1.91	5.68	2.12	6.60	2.64	9.87	2.43	9.97
<b>Panel B: Own Group Attendance Beliefs</b>								
Lower Income Attendance Posteriors	-0.128 (0.442)	0.940 (0.704)	0.000 (0.007)	0.002 (0.011)				
Higher Income Attendance Posteriors					0.502** (0.206)	-1.500 (2.758)	0.006* (0.004)	-0.023 (0.050)
Mean of Dep. Var.	58.99	65.42	0.43	0.50	64.24	69.65	0.50	0.56
St. Dev. of Dep. Var.	32.30	31.79	0.50	0.50	32.13	31.38	0.50	0.50
Observations	379	336	373	333	369	123	368	121
Kleibergen-Paap rk Wald F Statistic	24.56	17.41	21.96	16.40	93.68	0.51	96.82	0.43
<b>Panel C: Other Group Attendance Beliefs</b>								
Higher Income Attendance Posteriors	0.265** (0.121)	3.898 (5.303)	0.004* (0.002)	-0.010 (0.047)				
Lower Income Attendance Posteriors					0.291 (0.555)	1.682*** (0.628)	0.011 (0.009)	0.023** (0.011)
Mean of Dep. Var.	60.53	69.00	0.44	0.58	63.36	67.79	0.47	0.56
St. Dev. of Dep. Var.	32.28	31.02	0.50	0.50	32.08	31.83	0.50	0.50
Observations	590	125	581	125	244	248	242	247
Kleibergen-Paap rk Wald F Statistic	233.26	0.47	233.90	0.47	12.60	30.21	11.99	30.65

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A16: **Two Stage Estimates: Treatment Effects on Participation without Subjects with Definite Intention to Participate**

	Sample: Lower Income Students				Sample: Higher Income Students			
	Reported Probability to Attend		Effective Participation		Reported Probability to Attend		Effective Participation	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Beliefs</b>								
Global Attendance Posteriors	1.284 (2.911)	1.250 (1.481)	0.057 (0.073)	-0.023 (0.022)	2.555 (16.211)	3.457 (3.998)	0.349 (1.493)	0.007 (0.042)
Mean of Dep. Var.	38.03	46.36	0.18	0.27	41.40	43.30	0.24	0.24
St. Dev. of Dep. Var.	29.49	31.47	0.39	0.44	33.30	31.01	0.43	0.43
Observations	219	306	216	304	141	193	140	192
Kleibergen-Paap rk Wald F Statistic	0.57	4.68	0.61	5.31	0.05	1.08	0.04	1.11
<b>Panel B: Own Group Attendance Beliefs</b>								
Lower Income Attendance Posteriors	-0.344 (0.469)	0.995 (1.010)	-0.005 (0.006)	-0.001 (0.015)				
Higher Income Attendance Posteriors					0.088 (0.281)	-3.351 (4.302)	0.002 (0.004)	-0.084 (0.072)
Mean of Dep. Var.	39.81	46.80	0.19	0.28	41.84	44.97	0.24	0.24
St. Dev. of Dep. Var.	29.47	32.28	0.40	0.45	32.33	30.61	0.43	0.43
Observations	294	231	290	230	264	70	264	68
Kleibergen-Paap rk Wald F Statistic	19.44	8.29	18.76	7.20	40.82	0.38	43.23	0.49
<b>Panel C: Other Group Attendance Beliefs</b>								
Higher Income Attendance Posteriors	0.010 (0.144)	1.073 (2.450)	0.001 (0.002)	-0.024 (0.035)				
Lower Income Attendance Posteriors					0.899 (0.558)	0.409 (0.664)	0.015* (0.009)	0.017 (0.011)
Mean of Dep. Var.	41.46	50.61	0.21	0.33	40.83	44.46	0.22	0.26
St. Dev. of Dep. Var.	30.43	32.47	0.41	0.47	32.27	31.58	0.42	0.44
Observations	443	82	438	82	181	153	180	152
Kleibergen-Paap rk Wald F Statistic	158.68	0.59	158.09	0.59	11.88	24.78	11.92	25.74

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A17: **Two Stage Estimates: Treatment Effects on Participation for Subjects with a 10 pp Difference**

