

Inequality and Support for Government Responses to COVID-19

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Abstract

Despite a rich literature studying the impact of inequality on policy outcomes, there has been limited effort to bring these insights into the debates about comparative support for government responses to the COVID-19 pandemic. We fill in this gap by analyzing rich survey data from six countries spanning different income levels and geographical locations—China, Italy, Japan, South Korea, the United Kingdom, and the United States—in April 2020, when most countries were facing their first surge in infections and designing their response efforts. We find that poorer individuals are less supportive of strict government responses than other groups, and that poorest individuals are least supportive. Furthermore, poorer individuals residing in more economically unequal countries are the least supportive of stringent policies. We also find that both economic and non-economic factors could affect the poor's decisions to support stringent government policies. These findings suggest that greater transfers to the poor may ameliorate their resistance, increase support for strict policies, and may reduce the potential deepening of social inequalities caused by the pandemic, given some recent evidence that the poor and the vulnerable are most affected by the pandemic. These findings offer relevant and implementable policy advice for the ongoing global fight against the pandemic.

Background

Why were some countries able to implement strict economic and social lockdowns on their citizens in an effort to thwart the spread of COVID-19, while other countries either chose to avoid such closures, or were unable to effectively implement and enforce restrictive measures? Government responses are regarded as essential in the fight against the pandemic but vary widely across countries.^{1,2} Differences between countries could determine success in limiting mobility, enforcing social distancing,³ and ultimately infection and fatality rates.^{4,5} During a time of crisis, these policy responses to the pandemic—including voluntary measures such as self-quarantines and wearing a mask—require strong support from all population groups to be effective. Nevertheless, few studies exist that test whether the richer and the poorer share similar levels of support for such government responses. We fill this gap by analyzing a six-country survey covering different income levels and geographical locations—China, Italy, Japan, South Korea, the United Kingdom, and the United States—in April 2020, when most countries were facing their first surge in infections and designing their response efforts. In particular, we argue that underlying levels of inequality were critical in constraining officials' choices when rapid responses could potentially thwart disaster.

Inequality and Pandemic Response

There is a deep literature in political economy studying the endogenous relationship between economic inequality and policy making. Clearly, choices that governments make regarding taxes, social welfare, immigration, and economic integration have differential effects on citizens and can lead to divergence in economic fortunes.^{6,7} On the other hand, inequality limits the space for policy options and severely

hampers policy implementation.⁸ Some citizens, due to their position in society and level of resources, may be either unwilling or unable to agree to government directives or abide by government regulations. Empirically disentangling this relationship is extremely difficult, because of the interplay between inequality and policy developments over time. Original institutions and policy choices shape the distribution of resources in society, allocating political power to some actors, who then use it to influence future institutional and policy choices.^{9,10}

Thus far, the balance of the literature has been on demonstrating how institutions affect inequality, but there is less evidence on how deep-seated structural inequality influences policy choices. Scholars have shown, however, that inequality is associated with lower levels of public good provision,^{11,12} including in healthcare.¹³ At the individual level, research demonstrates that high levels of inequality reduce trust in government institutions, undermining policy compromises and implementation.¹⁴ Citizens may be unwilling to make sacrifices if they are not convinced that authorities will compensate them for their efforts.^{15,16} Lower levels of education among poorer groups may exacerbate distrust, when the relationship between their sacrifice and country-level policy goals are not sufficiently clear.¹⁷ Related work on marginalized groups, which is associated with inequality, has shown that marginalized individuals are less trusting of government¹⁸ and less likely to comply with public health advisories.^{19,20}

The impact of inequality on policy choices is most critical in *hard times*, such as war, financial crises, or pandemics, when government leaders must quickly respond to the threat, but some individuals are either unwilling or unable to abide by government strictures.^{21,22} They may see the policies as placing an unfair burden on them relative to richer individuals, lack trust in the policy motivations, or the necessary measures may simply not be affordable due to low levels of wealth and savings, making it difficult to cushion the blow with consumption smoothing.^{23,24,25} Inequality also undermines societies' social fabric during such periods, creating group conflict and complicating coordinated efforts to combat health crises.^{26,27}

It is now quite clear that the severity of the COVID-19 pandemic differed dramatically across individual countries; however, debate remains about what factors are most responsible for the variance.²⁸ Disagreement is particularly contentious about the effectiveness of policy responses. While some countries were able to impose restrictive economic lockdowns on their populations and reduce infection and ultimately fatality rates, other countries either chose to avoid such closures, or were unable to effectively implement and enforce restrictive measures.^{1,2}

