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A cure worse than the disease? Exploring the health-economy trade-off during COVID-19

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ABSTRACT


Nationwide lockdowns implemented by governments to confront the COVID-19 pandemic came at a high economic price. The article investigates citizens' evaluation of the trade-off between public health measures and their economic consequences. Using a vignette experiment conducted in June 2020 on 7,500 respondents in seven European countries the article tests whether perceived threats of the health and economic consequences of the COVID-19 pandemic affect citizens' preferences for strict or mild lockdown measures. Findings show that European citizens tend to prefer strict measures protecting public health despite their damage to the economy. Even individuals more concerned about the pandemic's economic impact do not prefer milder restrictions. Sociodemographic factors only indirectly affect public preferences, through perceived threats. Additionally, findings show that trust in experts and political orientations matter. These results resonate with previous research showing that public opinion in hard times is likely to be guided by risk perceptions and subjective attitudes.

KEYWORD COVID-19; policy preferences; public opinion; risk perceptions; survey experiment

The COVID-19 pandemic poses an unprecedented challenge to decision making in contemporary representative democracies. Handling the pandemic is a collective action problem as the spread of the virus could only be contained if individuals follow strict hygiene rules and physical distancing. Meanwhile, given that coordination among the entire populations is challenging, if not impossible, this crisis also represents a democratic dilemma because national governments had to enforce 'war-style' confinement measures that harshly restricted civil liberties and damaged national economies.

In the early weeks of the pandemic, the public in various countries was highly supportive of the social confinement measures implemented by their

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national governments, commonly referred to as ‘lockdowns’ (Bol *et al.* 2021; Sabat *et al.* 2020). However, when it became clear that these policy decisions stalled the economy, hints that people were becoming more impatient to re-start economic activities began to appear (Fetzer *et al.* 2020). Against this background, how does the dual threat that COVID-19 poses to public health and to the economy affect citizens’ attitudes towards restrictive measures implemented by their governments? In this article, we aim to investigate how citizens evaluate this trade-off between protecting public health and limiting the negative economic consequences concerning their executives’ policy responses to the COVID-19 crisis.

The COVID-19 crisis represents a unique opportunity to study citizens’ policy preference formation in ‘hard times’ (Bermeo and Bartels 2014). While several recent papers have analysed how general levels of public support for national governments changed since the outbreak of the pandemic (among others Altiparmakis *et al.* 2021; Bol *et al.* 2021; Leininger and Schaub 2020; Merkley 2020; Schraff 2020), only a few studies have explored how citizens evaluate governments’ particular policy responses (Chorus *et al.* 2020; Hargreaves Heap *et al.* 2020; Tepe *et al.* 2020). To investigate which policy measures citizens would prefer to see adopted in their country to cope with the multifaceted consequences of the COVID-19 pandemic, we use a vignette experiment conducted in seven European countries in June 2020. Respondents were presented with mock descriptions of government responses to the crisis in which we have manipulated the trade-off between stepping-up lockdown measures to contain the spread of the virus and save lives, even at the expense of the economy, and relaxing social confinement measures in order to safeguard the economy despite potential consequences on public health. Furthermore, policy profiles also varied according to the main target of the health measures, all the citizens or most vulnerable groups only, and the target of the economic measures, namely the country’s economy in general or young people’s opportunities. The vignette experiment is nested in an original cross-national survey which asked respondents a series of questions tapping sociodemographic characteristics and subjective attitudes that allow us to explore which individual factors contribute to explaining citizens’ different attitudes towards the trade-off between protecting public health and limiting economic losses.

As our main theoretical approach, we focus on Risk Perception Theory (RPT) which is employed to study attitudes and behaviours in times of crises that are characterised by a wide agreement on their exogenous causes, but imply multiple health, political, economic, and social consequences (Albertson and Gadarian 2015; Stoutenborough *et al.* 2015). In line with this theory, we postulate that while being concerned with the health consequences of the COVID-19 increases the likelihood to support

strict lockdown measures, those who are mostly concerned with the consequences of the COVID-19 pandemic on the economy should prefer milder restrictive measures. The role played by risk perceptions is evaluated against other traditional predictors of policy attitudes, such as sociodemographic factors, general political orientations, but also trust in government and in experts/scientists, which gain importance during health crises. Our empirical results show that even those citizens who are mostly concerned with the economic consequences of the COVID-19 are not more likely to support milder restrictive measures. These findings confirm a high support for the strict nationwide lockdowns implemented across Europe, already detected in a few previous studies (Chorus *et al.* 2020; Sabat *et al.* 2020). Furthermore, we inquire into how risk perceptions and policy attitudes are related to usual-suspect sociodemographic factors associated with health and economic vulnerabilities. We show that sociodemographic factors such as working and income conditions, age, or having children play a significant role in what regards risk perceptions, but only an indirect one when it comes to policy preferences. With regard to political orientations, while trust in government is not significantly associated with preferences for strict or mild policies, those who trust experts and scientists tend to prefer strict lockdown measures. Finally, ideology also plays a role in explaining citizens' policy preferences. While left-wing respondents tend to prefer strict measures, right-wing respondents tend to prefer milder policies.