	Sample: Lower Income Students				Sample: Higher Income Students			
	Reported Probability to Attend		Effective Participation		Reported Probability to Attend		Effective Participation	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Beliefs</b>								
Global Attendance Posteriors	0.453 (2.511)	3.750 (3.224)	0.006 (0.035)	-0.018 (0.033)	-1.549* (0.826)	-0.894 (1.077)	0.001 (0.014)	-0.016 (0.017)
Mean of Dep. Var.	47.91	61.08	0.30	0.47	53.84	64.60	0.40	0.53
St. Dev. of Dep. Var.	35.71	34.01	0.46	0.50	39.32	34.44	0.49	0.50
Observations	138	264	135	263	83	187	84	185
Kleibergen-Paap rk Wald F Statistic	0.39	2.09	0.46	2.59	4.63	10.47	4.64	10.77
<b>Panel B: Own Group Attendance Beliefs</b>								
Lower Income Attendance Posteriors	-0.117 (0.295)	0.741 (0.916)	0.000 (0.004)	0.004 (0.012)				
Higher Income Attendance Posteriors					0.274 (0.192)	1.802 (2.653)	0.004 (0.003)	0.037 (0.048)
Mean of Dep. Var.	53.84	61.49	0.37	0.45	56.13	73.15	0.43	0.60
St. Dev. of Dep. Var.	34.86	35.74	0.48	0.50	36.34	31.76	0.50	0.49
Observations	229	192	228	191	308	60	307	60
Kleibergen-Paap rk Wald F Statistic	49.13	9.83	49.23	9.81	91.00	0.50	93.49	0.50
<b>Panel C: Other Group Attendance Beliefs</b>								
Higher Income Attendance Posteriors	0.218* (0.112)	-3.235 (3.919)	0.003* (0.002)	-0.099 (0.099)				
Lower Income Attendance Posteriors					0.164 (0.434)	0.516 (0.555)	0.011 (0.007)	0.013 (0.009)
Mean of Dep. Var.	54.96	67.52	0.40	0.59	54.01	63.36	0.43	0.50
St. Dev. of Dep. Var.	34.52	33.12	0.49	0.50	37.27	35.32	0.50	0.50
Observations	544	71	536	71	180	140	178	139
Kleibergen-Paap rk Wald F Statistic	274.92	0.51	274.97	0.51	19.10	25.16	19.10	24.92

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A18: Two Stage Estimates: Treatment Effects on Participation for Subjects with a 5 pp Difference

	Sample: Lower Income Students				Sample: Higher Income Students			
	Reported Probability to Attend		Effective Participation		Reported Probability to Attend		Effective Participation	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Beliefs</b>								
Global Attendance Posteriors	-0.147 (1.407)	2.361 (1.563)	0.007 (0.019)	-0.003 (0.019)	-0.775 (1.008)	-0.495 (1.105)	0.019 (0.018)	-0.011 (0.018)
Mean of Dep. Var.	51.09	60.24	0.33	0.45	56.58	64.00	0.46	0.52
St. Dev. of Dep. Var.	35.04	34.28	0.47	0.50	36.97	34.50	0.50	0.50
Observations	255	347	251	344	165	238	165	236
Kleibergen-Paap rk Wald F Statistic	2.18	5.92	2.26	7.02	6.72	9.71	6.31	9.89
<b>Panel B: Own Group Attendance Beliefs</b>								
Lower Income Attendance Posteriors	-0.107 (0.368)	0.922 (0.660)	-0.000 (0.005)	0.010 (0.010)				
Higher Income Attendance Posteriors					0.499** (0.194)	0.585 (3.006)	0.006** (0.003)	0.012 (0.059)
Mean of Dep. Var.	53.62	62.74	0.38	0.47	57.38	70.12	0.45	0.55
St. Dev. of Dep. Var.	34.53	34.41	0.49	0.50	36.18	33.36	0.50	0.50
Observations	346	276	341	274	373	83	372	83
Kleibergen-Paap rk Wald F Statistic	37.80	17.73	34.95	18.00	97.58	0.28	100.35	0.28
<b>Panel C: Other Group Attendance Beliefs</b>								
Higher Income Attendance Posteriors	0.214* (0.114)	-0.060 (1.305)	0.003* (0.002)	-0.029 (0.024)				
Lower Income Attendance Posteriors					0.192 (0.477)	0.827 (0.577)	0.008 (0.007)	0.016* (0.009)
Mean of Dep. Var.	55.67	66.01	0.40	0.56	55.31	63.03	0.44	0.51
St. Dev. of Dep. Var.	34.64	33.99	0.49	0.50	36.15	34.60	0.50	0.50
Observations	609	91	601	91	238	192	236	191
Kleibergen-Paap rk Wald F Statistic	265.80	2.03	267.98	2.03	16.78	29.60	16.69	30.15

