

Supplemental material:
Social media and pathways to protest participation:
Evidence from the 2019 Chilean social outburst”

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This document accompanies the article Social media and pathways to protest participation: Evidence from the 2019 Chilean social outburst.’ It includes additional information and estimation results aimed at complementing the information provided in the text and facilitating the interpretation of the findings.

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Appendix A: Additional information regarding the survey

The Participation, Young People, and Media Consumption Survey is a public opinion project conducted by the School of Journalism at Universidad Diego Portales in a partnership with Feedback, a professional polling firm based in Santiago, Chile. The project started in 2009 in order to understand the relation between media use and political participation among the Chilean youth. The survey is conducted annually since 2009. Data and information of all surveys are available in <https://ciclos.udp.cl/proyectos/encuesta-de-jovenes-participacion-y-medios/>. The Participation, Young People, and Media Consumption data has been the basis of scores of articles in professional journals in the fields of Communication and Political Science.

The survey was conducted between November 21 and December 15, 2019. The sample size is 1,000 individuals aged 18 and 29, living in the country's three main urban centers: Metropolitan Santiago (398 respondents), Valparaíso (302), and Concepción (300). These urban centers represent 63% of the Chilean population. The sampling error is 3.1%. Weights are constructed using population data based on the 2017 census conducted by Chile's National Statistics Institute.

Appendix B: Descriptive statistics

Table 1 presents summary statistics for all variables included in regression models.

Table 1: Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Participation in protest	952	0.53	0.50	0	1
Age	1,000	23.67	3.40	18	29
Woman	1,000	0.49	0.50	0	1
Economy: Pessimistic	985	0.42	0.49	0	1
Political interest	984	3.16	1.29	1	5
Trust in institutions	897	1.45	0.45	1	3.30
Interpersonal conversation	1,000	3.18	1.81	0	6
TV consumption	814	0.91	1.14	0	12
Radio consumption	795	0.74	1.29	0	9
Newspaper consumption	779	0.32	0.74	0	6
Alternative sources consumption	806	1.06	1.52	0	12
Instagram use	991	5.33	2.45	1	7
Facebook use	995	5.65	2.08	1	7
WhatsApp use	996	6.66	1.21	1	7
YouTube use	986	4.96	2.39	1	7
Twitter use	980	2.05	2.11	1	7
Getting Information in social media	998	5.94	2.95	1	10
Contacting People in social media	998	7.65	2.91	1	10
Sharing interests in social media	993	4.04	2.52	1	10
Engaging in political activities in social media	987	4.33	2.42	1	10
SES: Low	1,000	0.20	0.40	0	1
SES: Middle-low	1,000	0.43	0.50	0	1
SES: Middle	1,000	0.24	0.43	0	1
SES: Middle-high	1,000	0.12	0.33	0	1
Pol id: Non-identify	1,000	0.40	0.49	0	1
Pol id: Left	1,000	0.20	0.40	0	1
Pol id: Center	1,000	0.34	0.47	0	1
Pol id: Right	1,000	0.07	0.25	0	1

Appendix C: Trust in institutions

In regression models, we include a variable capturing the level of trust young people have in different institutions. We create a simple index of trust based on the following 10 institutions: the national government, members of Congress, political parties, the media, the courts, major companies, the catholic church, armed forces, the police, and the local government. Each variable is measured on a 4-point Likert scale, ranging from “none at all” to “a great deal.”

Figure 1 exhibits levels of trust among young Chileans in the 10 institutions mentioned. As shown, young Chileans exhibit extremely low levels of trust in all institutions. The national government and political parties are among the less trusted institutions, with less than 5% of respondents declare to trust ‘quite a lot’ or ‘a great deal’ such institutions. On the other hand, the most trusted institution is the local government. About 20% of respondents say that they trust ‘quite a lot’ or ‘a great deal’ their local governments.