The article is structured as follows. The next section reviews recent contributions on the political consequences of the COVID-19, explains the main theoretical approaches the literature provides to explain citizens' evaluations of public policies in hard times, and introduces the research hypotheses that have guided our empirical analyses. The third section introduces the design of the vignette experiment and the data collection procedure, and describes the main variables used in the empirical analyses. The fourth section presents our main results, followed by a concluding section.

Evaluating government policy decisions in hard times

Contributions to existing research on COVID-19

Most of the recent studies on the political consequences of the COVID-19 crisis show that, with the deepening of the pandemic, institutional trust and public support for the incumbent governments have increased but disagree on which causal mechanisms can explain this trend. Using longitudinal survey data Bol *et al.* (2021) and Esaiasson *et al.* (2020) demonstrate that institutional trust and support for the incumbent

government increased since the beginning of the crisis because citizens retrospectively evaluate the policies adopted and express positive judgments of the government performance. In contrast, Baekgaard *et al.* (2020) and Schraff (2020) illustrate that the severity of the pandemic rallied people around political institutions. Collective angst in the face of exponentially rising COVID-19 cases depresses the usual cognitive evaluations and leads citizens to rally around existing institutions as a lifebuoy.

Furthermore, examining other factors that may have affected public attitudes towards government performance, Merkle *et al.* (2020) show that support for the government increased because Canadian political elites and the public express a unique cross-partisan consensus on policy responses to the crises. On the contrary, Gadarian *et al.* (2021) and Grossman *et al.* (2020) demonstrate that partisanship is the crucial factor explaining support or opposition to social confinement measures in the US. Finally, Amat *et al.* (2020) provide evidence that exposure to the COVID-19 has diminished citizens' trust in government and support for democratic governance. The pandemic caused a switch of the mass public preferences towards technocratic decision-making instead.

To the best of our knowledge, by now only three studies have a focus similar to ours in investigating which positions citizens take on the trade-off between protecting public health and limiting economic downturns linked to lockdown policies. Tepe *et al.* (2020), through two experiments on priming and framing fielded in Germany during the first week of lockdown, demonstrate that support for the maximalist human life protection policy was moderately lower when traded against loss in civic freedom, while it was considerably lower when traded against potential economic losses caused by the lockdown policies, particularly for younger respondents. Through a survey experiment conducted in the UK and the US, Hargreaves Heap *et al.* (2020) show that the majority of respondents in the two countries tend to evaluate health more positively than wealth. However, the treatment effects administered to respondents suggest that the bigger the income loss and the less likely are these losses to have been anticipated, the more likely respondents accept lifting the restrictive measures, changing their relative evaluation of health over wealth. Finally, Chorus *et al.* (2020) by conducting a discrete choice experiment in the Netherlands explore whether Dutch respondents were willing to trade the health effects of the lockdown against other economic and social effects. Findings indicate a large heterogeneity within the population in terms of the weights attached to various policy impacts: while some groups appear to weigh all impacts, other groups appear to put much weight on some impacts while ignoring other effects.

Following the studies reviewed here, our study provides further important contributions to our knowledge of the formation of public attitudes towards policymaking during the COVID-19 crisis. First, while the extant literature¹ relies on single-country studies, we have conducted a vignette experiment in seven European countries: France, Germany, Italy, the Netherlands, Spain, Sweden and the United Kingdom (UK). The choice of adopting a cross-national research design allows us to consider policy preferences more widely given the uneven distribution of the pandemic, the heterogeneity in the conditions of the national economies before the crisis, and the different government responses to the crisis (Hale *et al.* 2020). All these aspects may have affected how individuals express their policy preferences. Second, we have not conducted our research during the first peak of the pandemic when citizens' attitudes towards government responses might have been biased by the high contagiousness and the soaring death toll in their countries, and the economic consequences might not have yet been fully apparent. On the contrary, we have surveyed Europeans in June 2020 when most of the countries have already relaxed – or were about to relax – the stricter social enforcement measures and respondents have had time to evaluate retrospectively the policies implemented by their government. Third, our vignette experiment is nested in a survey that has tapped not only respondents' sociodemographic characteristics but also their political orientations and various subjective attitudes, such as perceived health and economic threats and trust in different institutions and actors. This design allows us to conduct a systematic investigation of which factors are associated with different policy preferences on the trade-off between protecting public health and reducing economic damage.

Explaining policy preferences in times of crisis

On the one hand, the COVID-19 pandemic consisted of a sudden and imminent public health threat that demanded fast policy responses by national executives which partially bypassed the traditional channels of democratic decision making. On the other hand, once implemented, these policy decisions produced highly detrimental political, social, and economic side-effects that might have affected citizens' preferences for these measures and their evaluations of government performances.