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A19: **Two Stage Estimates: Treatment Effects on Participation for Subjects Without Extreme Priors**

	Sample: Lower Income Students				Sample: Higher Income Students			
	Reported Probability to Attend		Effective Participation		Reported Probability to Attend		Effective Participation	
	Prior Below Truth (1)	Prior Above Truth (2)	Prior Below Truth (3)	Prior Above Truth (4)	Prior Below Truth (5)	Prior Above Truth (6)	Prior Below Truth (7)	Prior Above Truth (8)
<b>Panel A: Global Attendance Beliefs</b>								
Global Attendance Posteriors	-0.128 (2.495)	1.026 (1.683)	0.034 (0.040)	-0.019 (0.025)	1.010 (4.594)	2.273 (2.458)	0.147 (0.231)	-0.016 (0.036)
Mean of Dep. Var.	53.12	59.67	0.38	0.45	58.56	61.59	0.46	0.47
St. Dev. of Dep. Var.	34.65	34.38	0.49	0.50	35.48	34.71	0.50	0.50
Observations	280	415	275	412	193	293	192	291
Kleibergen-Paap rk Wald F Statistic	0.97	4.91	1.13	6.01	0.44	2.50	0.38	2.62
<b>Panel B: Own Group Attendance Beliefs</b>								
Lower Income Attendance Posteriors	0.004 (0.456)	1.453* (0.829)	0.001 (0.007)	0.006 (0.012)				
Higher Income Attendance Posteriors					0.450** (0.228)	-0.496 (1.712)	0.006 (0.004)	-0.023 (0.034)
Mean of Dep. Var.	54.26	59.72	0.39	0.44	58.56	64.97	0.46	0.52
St. Dev. of Dep. Var.	34.50	34.25	0.49	0.50	35.10	34.19	0.50	0.50
Observations	401	304	396	301	366	115	365	113
Kleibergen-Paap rk Wald F Statistic	26.90	15.40	24.83	14.42	86.10	1.33	89.37	1.12
<b>Panel C: Other Group Attendance Beliefs</b>								
Higher Income Attendance Posteriors	0.341** (0.159)	0.746 (2.588)	0.006** (0.002)	-0.014 (0.039)				
Lower Income Attendance Posteriors					0.517 (0.501)	1.860** (0.750)	0.014* (0.008)	0.026* (0.013)
Mean of Dep. Var.	57.50	64.84	0.41	0.53	56.63	63.97	0.42	0.51
St. Dev. of Dep. Var.	34.13	33.28	0.49	0.50	35.63	33.58	0.49	0.50
Observations	527	121	522	121	262	212	260	211
Kleibergen-Paap rk Wald F Statistic	202.69	0.76	206.11	0.76	16.96	22.81	16.27	23.32

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01 Regressions include the following controls: university dummy, value of feminist movement, protest is characterized as peaceful/violent, political ideology, interest in politics, past participation in Women's Day marches, commune of residence and attendance priors(global and relative). Robust standard errors are reported in parenthesis. Both universities are included in this analyzed sample.