Inequality has been an important part of policy debates over COVID-19 responses measures. Poorer citizens were more likely to work in service sector jobs, such as restaurants and retail, which were the immediate victims of economic lockdowns. They had less accumulated savings and therefore were less likely to afford extended time away from work. They were also less able to transition to virtual work, either because of the nature of their occupation or because they lacked sufficient space and internet access.²⁹ Classification of many poorer workers as "essential employees" in super markets and delivery services

meant that they were more likely to be exposed to the disease.³⁰ Shutdowns of public services had a more severe impact on poorer communities, who were more likely to rely on public transportation and less likely to have private child care options. Among the very poorest, school closures not only endangered education prospects but also deprived children of free breakfast and lunches. In the United States, fine-grained data are used to demonstrate a K-shaped effect of COVID-19, where richer populations reduced expenditures and increased their income, while poorer citizens actually increased their expenditures as their income declined.³¹

We thus suggest the following hypotheses.

H1: Citizens in lower income strata were more likely to resist strict policies, voicing their disapproval, and shirking responsibilities under government orders.

H2: The discontent among poorer income strata should be most severe in countries with higher levels of inequality.

Once we can establish the validity of these two hypotheses, we go one step further and examine the underlying motivations for the relationship between inequality and support for government policies. Given our earlier review of the literature, we posit the next hypothesis.

H3: Poorer citizens were particularly afraid of the economic burden they would face and, to a lesser extent, non-economic factors (such as limits to leisure and family time).

Some macro-evidence on inequality and government policy stringency

To illustrate the potential for these relationships, Figure 1 uses a partial regression plot to study the relationship between stringency of country-level COVID-19 policies and inequality, holding constant countries' population, GDP per capita, and exposure to the disease. Stringency is measured by the Oxford Covid Government Response tracker program,¹ ranking countries' daily policy on a standardized scale ranging between 0 (not stringent at all) to 100 (highly stringent). We limit the range to the period between February 1st, 2020 after the disease had already been discovered outside of China, but before April 14th, 2020, the day before our survey data was initiated, and many countries were in the midst of their first surge and still designing their policy responses. The index is comprised of seven indicators of lockdown, such as school closures and restrictions in movement, which are consistent with our survey questions below. We measure inequality using the Solt database,³² which is considered to be the most consistent measure of cross-national inequality. The figure provides tentative evidence that countries with higher inequality chose less restrictive policies in their initial response to the crisis.

While the correlation demonstrated in Figure 1 is illustrative, there is a clear ecological inference problem. We cannot tell from whether it is the poor that resisted stringent policy at the outset of the crisis and thereby drove the relationship or whether richer groups in society were pushing back against strict lockdowns, knowing their resources allowed them to self-protect. To further test our theory, we move toward more fine-grained survey on individual-level reactions to lockdown policies in six countries.

Poorer quintiles support government responses less

We analyze individual data from a six-country survey to examine the extent to which citizens support their government's responses to the COVID-19 pandemic (see Methods section for discussion on the data and estimation method). Figure 2 presents our estimation results of citizens' assessments of eight government responses to the pandemic (see Appendix A, Table A.1 for full regression results). Overall, individuals in the four lower income quintiles are less supportive of strict government responses (Figure 2, panel A) than those in the richest (income) quintile (the reference category). The differences are statistically significantly different at the five percent level or lower. Furthermore, the poorer quintiles tend to be less supportive than the richer quintiles. The poorest quintile is 0.18 points less supportive than the reference category (the largest magnitude on the 1 to 5-point scale), followed by the second poorest quintile and middle quintile (0.13 and 0.15 less supportive respectively), and the second richest quintile (0.09 points less supportive).

For the specific government responses, the poorest two quintiles are less supportive than the richest quintile in shutting public transportation, limiting mobility outside the home, and forbidding mass gatherings. The estimated coefficients are nearly always significant at the 5 percent level. Together, these results support our first hypothesis that poorer population groups were more likely to resist strict policies, voicing their disapproval, and shirking responsibilities under government orders.