Two main streams of literature are particularly helpful for investigating citizens' preferences for the trade-off between these two threats coming from the COVID-19 pandemic: protecting public health by limiting the number of fatalities and infections, and preventing economic losses by regulating the closure of economic activities and providing economic

reliefs to peoples and companies that cannot work. First, there is the general decision-making literature focussing on the role of emotions in preference formation (Albertson and Gadarian 2015; Epstein 1994, Loewenstein 1996; Stoutenborough *et al.* 2015). Secondly, there are those studies that focus specifically on the impact of major threats and shocks on public opinion formation (Bartels 2014; Hetherington and Nelson 2003; Margalit 2019; Ruiz-Rufino and Alonso 2017) or investigate how citizens react to unilateral actions taken by their governments during major crises (Ashworth *et al.* 2018; Bechtel and Hainmueller 2011; Christenson and Kriner 2017; Healy and Malhotra 2009).

Risk Perception Theory (RPT) is particularly relevant for the purpose of our study (Albertson and Gadarian 2015; Liu *et al.* 2019; Stoutenborough *et al.* 2015; Van der Linden 2015). This theoretical approach argues that emotions are a central feature not only of social experience, but also of political experience because they influence political thoughts and motivate behaviour. In times of crisis, especially when there is an imminent threat of bodily harm, if not death, emotions like fear, anger and anxiety play a pivotal role in shaping public attitudes towards the government and how citizens evaluate policy responses to the crises (Albertson and Gadarian 2015; Stoutenborough *et al.* 2015). Anxiety occurs when individuals appraise a situation not only as being unpleasant, but also highly threatening, uncertain and out of control (Lerner and Keltner 2000, 2001). Anxiety is not merely a threat to a disliked consequence but also a reaction to a perception that a situation poses a threat to one's own well-being. Anxious individuals are motivated to avoid danger, seek protection and create a safer environment. Albertson and Gadarian (2015) argue that citizens may cope with political anxiety in several ways, such as seeking information on how to avoid harm, endow trust in government, as also the 'rally-round-the-flag' approach predicts (Hetherington and Nelson 2003; Porat *et al.* 2019), and support protective public policies.

We focus on this last mechanism by postulating an association between perceived threats coming from the COVID-19 pandemic and support for restrictive measures. Of course, the spread of a previously unknown and very contagious virus posits an imminent threat for the health conditions of all citizens. Several studies confirm that the perceived risk for health is very widespread across and within countries and is associated with a high support for the restrictive measures enforced by national governments (Dryhurst *et al.* 2020; Sabat *et al.* 2020). However, in the first wave of the pandemic when pharmaceutical therapies and vaccines were still not available, the prolongation of the restrictive measures, ranging from 'stay at home' recommendations to nationwide lockdowns, which represented the only effective response to spread of the virus, posits other relevant threats to citizens. Several studies demonstrate that the COVID-19

pandemic has increased citizens' economic anxiety (Binder 2020; Fetzer *et al.* 2020). Unlike regular economic downturns which begin with a moderate but accelerating decline in economic activity, the arrival and rapid global spread of the coronavirus poses a rare, sudden shock. In the wake of such infrequent and challenging events people have difficulties in updating their belief about the future. Therefore, against this background we advance a dual research hypothesis that states as follow:

HP1.1: *The stronger the perceived health threat coming from COVID-19, the higher the probability of preferring strict lockdown policies.*

HP1.2: *The stronger the perceived economic threat coming from COVID-19, the higher the probability of preferring mild lockdown policies.*

We acknowledge that health and economic perceived threats should not be considered as alternative, but rather overlap and reinforce each other. Sabat *et al.* (2020) clearly show that individuals can be worried about both health and the economy. Fetzer *et al.* (2020) demonstrate that perceived risk of mortality and contagiousness is associated with citizens' economic worries about the aggregate economy and their personal economic situation. To further investigate the association between this dual perceived threat and preferences for strict or mild lockdown policies we, first, disentangle the threat for personal and public health, on the one hand, and the threat for national economy and the personal financial situation on the other. Secondly, we inquire into how more vulnerable sociodemographic categories with regard to the health and economic consequences of the pandemic are associated with both threat perceptions and policy preferences.

Besides risk perceptions, various political attitudes might affect citizens' policy preferences on the trade-off between health and wealth. To be effective any kind of policy initiative should rely on a minimum amount of trust in those who take decisions. This is particularly true in times of crisis when governments are forced to take fast and unilateral policy responses that often bypass the traditional channels of the democratic policy-making process. The 'rally-round-the-flag' effect was firstly introduced to explain why in presence of exogenous shocks that harm citizens' lives, such as wars or terrorist attacks, citizens tend to rally to their government as a symbol of national unity and support its policy response to the crises (Hetherington and Nelson 2003; Porat *et al.* 2019). The COVID-19 pandemic presents most of the characteristics of those crises in which the 'rally-round-the-flag' effect can be applied: a cause that is exogenous to the government, an imminent bodily harm, and elites' consensus on the necessity to take fast policy responses (Baekgaard *et al.* 2020; Merkley *et al.* 2020; Schraff 2020). Therefore, we expect that those

who trust the government are more likely to support its decisions to cope with the consequences of the COVID-19 pandemic, irrespective of the side-effects on the other side of the trade-off between protecting public health and safeguarding economic losses.