Table A20: **Intention to Participate vs. Final Participation**

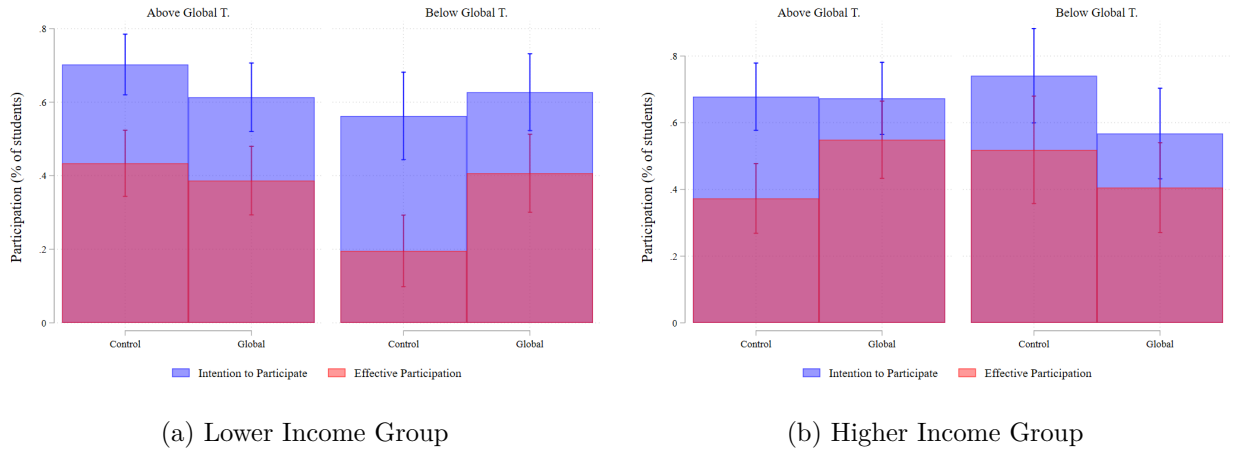
<b>Intention to Participate</b>	<b>Final Participation</b>		
	No	Yes	Total
<b>Panel A: Wave 1</b>			
No	115	2	117
Probably Not	276	9	285
Probably Yes	245	187	432
Yes	82	381	463
Total	718	579	1297
<b>Panel B: Wave 2</b>			
No	149	3	152
Probably Not	304	8	312
Probably Yes	194	127	321
Yes	74	442	516
Total	721	580	1301

Table shows in columns the final participation of students according to the reported intention to participate (either in Wave 1 or Wave 2). The sample studied considers students from both universities.

## 12 Reduced Form: Treatment effects on participation: Graphical Analysis

In regards to global information treatments, one can observe opposite behaviours between income groups. Graphs in Figure A12 show, although not significantly, that lower income students tend to behave as complements with the general population, and higher income students as substitutes. This is because, if taking lower income students for example, one can observe that students who receive global treatment and were above the truth (i.e. update global participation posteriors downwards), had lower participation (only intention in this case) than the control group and students who were below the truth (i.e. update global participation posteriors upwards) had higher participation (both intention and effective).

