Who Does the Caring?
Gender Disparities in COVID-19 Attitudes and Behaviors

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Appendix A: Genetic Matching

Table A1 compares the standardized differences between cardinality and genetic matching. The results show that cardinality matching has a better performance achieving covariate balance. For example, in the case of genetic matching, we can see imbalances for four covariates (i.e., standardized differences above 0.1). Meanwhile, in the case of cardinality matching, covariate balance was obtained for all the covariates.

Table A1: Covariate balance after cardinality and genetic matching

Covariates	**Stand. Diff. Cardmatch**	**Stand. Diff. Genmatch**
Health vulnerability	0.09	0.09
Contribution to retirement	0.08	0.24
Public employee	0.03	0.09
Private employee	0.09	0.09
Independent employer with no employees	0.10	0.14
Independent employer with employees	0.10	0.20
Student	0.05	0.09
Retired	0.08	0.09
Does not work	0.07	0.07
Living in Lima	0.09	0.10
Living in the north	0.05	0.05
Living in the center	0.06	0.10
Living in the south	0.02	0.05
Living in the jungle	0.05	0.05
Age between 18 and 30	0.09	0.03
Age between 30 and 45	0.08	0.03
Age between 45 and 60	0.00	0.08
Age equal to or greater than 60	0.03	0.01
High socioeconomic status	0.06	0.07
Medium socioeconomic status	0.09	0.14
Low socioeconomic status	0.03	0.06
Primary education	0.03	0.03
Secondary education	0.05	0.08
Technical education	0.09	0.10

College education	0.04	0.02
Has a computer	0.03	0.01
Has internet	0.00	0.03
Urban	0.03	0.06
Semi-urban	0.05	0.09
Rural	0.01	0.03

Appendix B: Covariate Balance

All the covariates used in the analysis are binary variables; therefore, adjusting their means is a meaningful decision (which is not the case for nominal variables, for example). Table A2 reports the means for the entire sample, matched female and matched male groups. As a reminder, because we constructed a representative matched sample, we expect these three groups to have similar means. Also, we provide the standardized differences between the matched female and male groups, which should be lower than 0.1 standard deviations units as defined beforehand. As expected, the three groups are comparable, and standardized differences between the female and male group are smaller than 1/10th pooled standard deviations for all of the covariates.

Table A2: Covariate Balance

Covariates	Mean Entire Sample	Mean Matched Female	Mean Matched Male	Standardized Differences
Health vulnerability[1]	0.53	0.55	0.51	0.09
Contribution to retirement	0.45	0.43	0.48	0.08
Public employee	0.07	0.06	0.07	0.03
Private employee	0.22	0.21	0.24	0.09
Independent employer with no employees	0.04	0.03	0.05	0.10
Independent employer with employees	0.35	0.33	0.38	0.10
Student	0.09	0.08	0.10	0.05
Retired	0.01	0.01	0.02	0.08
Does not work	0.08	0.07	0.09	0.07
Living in Lima	0.45	0.48	0.43	0.09
Living in the north	0.21	0.20	0.22	0.05
Living in the center	0.10	0.09	0.11	0.06
Living in the south	0.17	0.17	0.17	0.02
Living in the jungle	0.07	0.06	0.08	0.05
Age between 18 and 30	0.36	0.34	0.38	0.09
Age between 30 and 45	0.36	0.38	0.34	0.08
Age between 45 and 60	0.22	0.21	0.21	0.00
Age equal to or greater than 60	0.07	0.08	0.07	0.03

[1] Based on what we know to be the people most vulnerable to COVID-19 (those older than 65 and those with chronic diseases such as diabetes, hypertension, cancer, and cardiovascular or pulmonary conditions). Do you or someone in your home belong to this group?

High socioeconomic status	0.28	0.27	0.3	0.06
Medium socioeconomic status	0.36	0.38	0.34	0.09
Low socioeconomic status	0.36	0.35	0.36	0.03
Primary education	0.12	0.12	0.11	0.03
Secondary education	0.40	0.40	0.42	0.05
Technical education	0.16	0.18	0.14	0.09
College education	0.32	0.31	0.32	0.04
Has a computer	0.54	0.53	0.54	0.03
Has internet	0.53	0.53	0.53	0.00
Urban	0.73	0.71	0.73	0.03
Semi-urban	0.19	0.2	0.18	0.05
Rural	0.08	0.08	0.09	0.01

Appendix C: Church Attendance Rates

Figure A1 shows the rates of church attendance by gender for Latin American countries in the 2018/19 LAPOP surveys.