Further unpacking the estimation results for each country, Table A.5 in Appendix shows that the countries, where individuals in poorer quintiles provided the least support for government responses include China, Italy, South Korea, and the U.S. However, Japan and the U.K., do not follow this pattern, as these two countries have lower economic inequality than the others and Japan experienced a low COVID-19 infection rate (Table A.4).

To test the second hypothesis and explore the UK and Japan anomalies, we probe how inequality conditions the resistance of the poor to strict lockdown policies by interacting the income quintiles with a country's inequality level. The estimation results, shown in Figure 3, suggest that in countries with high Gini indexes, the second poorest quintile is strongly less supportive of government responses. To focus our presentation, we only consider in Figure 3 as our main dependent variable the overall assessment of government responses. But we also construct an aggregation index for the seven specific assessments using Principal Component Analysis (PCA) and alternative inequality measure from the World

Development Indicator database as a robustness check. The results are qualitatively similar and somewhat statistically stronger (see Appendix A, Table A.2 for full regression results)

We provide several additional robustness checks including potential multiple testing issues, alternative econometric models (including ordered logit models, different definitions of poorer income quintiles, and further controlling for country-level variables), and different measures of inequality and data source. These are discussed in more detail in Appendix B.

Mediating role of economic and non-economic factors

To shed more light on the mechanisms leading to the effects, we test whether economic and non-economic factors mediate the effect of income on support for government responses. We first regress individuals' self-reported assessment of several economic and non-economic consequences on the income quintiles. Table A.6 (Appendix A) shows that poorer people report more adverse effects of the pandemic. We subsequently regress individuals' overall assessment of the government response variable on their assessment of the economic and non-economic consequences. The results, offered in Table A.7 (Appendix A), show that individuals are less likely to support government responses if they report more adverse effects of outcomes, such as (permanent or temporary) job losses, enjoying less free time, and feeling more bored.

Using the results from Tables A.4 and A.5, we employ a causal mediation approach^{33,34} to estimate the indirect effects of the poorest income quintile on the overall assessment of government responses through several economic and non-economic outcomes that are caused by the pandemic. These results are consistent with recent evidence suggesting that poorer quintiles are also found to experience reduced expected own-labor income, less savings, and are less likely to change their behaviors, both in terms of immediate prevention measures against COVID-19 and healthy activities.^{35,36} Put differently, the indirect effects with these outcomes can help better explain the channels through which being in the poorest quintile leads to less support for government responses.

Figure 4 shows the estimated shares (in percent) of the indirect effects on the total effects of the poorest quintile. The estimation results suggest that the potential for permanent job loss is the most important variable, accounting for 9 percent of the total effects. This is followed by the variables in the following order: less pollution (7 percent), temporary job loss (6 percent), less savings (5 percent), and enjoying more free time (4 percent). The remaining variables (i.e., expense change, boredom, trouble sleeping, and others) contribute very little to the total effects. These results provide supportive evidence for hypothesis 3 that while economic factors represent more burdens for poorer citizens, non-economic factors also play an important role.

Discussion

We offer the first study that attempts to shed light on the complex relationship between inequality and support for government responses to the COVID-19 pandemic. Our findings using rich individual data from six countries (China, Italy, Japan, South Korea, the United Kingdom, and the United States) suggest that poorer individuals are likely less supportive of government responses, and poorest individuals are least supportive. Moreover, individuals in poorer quintiles residing in more economically unequal countries tend to offer even less government support.

In terms of the channels through which inequality can affect individuals' government support, we find that economic and, to a lesser extent, non-economic factors play important roles. These include having greater job security, savings, free time, and better living environments (with less pollution). An optimistic interpretation of our results is that these factors are amenable to compensation policies. Governments can gather more support from the poorer population groups through social protection measures that better preserve employment, that offer more employee benefits, or that simply improve the living environment. Offering more resources to the poor should not only result in their increased support for stringent efforts, but can also help reduce the potential deepening of social inequalities and reduced social trust caused by the pandemic.