H2: *The more citizens trust the government, the higher the probability of supporting the policy initiatives taken by their government.*

In our sample we can observe a high heterogeneity in the policy initiatives that different countries took to face the first wave of the COVID-19 pandemic. While Southern European countries, such as Italy and Spain, adopted nationwide lockdowns, Northern countries like the Netherlands and Sweden enforced milder measures and were initially oriented towards mitigation through herd immunity. As Sabat *et al.* (2020) show, support for restrictive measures was higher in those countries in which governments implemented stricter rules.

We also expect that citizens' policy preferences with respect to the health-economy trade-off is associated with their trust in experts and scientists that have assumed a prominent role in advising governments in the management of the crisis. In those crises in which the source of harm is exogenous from politics citizens tend to trust more those experts that can provide effective solutions. While in other types of crises, such as wars, economic downturns, or political crises it is more difficult to find experts on the problem at hand, in the COVID-19 pandemic scientists and doctors played a crucial advisory role as the ones with the expertise on which measures are more effective than others. Even if the agreement was not unanimous in the scientific community, most scientists around the world, following the prescriptions of the World Health Organisation (WHO), considered nationwide lockdowns as the most effective measures to take during the first wave of the pandemic.

HP3: *The more citizens trust experts and scientists, the higher the probability of preferring strict lockdown policies.*

Finally, we expect that individuals' commitment to a particular ideological leaning should affect the way in which they feel themselves threatened by the COVID-19 pandemic and how they evaluate government's initiatives (Conway *et al.* 2020; Gadarian *et al.* 2021). In terms of political beliefs, individuals with left-wing orientations are traditionally more in favour of a proactive role of the state in providing citizens' wellbeing in the name of solidarity. Thus, we expect that they are more likely to support all those policy initiatives necessary to protect the health of all citizens even if these can damage the national economy. This expectation is reinforced by an experiential motive by the fact that the social

categories that traditionally support leftist parties, such as public and private employees, are less affected by the closure of the economic activities and have an easier access to economic relief. On the contrary, right-wing individuals are traditionally more in favour of *laissez-faire* and so less prone to accept limitations to economic freedom. Furthermore, entrepreneurs and self-employed, those categories that usually support right-wing parties, have been hardly hit by the limitations imposed to the economic activities and have less access to economic relief. Thus, we expect that citizens with right-wing orientations are more likely to support milder policy initiatives that can limit the economic losses.

HP4: *While left-wing individuals are more likely to support strict lockdown measures, right-wing individuals are more likely to support mild lockdown measures.*

Data and the experimental design

In order to study the citizens' evaluation of the trade-off between public health measures and their potential economic consequences, we use a conjoint design in the form of a choice and rating based factorial vignette study. Conjoint designs are a form of survey experiments widely used in psychological, sociological, and more recently, political science research and are ideal for our purposes as they enable us to examine respondents' preference for and evaluations of various hypothetical scenarios (so-called vignettes) in which combinations of factors/characteristics are varied randomly. Survey experimental designs in general are considered to achieve the internal validity of classic experimental studies due to randomisation of factors while enhancing the external validity of these by affording the same sampling strategies as those of surveys (Aguinis and Bradley 2014). Furthermore, in comparison to classic survey experiments, conjoint analysis allows us to estimate the causal effects of multiple treatment components, rather than a single treatment, and assess several causal hypotheses simultaneously (Hainmueller *et al.* 2014).

For the factorial vignettes used here, participants were presented with mock descriptions of government responses to the coronavirus crisis in which the trade-off between stepping-up health measures at the expense of the economy or relaxing health measures in order to safeguard the economic growth were manipulated. Since the multifaceted character of the COVID-19 crisis introduced competing threats and trade-offs in the health and economic domain, at both a personal and a societal level, we designed the experiment in a way such that the economic and health aspects are tied and presented as trade-offs (see Table 1, factor F1 integrated variation on both the health and economic aspects). The same

Table 1. Experimental design.

Factor	Level 1	Level 2
	<i>The government adopts [...]</i>	
F1: Health Measures	F1L1. strict <i>health measures to protect [...]</i>	F1L2. mild
F2: Target of Health Measures	F2L1. all citizens	F2L2. the most vulnerable citizens in particular
	<i>,[...]</i>	
F1: Economic measures	F1L1. even if this worsens <i>[...]</i>	F1L2. in order to safeguard
F3: Target of Economic measures	F3L1. the country's economy in general	F3L2. young people's opportunities in particular

Note: The economic measures are tied to health measures, resulting effectively in the same factor (F1) being manipulated. Therefore, economic measures do not contribute to increase the number of potential vignettes administered to respondents.

descriptions also vary according to targets of both health (citizens in general or vulnerable citizens) and economic measures (the economy in general or young people's opportunities) (see Table 1, factors F2 and F3). Manipulating these factors resulted in 8 possible policy scenarios – this study's universe of vignettes.² Out of these 8 scenarios, each survey respondent was randomly assigned with two choice tasks between pairs of scenarios (hence a total of four hypothetical policy situations). A policy scenario as presented in Table 1 would have the following wording: 'The government adopts strict health measures to protect all citizens even if this worsens the country's economy in general.' Respondents were instructed to not only give a numerical rating representing their degree of preference for each of the policy scenarios on an 11-point scale, but also to choose a favourite scenario in each of the two-choice tasks administered to them. A complete description of the 8 vignettes with the full text assigned to the respondents can be found in Online appendix A7.