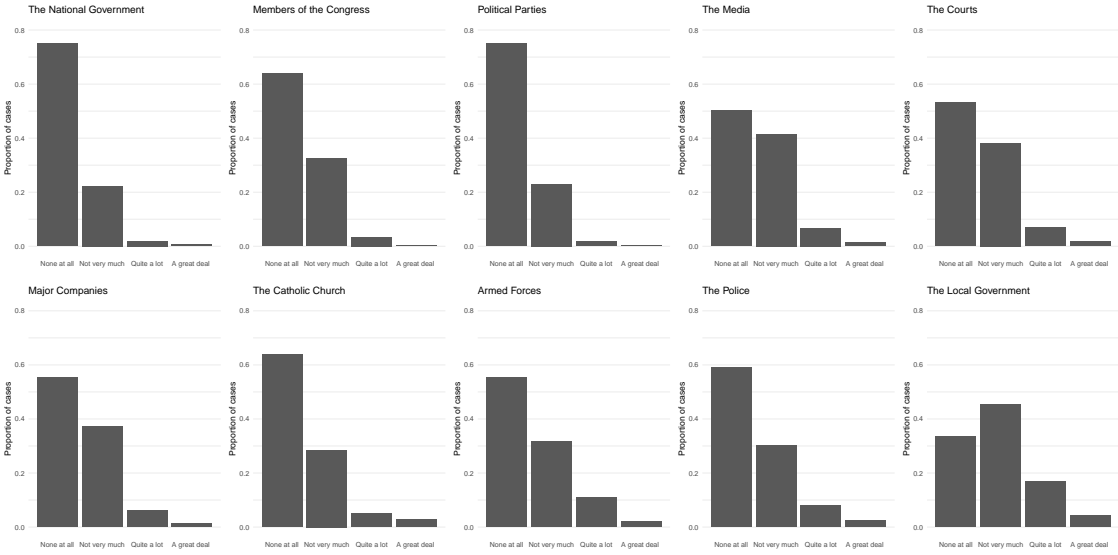


Figure 1: Trust in 10 institutions among young Chileans

Appendix D: Wording questions

Variable	Wording	Original values
Participation in protests	During the last few weeks, have you participated in any of the following actions related to the social mobilizations that started during the month of October?	1 - 2
Social media use	How often do you visit the following sites or use the following applications? a) Instagram; b) Facebook; c) WhatsApp; d) YouTube; e) Twitter	0 - 7
Media use	On a typical day, how many hours do you spend on the following media, on average? a) Television; b) Radio; c) Newspapers; d) Alternative digital media	0 - 24
Political interest	On a scale of 1 to 5, where 1 means you are "not interested" and 5 means you are "very interested in," how interested are you in? a) Political news; b) Talking about political issues with friends and family	1 - 5
Interpersonal conversation	In the last few weeks, to which of the following people have you talked about the social mobilizations that began in October? a) Friends; b) Relatives; c) Neighbors; d) Co-workers; e) Classmates; d) People in social media platforms	1 - 2
Trust in institutions	How much confidence do you have in the following institutions? a) The national government; b) The congress; c) Political parties; d) The media; e) The courts; f) Major companies; g) The Catholic Church; h) Armed forces; i) The police; f) The local government	1 - 4
Economy	In your opinion, currently, the economy in Chile is?	1 - 3
Political ideology	Generally speaking, people classify their political position as left, center, and right. On a scale of 1 to 10, where 1 means "your political position is on the left" and 10 means "your political position is in the right." Where would you place yourself?	1 - 10
Specific uses	Thinking about the social media platform you use most frequently, on a scale of 1 to 10, where 1 means "never" and 10 means "always." How often do you perform the following actions? a) Being informed about political issues; b) Stay in touch with friends and relatives; c) Meet new people to share my interests; d) Talk about politics with people who have different opinions; e) Engage in political or social causes; f) Forward political comments to other people; g) Give my opinion about political or public issues; h) Share news or articles	1 - 10
Age	How old are you?	18-29

Appendix E: Additional analysis regarding participation in the context of the Chilean social outburst

As noted by one of the reviewers, participation in the “social outburst” was not limited to participation in demonstrations.¹ As mentioned in the article, manifestations range from pacific actions to violent ones. Unfortunately, the survey does not ask about participation in a wide variety of actions. However, the survey includes one question about the participation in *cacerolazos*. These are a form of displaying popular discontent consisting of banging on pots. As a form of popular public expression, it was first used by the Chilean right-wing against Salvador Allende’s Popular Unity Government. Since the restoration of democracy in the country, *cacerolazos* are used to exhibit discontent with the national government (Peñafiel and Doran, 2018).

We combine participation in *cacerolazos* with participation in demonstrations to create a new variable of participation in protests. The resulting variable has three categories: committed, occasional, and outsiders. Committed are individuals who participate in both activities; occasional participate in either demonstrations or *cacerolazos*. Finally, outsiders participate in neither of the two. To estimate the relationship between social media use and this new measure of participation, we rely on the Multinomial logit model (MNL). The MNL is an extension of Logit Models used when nominal outcomes are more than two categories (Train, 2009). Since our dependent variable has three categories, MNL is appropriated. We adjust for the same variables as table 1 presented in the article.

Table 1 display the regression coefficients. The category of reference is outsiders. As shown, results are quite similar to those obtained in the analysis using only participation in demonstrations, although the p-value for the Facebook variable is 0.06.