Methods

We analyze individual data from a six-country survey to examine the extent to which citizens support their government's responses to the COVID-19 pandemic. This survey was implemented between April 15 and April 23, 2020 by Belot *et al.* (2020), covering 6,089 respondents from China, South Korea, Japan, Italy, the United Kingdom, and the four largest states in the United States (California, Florida, New York, and Texas). The data for each country are nationally representative. The sample size hovers around 1,000 observations for each country, ranging from 963 for South Korea to 1,055 for the U.S. The survey contains information on basic demographic variables of respondents, their income (measured in quintiles), their self-reported assessments on the economic and non-economic consequences as well as their support of the government's policy responses to the COVID-19 pandemic. First, an overall assessment of the government response to the pandemic is assessed with this question "Do you agree with the current approach taken by your government in response to the pandemic?"^[1] Second, survey respondents were asked to assess the effectiveness of the seven particular government measures, which correspond closely to the stringency index above.^[2]

- Shutting down schools
- Shutting down public transport
- Shutting down non-essential businesses
- Limiting mobility outside home
- Forbidding mass gatherings
- Introducing fines for citizens that don't respect public safety measures
- Requiring masks to be worn outside by everyone

Table A.3 in Appendix A presents the distribution of respondents' answers to the government's policy responses. Further comparisons of the distributions of age and gender in the survey to the official population figures are provided in Dang and Nguyen (2021).

To enrich analysis, we collect our own data on COVID-19 infection rates at the region level (82 regions) for the six countries. The COVID-19 infection rate is measured as the number of cumulative COVID-19 cases over 1000 people in each region by April 14, 2020 (just before Belot *et al.*'s (2020) survey started). The average COVID-19 infection rate is 1.04 per thousand, and ranges from 0.003 per thousand in Qinghai, China to 23.4 per thousand in New York, the U.S. For data on inequality, we mostly use data from the Solt (2019) database, but we also use some data from the World Bank Development Indicators (World Bank 2020) for robustness checks. Table A.4 in Appendix reports the means of these variables for each country.

To examine the association between income inequality and support of the government's responses to the COVID-19 pandemic, we estimate the following linear regression model with country fixed effects

$$Y_{ij} = \alpha + Income_Quintile_{ij}\beta + X_{ij}\gamma + Country_j\delta + u_{ij} \quad (1)$$

where Y_{ij} is a dependent variable indicating support of the government responses of individual i in country j . The control variables, X , include individuals' age and gender, urban residence, and a country's COVID-19 infection rate.

To shed more light on the mechanisms of impacts, we test whether economic and non-economic factors mediate the effects of income on support for government responses using the standard mediation approach (Baron and Kenny, 1986; see also Imai *et al.* (2010a) and Imai *et al.* (2010b)). We first regress individuals' self-reported assessment of several economic and non-economic consequences (mediator variables) on the income quintiles.

$$M_{ij} = \alpha_M + Income_Quintile_{ij}\beta_M + X_{ij}\gamma_M + Country_j\delta_M + \varepsilon_{ij} \quad (2)$$

where M_{ij} is a mediator variable of interest. The lower subscript M indicates the parameters in the mediator regression.

We subsequently regress individuals' overall assessment of the government response on the income quintiles and mediator variables.

$$Y_{ij} = \alpha_Y + Income_Quintile_{ij}\beta_Y + M_{ij}\theta_Y + X_{ij}\gamma_Y + Country_j\delta_Y + v_{ij} \quad (3)$$

The lower subscript Y indicates the parameters in the outcome regression, which controls for the mediator.

The indirect effect is estimated by the product of γ_M and θ_Y . We can compute the indirect effect as a percentage of the total effect, that is, $(\gamma_M * \theta_Y) * 100\% / \beta$ for each income quintile (β is the coefficient of *Income_Quintile* in equation (1)). We focus on estimating

the indirect effect of the poorest income quintile on the overall assessment of government responses through several economic and non-economic outcomes that are caused by the pandemic. Put differently, the indirect effects with these outcomes can help better explain the channels through which being in the poorest quintile leads to less support for government responses.

[1] The respondents could select one of the five options “1 = Strongly disagree”, “2 = Somewhat disagree”, “3 = Neither agree nor disagree”, “4 = Somewhat agree”, and “5 = Strongly agree.”

[2] The specific survey question is “How effective do you believe each of these measures is in reducing the spread of the epidemic?” The respondents were asked to select one of the following five answer options “1 = Not effective at all”, “2 = Slightly effective”, “3 = Moderately effective”, “4 = Very effective”, and “5 = Extremely effective.”