Figure A12: Treatment Effect on Protest Participation - Global Treatment

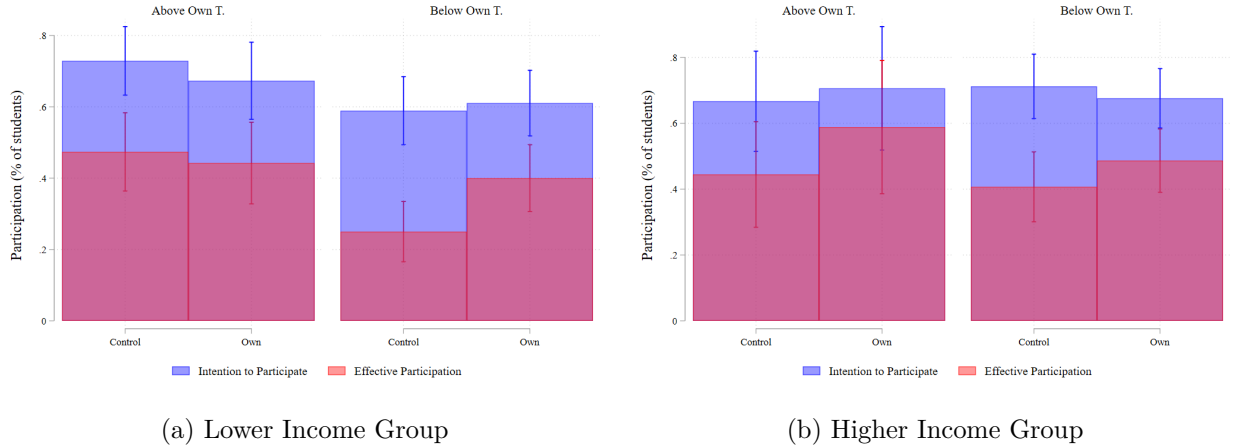


Next, if we consider own group treatments in Figure A13, final effects on participation appear unclear for both income groups. In the case of higher income students, one should only consider those below truth as most students were in this sub-sample due to overall underestimation of this group's participation and therefore unbalanced samples. In consequence, if one only examines participation of high income students who were below truth, one could appreciate evidence of high income students behaving as complements with own group participation in regards to effective participation (which demonstrates more change than intention to participate). On the other hand, for lower income students one could say that it appears as students are behaving also as complements. Lower income students with priors above truth saw a greater decrease in intention to participate (same pattern in a smaller magnitude is observed for effective participation), while those below truth saw a big increase in effective participation. These findings, although mostly indicative and to be supported by estimations,



are in line with our hypothesis: agents act as complements with own groups or similar agents as they participate in protests and demonstrations with a shared goal in mind. Therefore, as more people of the same group participate, more chances of success or value in that participation and protest.

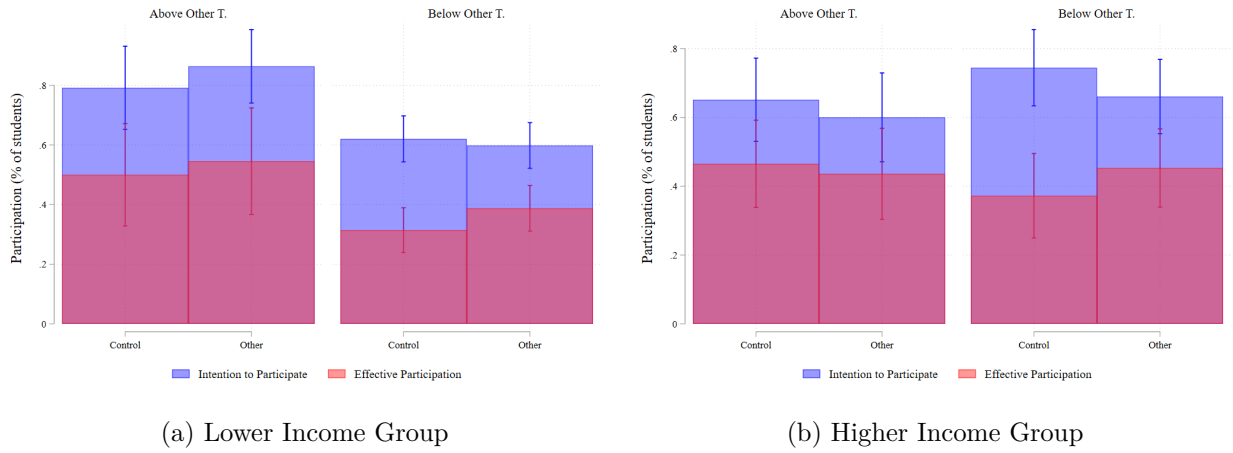
Figure A13: Treatment Effect on Protest Participation - Own Income Level Treatment



Finally, with respect to other group treatments once again we observe not so clear effects. When considering lower income students (who therefore receive higher income group participation treatments) we must only analyze the sub-sample of students who were below truth (as explained before due to imbalances in sub-samples). There is mixed evidence: intention to participate decreases insignificantly, while effective participation increases more. This second effect, which is slightly bigger, would be suggestive of complementary forces at play. Higher income students who had priors above the “true” participation showed decreases in participation, both effective and intention, when learning of the lower participation of the other group (i.e. behaved as complements). While higher income students who had priors below truth showed decreases in intention to participate (substitutes) and increases in effective participation (complements). Taking all of this into consideration, it would appear that both the lower and higher income group interact strategically as complements with other-group participation. This is surprising as one would have expected certain intergroup animosities to generate substitutability with other-group participation.

Results discussed in this section are merely suggestive, as on the one hand they have no significance (demonstrated by the overlapping confidence intervals between control and treatment groups), and on the other, different results are found depending on the participation variable being utilized (intention or effective) and subsample being analyzed (below or above truth). Estimations provide further clarity in these strategic participation effects, but these graphs serve as an initial illustrative

Figure A14: Treatment Effect on Protest Participation - Other Income Level Treatment



approach of possible underlying links between other's participation and own decision to participate.