The data for this study was collected as part of a survey conducted in seven countries (France, Germany, Italy, the Netherlands, Spain, Sweden and the United Kingdom) in the framework of the SOLID research project 'Policy Crisis and Crisis Politics, Sovereignty, Solidarity and Identity in the EU Post-2008'.³ Interviews were administered between the 5th and the 22nd of June, 2020 on national samples obtained using a quota design based on gender, age classes, macro-area of residence (NUTS-1), and education. The total sample size for the survey was 7,579, with national sample sizes varying between 1,033 and 1,169.⁴ Within the wider questionnaire, the conjoint design was also randomised with other COVID-19 related questions in order to avoid question order bias. Furthermore, the COVID-19 battery of items was presented at the beginning of the questionnaire in order to minimise response fatigue. The randomisation of factors and levels resulted in a fairly balanced assignment of all policy scenarios across the experiments.⁵

Results

Factor importance and heterogeneity

In order to understand which policy characteristic is considered relatively more important, we estimated individual-level part-worth utilities for each factor using a hierarchical Bayes (HB) method.⁶ The results show that all three factors had significant coefficients, which means that respondents did consider them when choosing a policy profile (see Table 2). In terms of relative importance, people consider the target of the economic measures as the most important feature, followed by the strictness of health measures, and then the target of health measures. The standard deviations indicate the amount of preference heterogeneity among the respondents. The trade-off between the strictness of the health measures and its economic effects, the core of our experimental design, was undoubtedly the most divisive feature. In contrast, the targets of the health and economic measures exhibit the least heterogeneity among the three, meaning that there is not much trade-off going on between protecting the young people's future and worsening the economy in general, or between vulnerable citizens and citizens in general, as most respondents prefer policies aimed at the general population. As we observe the least amount of variation for the second and third policy characteristics in our experiment, and as the second characteristic also had a very low relative importance, the analysis reported in the next section will focus primarily on analysing the strictness of the health measures.

General policy profile choice

Our main goal is to estimate what characteristic of a policy scenario causally increases or decreases the appeal of that scenario, when varied independently of the other attributes included in the design. For this reason, we use the Average Marginal Component Effect (AMCE) introduced by Hainmueller *et al.* (2014). In this section and the next ones, we calculate the effect of each factor in our design on the choice of

Table 2. Relative importance and standard deviations of policy characteristics.

Factor	Mean of coefficient	SE	95% credible interval	Relative importance	Standard deviations
Strictness Health Measures	0.112	0.022	[0.069, 0.156]	26.6%	0.890
Target Health Measures	0.036	0.016	[0.003, 0.667]	8.6%	0.472
Target Economic Measure	-0.273	0.017	[-0.306, -0.241]	64.8%	0.351

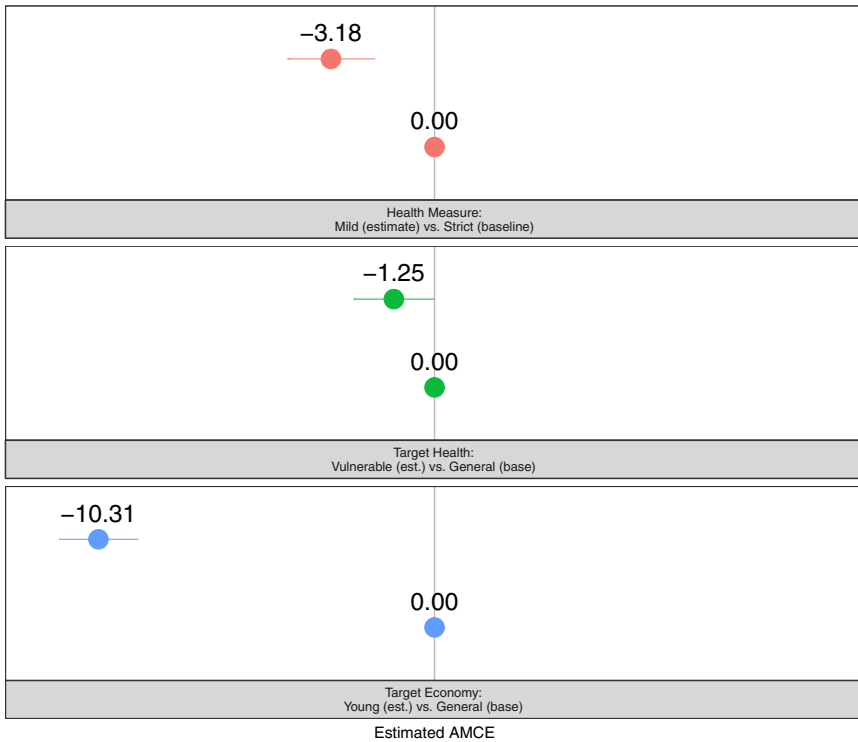


Figure 1. Main effects of each feature on policy scenario choice.