Declarations

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Figures

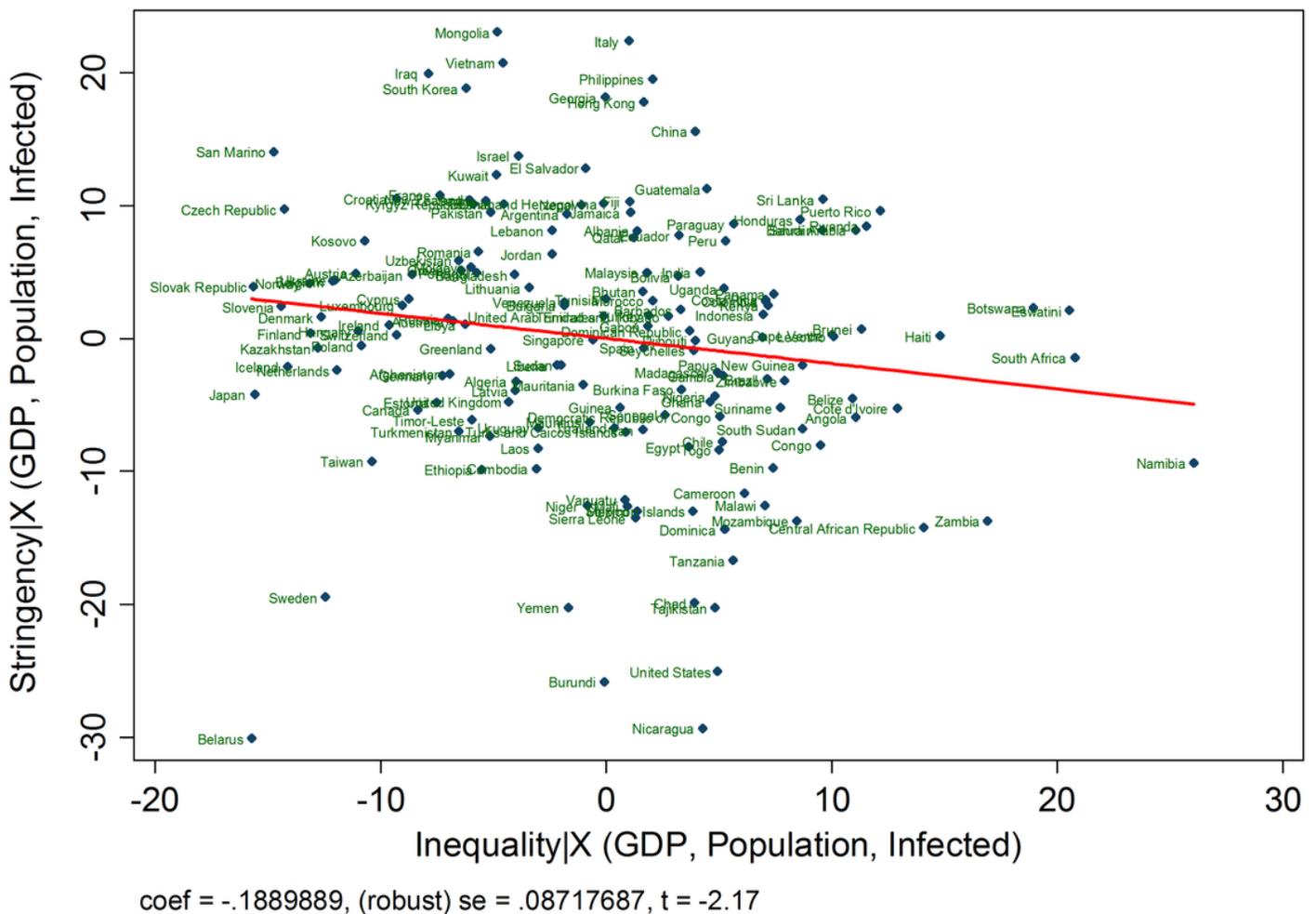
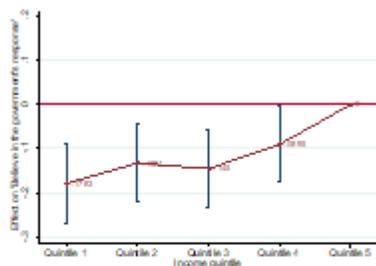


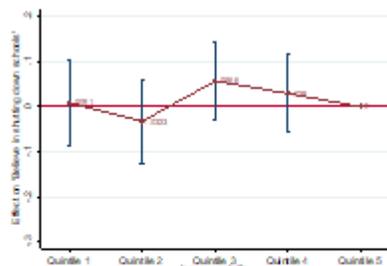
Figure 1

Adjusted Relationship between Inequality and Policy Stringency between February 1, 2020 and April 14, 2020