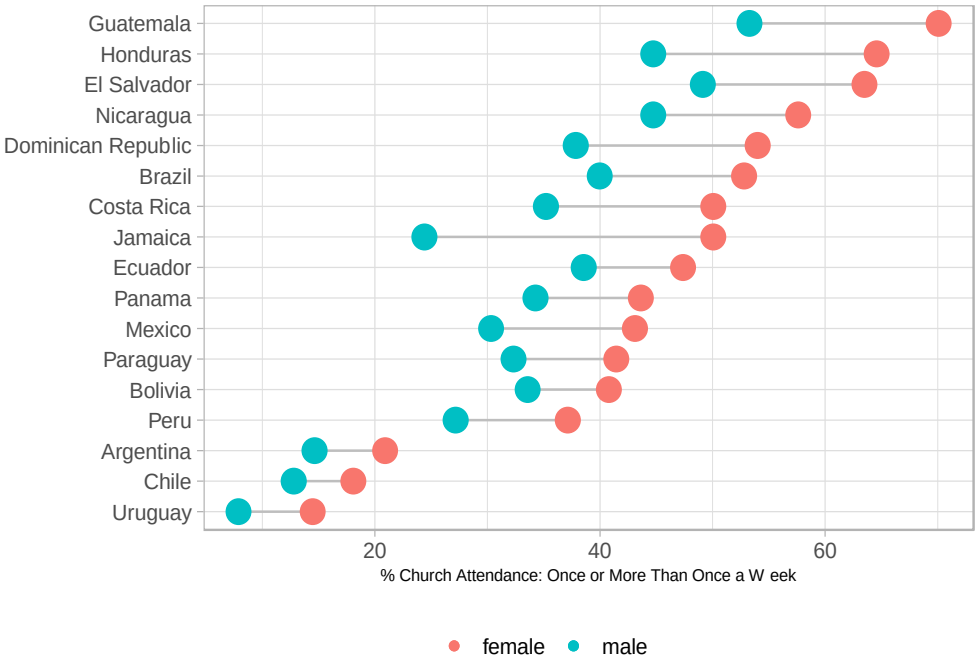

Figure A1. Church Attendance by Gender and Country (LAPOP 2018/19)

Appendix D: Sample Design

The nationally representative survey was implemented in Peru by the *Instituto de Estudios Peruanos* between May 21 and 29. 1,490 respondents were randomly selected by using a probability sampling with a single-stage random selection method. The sampling frame was built using mobile phone numbers provided by all cellphone companies operating in the country and registered with the Ministry of Transportation and Communications. The sample frame was randomly divided into blocks of 10,000 cell numbers. A predictive dialer first contacted all these numbers. If the number was contactable, the interviewer made the call to carry out the survey. Calls were made randomly, controlling for a quota by geographical area (Metropolitan Lima, North, Center, South, East). If the person agreed to the telephone interview and completed the entire survey, it was considered an effective survey. If the survey was rejected or was half finished, the software randomly selected another number, and the process continued until the desired number of surveys was obtained.

Appendix E: Ordinal Outcomes

In the paper we use binary indicators for the "quarantine" outcomes to avoid dropping missing values.[2] Tables A3 reports the main results when using the ordinal scale for these outcomes: 1) Disagree a lot, 2) Disagree a little, 3) Nor agree neither disagree, 4) Agree a little, 5) Agree a lot). The main findings are not conditional on the structure of the outcome (i.e., binary vs. ordinal).

Table A3: Gender disparities using ordinal outcomes (hypothesis 1)

Outcome	Mean Female	Mean Male	Difference-in-means
Support for quarantine	3.748	3.602	0.146**
Keep quarantine for the next three months	3.322	3.157	0.165**

P-values: * p<0.1, ** p<0.05, *** p<0.01

Appendix F: Sensitivity Analysis

[2] There are 9 missing values for support of the quarantine and 19 for continuing the quarantine (out of 1490 respondents). As a result, we use a traditional rather than a permutational t-test.

We implement a sensitivity analysis to check how sensitive our results are to the presence of hidden biases when comparing female and male respondents. The parameter Γ refers to the differential odds of being a woman due to the existence of unmeasured factors. A Γ = 1.0 means that two respondents with the same observed covariates have the same odds of being a woman. When Γ > 1.0 it means that one of these two individuals will have a greater odd of being a woman due to the existence of unmeasured characteristics (e.g., women might be more likely participate in a survey). Results are sensitive to a particular value of Γ when the upper bound p-value is greater than 0.1, which means that the findings are not significant anymore.