Note: Negative estimates (left of the dotted vertical line) indicate preferences for strict measures, positive estimates (right of the dotted vertical line) indicate preferences for mild measures.

policy scenarios, rather than on their rating, since we are mostly interested on respondents' ultimate choice between policy profiles.⁷

Figure 1 shows the AMCEs for each level of each of our factors on policy scenario choice.⁸ We can notice that, in general, mild health measures as opposed to strict health measures significantly decrease the probability of that particular policy scenario being chosen with about 3.18 per cent on average. Having particular targets of both the health measures (i.e. most vulnerable people, with a decrease of 1.25 per cent on average) and the economic measures (i.e. young people, with a decrease of 10.31 per cent on average) also decreases the probability of the policy scenario of being chosen. This result indicates that, contrary to hints that people were becoming more impatient and asking for a relaxation of the lockdown measures to re-start the economy, health concerns were still very much on people's mind in June, when the number of infections and casualties decreased drastically compared to the first

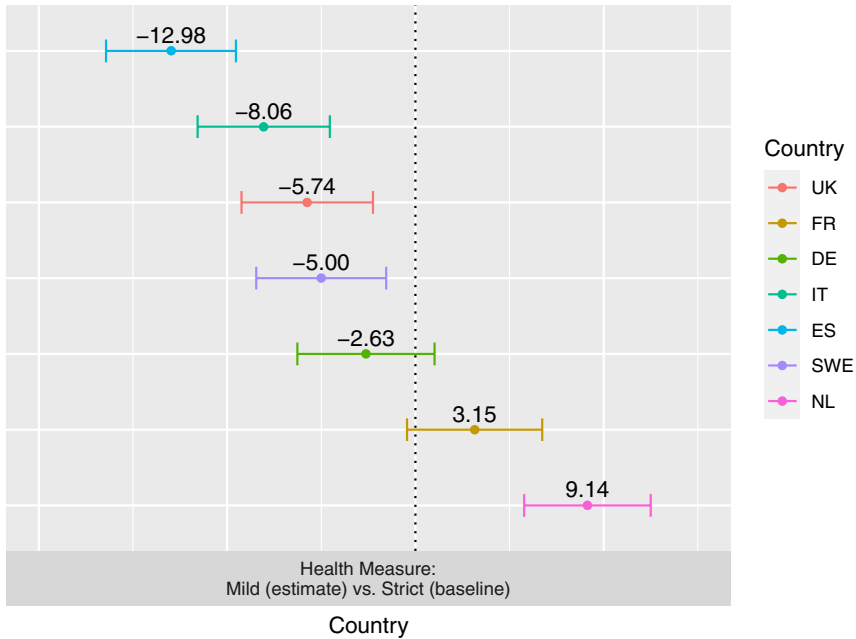


Figure 2. Difference between countries in health vs. economy policy preferences.

Note: Negative estimates (left of the dotted vertical line) indicate preferences for strict measures, positive estimates (right of the dotted vertical line) indicate preferences for mild measures.

peak of the pandemic in April. On average, the cure does not appear to be stronger than the disease for most people.

Conditional AMCEs allow us to assess the average effects of policy characteristics in the vignette conditional on respondents' characteristics or attitudes measured in the survey.⁹ Therefore, while on the aggregate respondents preferred stricter lockdown measures, there are some significant differences across the countries included in our study. While our sample of seven countries does not allow us to study contextual differences across countries in a more systematic fashion, we do interpret these difference in light of the measures adopted in these countries. In particular, the Netherlands goes against the overall trend, as respondents here significantly preferred milder health measures aiming to safeguard the economy, with such measures being 9.14 per cent more likely to be chosen by respondents (see Figure 2). This is unsurprising given that by the time our study was fielded, the Netherlands did not adopt a strict lockdown as in Southern European countries, such as Italy or Spain, and the initial government response to the pandemic was oriented towards achieving a controlled spread of the virus with a focus on herd immunity (Hoekman *et al.* 2020). By contrast, in line with Sabat *et al.*

(2020) findings, respondents in Spain and Italy, the earlier and hardest hit countries, were the ones most in favour of strict lockdowns even at the expense of economy.

Risk perceptions

In [Figure 3](#) we compare the policy preferences of those who consider the pandemic more or less threatening for their personal/national economic situation and those who see the pandemic as more or less threatening for their personal/public health situation.¹⁰ Unsurprisingly, the results suggest that those who feel threatened about the health consequences of the COVID-19, at both the egotropic and the sociotropic level, significantly prefer stricter lockdown measures (in line with H1.1). Nevertheless, going against H1.2, even those that are more threatened by the economic aspect still prefer stricter lockdowns (though not significantly) suggesting that the two threats might overlap significantly, and they might not matter in an equal amount, at least at the end of the first wave of the COVID-19 pandemic. The size of the effect of the two competing threats is also very disproportionate. We can see that the intensity of the effect of health threat (designing a mild lockdown measure decreases the probability of such a policy being preferred by 12.82 per cent) is very large compared to the intensity of the effect of the economic threat (a mild measure also decreases the probability of such a policy being preferred by 5.40 per cent). The results show a similar effect with regards to sociotropic threats, with small differences in the effect size. Considering that the health aspect of the COVID-19 pandemic has been heavily stressed in the public discourse, and probably more so than the economic aspect at the beginning of the crisis, these results show that, at least by the time our survey went into the field in June 2020, in people's mind the cure was not considered worse than the disease.