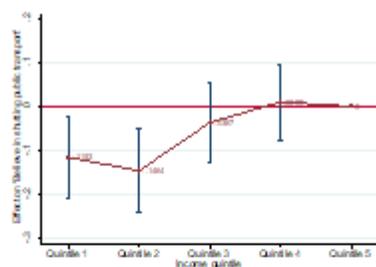
Panel A. Believe government response to the pandemic is effective



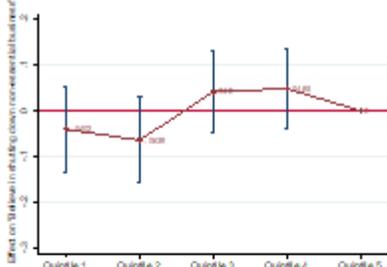
Panel B. Believe shutting down schools is effective



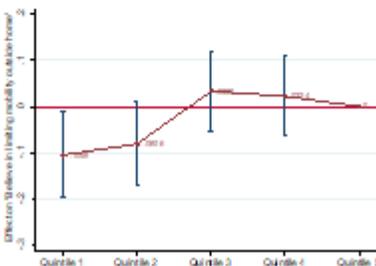
Panel C. Believe shutting down public transport is effective



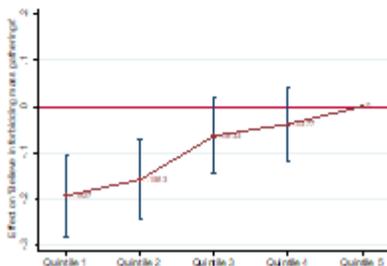
Panel D. Believe shutting down non-essential businesses is effective



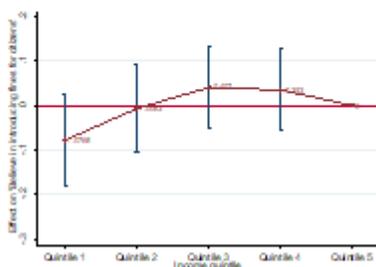
Panel E. Believe limiting mobility outside home is effective



Panel F. Believe forbidding mass gatherings is effective



Panel G. 'Believe in introducing fines for citizens that don't respect public safety measures'



Panel H. 'Believe in requiring masks to be worn outside by everyone'

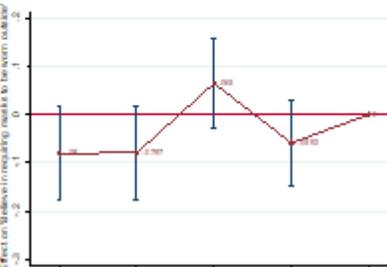


Figure 2

Estimated effects of income inequality on agreement to government's responses to the COVID-19 pandemic Note: This figure reports the coefficients of the income quintile of belief that their government's responses to the COVID-19 pandemic was effective. Quintile 5 (richest income quintile) is used as the reference category. Control variables include age groups, gender, urban dummy, country dummies, and COVID-19 infection rates. The full regression results are presented in Table A.1 in Appendix A.