¹ We thank one of the anonymous reviews for this suggestion.

Table 2: Multinomial models

	<i>Dependent variable:</i>			
	Model 1		Model2	
	Occasional	Committed	Occasional	Committed
Age	-0.19*** (0.05)	-0.20*** (0.05)	-0.20*** (0.06)	-0.21*** (0.05)
SES middle-low	0.42 (0.46)	0.32 (0.42)	0.45 (0.47)	0.28 (0.46)
SES middle	0.29 (0.49)	0.41 (0.44)	0.24 (0.50)	0.37 (0.46)
SES middle-high	0.73 (0.61)	1.08* (0.55)	0.64 (0.62)	0.83 (0.57)
Women	0.99** (0.35)	1.17*** (0.32)	0.97** (0.37)	0.94** (0.34)
Chilean econ: Pessimistic	0.54 (0.34)	0.25 (0.31)	0.64† (0.35)	0.21 (0.32)
Political interest	0.56*** (0.14)	0.90*** (0.13)	0.54*** (0.16)	0.77*** (0.15)
Left	0.51 (0.56)	1.06* (0.48)	0.44 (0.58)	0.88† (0.51)
Center	0.58 (0.39)	0.35 (0.35)	0.59 (0.40)	0.43 (0.38)
Right	-1.23 (0.77)	-2.66*** (0.76)	-1.48† (0.84)	-3.07*** (0.85)
Trust in institutions	-0.88* (0.43)	-1.87*** (0.41)	-0.93* (0.45)	-1.91*** (0.44)
Interpersonal conversation	0.59*** (0.13)	0.73*** (0.12)	0.55*** (0.13)	0.70*** (0.13)
Television	-0.22 (0.18)	-0.34* (0.16)	-0.26 (0.18)	-0.37* (0.17)
Radio	-0.15 (0.15)	0.09 (0.12)	-0.09 (0.16)	0.17 (0.13)
Newspapers	-0.14 (0.22)	-0.12 (0.20)	-0.19 (0.23)	-0.19 (0.23)
Alternative sources	0.22 (0.15)	0.30* (0.14)	0.31† (0.16)	0.32* (0.16)
Instagram	-0.04 (0.07)	0.07 (0.07)	-0.05 (0.08)	0.06 (0.07)
Facebook	0.05 (0.08)	0.14† (0.08)	0.06 (0.08)	0.14† (0.08)
WhatsApp	-0.33† (0.19)	-0.27 (0.20)	-0.30 (0.20)	-0.29 (0.21)
YouTube	0.08 (0.07)	0.06 (0.06)	0.09 (0.07)	0.09 (0.07)
Twitter	-0.06 (0.10)	0.03 (0.08)	-0.06 (0.10)	0.01 (0.09)
Getting Information			0.02 (0.08)	0.01 (0.07)
Contacting People			-0.04 (0.08)	-0.002 (0.07)
Sharing interests			-0.29** (0.10)	-0.38*** (0.10)
Engaging in political activities			0.25* (0.13)	0.47*** (0.12)
Intercept	2.45 (1.90)	1.76 (1.85)	3.10 (1.98)	2.41 (1.95)
AIC		758.42		728.63
BIC		940.05		941.76
Log Likelihood		-335.21		-312.31
Deviance		670.42		624.63
Observations		494		486

Note:

†p<0.1; *p<0.05; **p<0.01; ***p<0.001

Appendix F: Additional information regarding the mediation analysis

The standard procedure for analyzing mechanisms in social science research is mediation analysis. In mediation analysis, a set of regression models are fitted to estimates the “mediation effects” based on the fitted models (Hayes, 2017; Imai et al., 2010; Tingley et al., 2014). To implement the mediation analysis, we employ the R package mediation, which implements a model-based causal mediation analysis under the assumption of sequential ignorability (Imai et al., 2010; Tingley et al., 2014).

Table 1 provides the result of the mediation analysis included in the main text. ACME is the average causal mediation effects and ADE is the average direct effects, which represent the population averages of the causal mediation and direct effects. Confidence intervals are calculated using nonparametric bootstrap. Specifically, table 1 presents bias-corrected and accelerated confidence intervals, which have better asymptotic properties and are often recommended to estimate mediation effects (Tingley et al., 2014).

Table 3: Mediation analysis: Instagram

	Estimate	95% CI Lower	95% CI Upper	p-value
ACME	0.008	0.003	0.015	0.004
ADE	-0.004	-0.024	0.013	0.668
Total Effect	0.004	-0.016	0.022	0.710
Prop. Mediated	2.135	-76.675	1.942	0.706

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