Since these results suggest a high overlap between those that are threatened economically and those that are threatened in the health domain (this overlap is confirmed in [Figure A6](#) in the [Online Appendix](#)), we further explore the relationship between these various types of threats by exploring sociodemographic factors likely to be associated with specific vulnerabilities in the health and economic domains during the COVID-19 crisis and their effect on lockdown preferences. Thus, we analyse whether these sociodemographic factors have a direct, indirect, or moderating effect on the health vs. economy trade-off.

[Figure A7](#) in the [Online Appendix](#) shows that sociodemographic characteristics have little to no direct effect on lockdown preferences. While there is a general tendency for older respondents (above 60 years old) to prefer stricter lockdown measures compared to younger cohorts, these

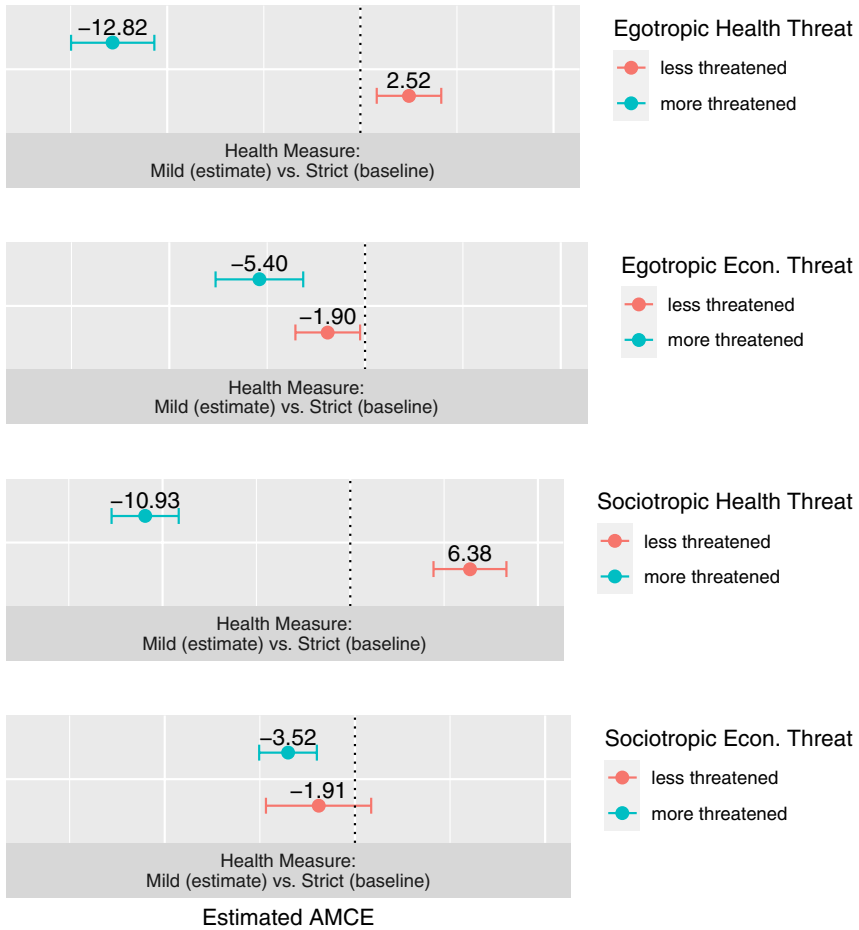


Figure 3. Effects of threat perceptions effects on health vs. economy policy preferences.

Note: Negative estimates (left of the dotted vertical line) indicate preferences for strict measures, positive estimates (right of the dotted vertical line) indicate preferences for mild measures.

differences are not significant. The same holds with regards to changed working conditions and income loss due to COVID-19, having children, or gender. By and large, our results suggest that under a multifaceted crisis, tried-and-tested usual suspect indicators of vulnerability do not appear to play a direct role in shaping people’s preferences for mild or strict lockdowns. Additionally, interaction effects between sociodemographic factors, countries and threat perceptions were also tested in Figures A11 to A14 in the Online Appendix with null results, suggesting no moderation effect.

Table 3. The effect of sociodemographic characteristics on threat perceptions.