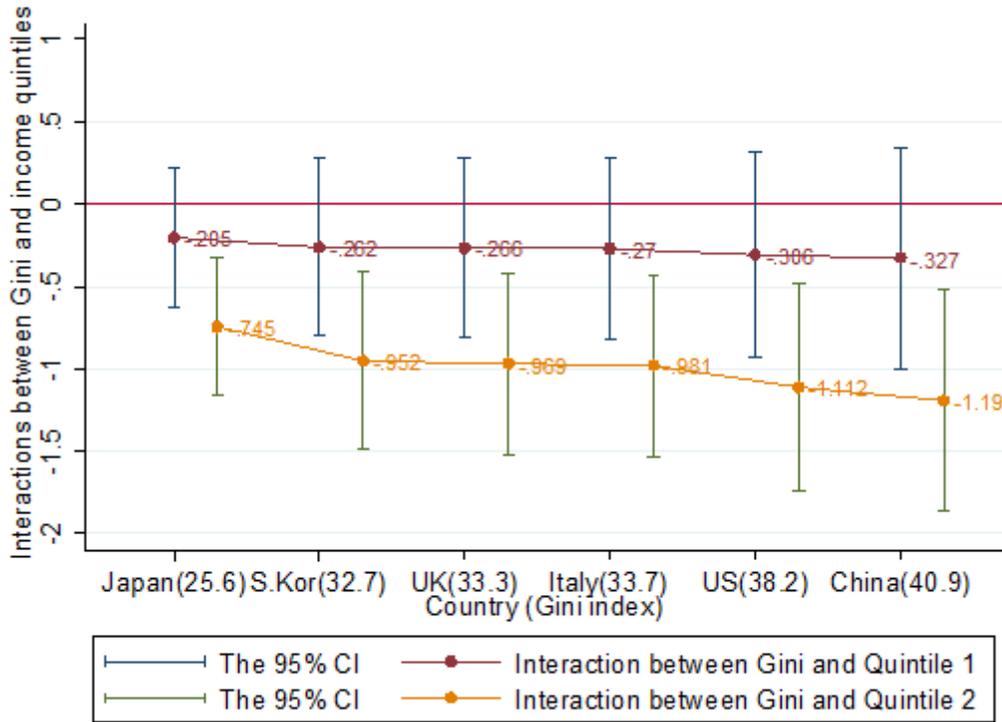


Figure 3

Estimated interactions between Gini index and income quintile Note: This figure presents the estimates of the interactions between Gini index and income quintiles in regressions of 'Believe in the approach of the government in response to the pandemic' and of index of the variables 'belief in different policies'. The full regression results are reported in Table A.2 in Appendix A.

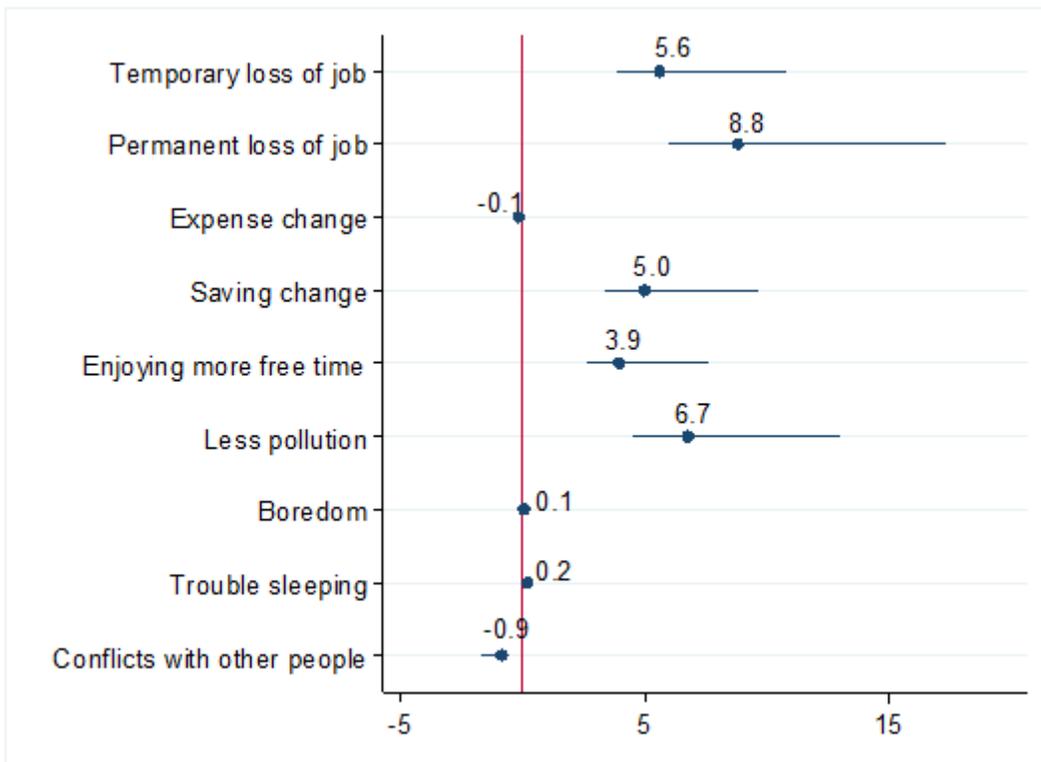


Figure 4

The ratio of the indirect effect to the total effect through several mediating variables (%) (point estimates and the 95% confidence interval) Note: Estimation using medeff command in Stata (Hicks and Tingley, 2011).

Supplementary Files

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- [Appendices.docx](#)