In Table A4, we report the value of Γ when findings were about to not be significant anymore (at a 0.1 significance level): in other words, assessing the tolerance our results have to hidden biases. We find that results for the "willingness" outcomes are very robust to having differentials odds of being a woman. In a pair of two respondents with the same observed covariates, one of them could be between 1.7 and 2.5 times more likely than the other to be a woman and the results will still be significant. In the case of the "quarantine" outcomes, these results are less robust but they do tolerate some small hidden biases before generating p-values that do not provide enough evidence to reject the null hypothesis.

Table A4: Sensitivity analysis

Outcome	**Gamma**	**P-value**
Support for quarantine	1.034	0.099
Keep quarantine in the next three months	1.077	0.098
Willingness to meet up with friends	1.899	0.099
Willingness to eat out	1.703	0.099
Willingness to go to the mall	1.698	0.099

Appendix G: Regression Results using entire sample

We also report results when using regression analyses and the entire sample rather than the matched sample. We obtain very similar results when comparing the gender disparities in the unmatched and matched sample.

Table A5: Gender disparities (hypothesis 1) using regression analysis and the entire sample

	Support for quarantine	Keep quarantine in the next three months
Female	0.013	0.047
	(0.026)	(0.029)
Health vulnerability	0.039	-0.001
	(0.027)	(0.029)
Socioeconomic status	0.038**	-0.010
	(0.019)	(0.022)
Education	-0.011	0.018
	(0.014)	(0.015)
Age	-0.009	0.010
	(0.015)	(0.017)
Urban	0.014	0.048*
	(0.024)	(0.025)
N	1,490	1,490

P-values: *p<0.1, ** p<0.05, *** p<0.01

Table A6: Gender disparities (hypothesis 2) using regression analysis and the entire sample

	Willingness to meet up with friends	Willingness to eat out	Willingness to attend a religious service	Willingness to go to the mall
Female	-0.060***	-0.050***	-0.007	-0.099***
	(0.016)	(0.014)	(0.022)	(0.023)
Health vulnerability	-0.010	-0.003	-0.013	0.007
	(0.016)	(0.013)	(0.022)	(0.023)
Socioeconomic status	0.001	0.017	-0.032**	-0.000
	(0.011)	(0.011)	(0.016)	(0.017)
Education	-0.001	-0.009	-0.038***	0.003
	(0.008)	(0.007)	(0.012)	(0.012)
Age	-0.013	-0.003	0.017	0.010
	(0.010)	(0.008)	(0.014)	(0.015)
Urban	0.008	-0.006	-0.053	-0.032
	(0.013)	(0.012)	(0.021)	(0.021)
N	1,490	1,490	1,490	1,490

P-values: *p<0.1, ** p<0.05, *** p<0.01

Appendix H: Weak Partisanship in Peru

Our survey does not include questions about partisanship or ideology. However, we believe this should not be a problem since partisanship is highly fluid and volatile (Lupu, 2016), and voters do not strongly rely on the left-right scale to make electoral decisions in Peru (Zechmeister, 2015). Peruvian political parties are unstable and weakly institutionalized (Levitsky & Cameron, 2003; Tanaka, 1998, 2006). Electoral volatility is one of the highest in the region as new political parties emerge and disappear every electoral cycle. Since the collapse of the party system in the 1990s, the political landscape in Peru has been dominated by coalitions of independent politicians lacking deep-seated ideologies, political organizations, or lives beyond particular leaders (Dietz & Myers, 2007; Muñoz, 2019; Zavaleta, 2014). As Levistky (Levitsky, 2018: 355) put it: "Peru is an extreme case of party decomposition". Partisan identities, therefore, do not structure citizens' political lives and policy preferences as they do in the United States or Brazil. In such settings, citizens develop psychological attachments to parties, and partisan lenses shape the way citizens perceive the world. By contrast, political parties in Peru struggle to establish party brands or packages of policy positions, and they can rarely provide cues or shortcuts to citizens. Moreover, according to LAPOP (2018/19), Peru is the third country in Latin America with the fewest respondents identifying with a political party (10.8%) only above Chile (10.7%) and Guatemala (10.2%).

Furthermore, our study was carried out early in the pandemic (May 2020) when Peruvian political elites were still struggling to understand the severity of the health emergency. Thus, COVID-19 policies had not been politicized yet. In the United States, the conservative media and some Republican leaders framed lockdown measures and mask mandates as a violation of people's freedom. Partisanship, therefore, was a salient predictor of attitudes toward COVID-19 policies (Allcott et al., 2020; Kushner Gadarian, Wallace Goodman, & Pepinsky, 2020; Utych, 2020). In Brazil, Calvo and Ventura (2021) report a similar finding, where supporters of President Bolsonaro (a right-wing politician who declared the pandemic a hoax) were less likely to perceive the COVID-19 pandemic as a risk to their health. However, there was no clear political cleavage shaping views on COVID-19 policies in Peru, especially early in the pandemic. The consensus at the time was that complying with public health recommendations was necessary to prevent the spread of the virus. In any case, since we implement a sensitivity test for hidden biases, we can assess whether the main conclusions of the study change based on unmeasured variables of different relevance.

Finally, we can discard the possibility that gender is correlated with partisanship or ideology in a way that could undermine our results. We use data from LAPOP 2018 to illustrate how gender is not a relevant factor predicting participants' ideological stances and partisanship. We use three dependent variables: self-identification on the left-right scale and sympathy for the two main parties in Peru: APRA and Fuerza Popular (Fujimorismo). We do not find evidence to claim that gender contributes to explaining these outcomes.

Table A7: Determinants of Ideology and Partisanship in Peru (LAPOP 2018)

	Ideology	APRA	Fuerza Popular
Female	-0.086	0.011	-0.009
	(0.133)	(0.008)	(0.006)
Education	0.012	-0.001	0.001
	(0.020)	(0.001)	(0.001)
Age	0.019***	0.0004*	0.001***
	(0.004)	(0.0002)	(0.000)
Urban	-0.210	-0.007	-0.004
	(0.161)	(0.009)	(0.007)
N	1,521	1,521	1,521

References

Allcott, H., Boxell, L., Conway, J. C., Gentzkow, M., Thaler, M., & Yang, D. Y. (2020). Polarization and Public Health: Partisan Differences in Social Distancing during the Coronavirus Pandemic *NBER Working Paper 26946*. Cambridge, MA: National Bureau of Economic Research.

Calvo, E., & Ventura, T. (2021). Will I get COVID-19? Partisanship, Social Media Frames, and Perceptions of Health Risk in Brazil. *Latin American Politics & Society, 63*(1), 1-26.

Dietz, H. A., & Myers, D. J. (2007). From Thaw to Deluge: Party System Collapse in Venezuela and Peru. *Latin American Politics & Society, 49*(2), 59-86.

Kushner Gadarian, S., Wallace Goodman, S., & Pepinsky, T. B. (2020). Partisanship, Health Behavior, and Policy Attitudes in the Early Stages of the COVID-19 Pandemic.

Levitsky, S. (2018). Peru: The Institutionalization of Politics without Parties. In S. Mainwaring (Ed.), *Party Systems in Latin America: Institutionalization, Decay, and Collapse*. New York: Cambridge University Press.

Levitsky, S., & Cameron, M. A. (2003). Democracy without Parties? Political Parties and Regime Change in Fujimori's Peru. *Latin American Politics and Society, 45*(3), 1-33.

Lupu, N. (2016). *Party Brands in Crisis: Partisanship, Brand Dilution, and the Breakdown of Political Parties in Latin America*. New York: Cambridge University Press.

Muñoz, P. (2019). *Buying Audiences: Clientelism and Electoral Campaigns When Parties Are Weak*. New York: Cambridge University Press.

Tanaka, M. (1998). *Los espejismos de la democracia: el colapso del sistema de partidos en el Perú* Lima: Instituto de Estudios Peruanos.

Tanaka, M. (2006). From Crisis to Collapse of the Party Systems and Dilemmas of Democratic Representation: Peru and Venezuela. In S. P. Mainwaring, A. M. Bejarano, & E. P. Leongómez (Eds.), *The Crisis of Democratic Representation in the Andes*. Stanford: Stanford University Press.

Utych, S. M. (2020). Messaging Mask Wearing During the COVID-19 Crisis: Ideological Differences. *Journal of Experimental Political Science*, 1-11.

Zavaleta, M. (2014). *Coaliciones de independientes: las reglas no escritas de la política electoral*. Lima: Instituto de Estudios Peruanos.

Zechmeister, E. J. (2015). Left-Right Identifications. In R. E. Carlin, M. M. Singer, & E. J. Zechmeister (Eds.), *The Latin American Voter: Pursuing Representation and Accountability in Challenging Contexts*. Ann Arbor: University of Michigan Press.