	<i>Dependent variable: Threat perceptions</i>			
	Ego. Health	Ego. Econ.	Socio Health	Socio Econ.
	(1)	(2)	(3)	(4)
Age 35–60	0.137*** (0.646, 0.066)	0.050*** (0.245, 0.066)	0.016 (0.068, 0.061)	0.062*** (0.372, 0.072)
Age > 60	0.177*** (0.816, 0.078)	-0.052*** (-0.279, 0.081)	0.013 (0.057, 0.074)	0.066*** (0.399, 0.090)
Female	0.060*** (0.269, 0.051)	0.026* (0.133, 0.055)	0.087*** (0.372, 0.050)	0.049*** (0.311, 0.061)
Income major loss	0.088*** (0.396, 0.080)	0.350*** (1.611, 0.082)	0.038* (0.162, 0.077)	0.010 (0.059, 0.094)
Unemployed	0.095*** (0.429, 0.072)	0.131*** (0.657, 0.077)	0.067*** (0.288, 0.069)	0.026* (0.168, 0.084)
Worked remotely	0.031 (0.137, 0.080)	0.003 (0.015, 0.085)	0.013 (0.054, 0.075)	-0.002 (-0.013, 0.088)
Stopped working	-0.010 (-0.046, 0.090)	0.081*** (0.397, 0.094)	0.024 (0.102, 0.087)	0.025 (0.161, 0.107)
Children	0.008 (0.035, 0.061)	0.048*** (0.241, 0.064)	-0.002 (-0.008, 0.059)	-0.003 (-0.019, 0.072)
Constant	-1.374*** (0.100)	-1.785*** (0.108)	0.092 (0.094)	1.265*** (0.118)
Observations	7,002	7,002	7,002	7,002
Log Likelihood	-4,451.7	-4,043.7	-4,633.1	-3,421.9
Akaike Inf. Crit.	8,933.4	8,117.4	9,296.2	6,873.7

Note: Entries are average marginal effects with log odds and standard errors in brackets.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Therefore, to test for a possible indirect-only effect, we also have also regressed different threat perceptions on sociodemographic factors. Results are reported in Table 3.¹¹ Our results shows that while some of these antecedent factors (such as gender-female and unemployment) contribute positively to both types of threats, as most citizens feel threatened by both aspects in a similar manner, there are still significant differences when it comes to age, income and working conditions, and having children.¹² Respondents in the over 60s age group and those who switched to working remotely during the pandemic are more worried about the threat of the crisis on their personal health. Furthermore, those in the 35–60 age group, while significantly more worried about both the economic and the health aspect than the under 35s, are more worried about the health aspect of the pandemic than the economic one when considering the effect sizes (being in the 35–60 age group increases the probability of being threatened by health by 13.7 percentage points, while it increases the probability of being threatened by the economy by only 4.9 percentage points).¹³ By contrast, those who have stopped working due to the pandemic, those having children, and those suffering major

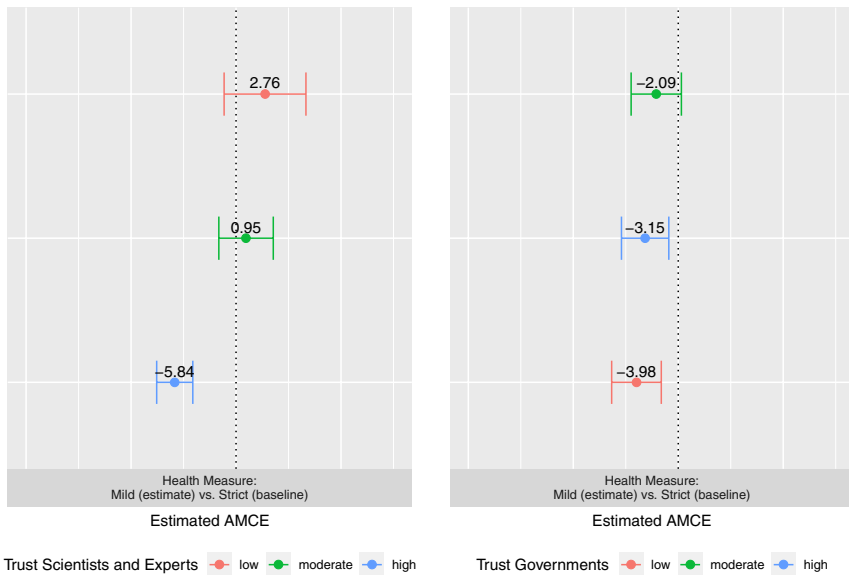


Figure 4. Effects of trust in scientists/experts and government on health vs. economy policy preferences.

Note: Negative estimates (left of the dotted vertical line) indicate preferences for strict measures, positive estimates (right of the dotted vertical line) indicate preferences for mild measures.

income losses are more worried more about their personal finances. With regards to the sociotropic threats, the differences between these individual socioeconomic factors are less clear cut with fewer differences and smaller effect sizes: older respondents being more worried about the national economy, and those who have suffered major income losses being more worried about the state of the national health. These results add further evidence to the role of sociodemographic factors and suggest that when a crisis presents citizens with a multifaceted threat, these factors do not fare very well in predicting policy preferences directly, but they do exert an indirect effect through threat perceptions. Threat perceptions are, therefore, a mediator between sociodemographic factors and policy preferences.

Trust and political orientations

In Figures 4 and 5 we analyse the effect of trust in government and trust in scientists/experts on policy preferences. In line with our expectations advanced in hypothesis HP3, those who have a high trust in scientists and experts have a significantly higher probability of

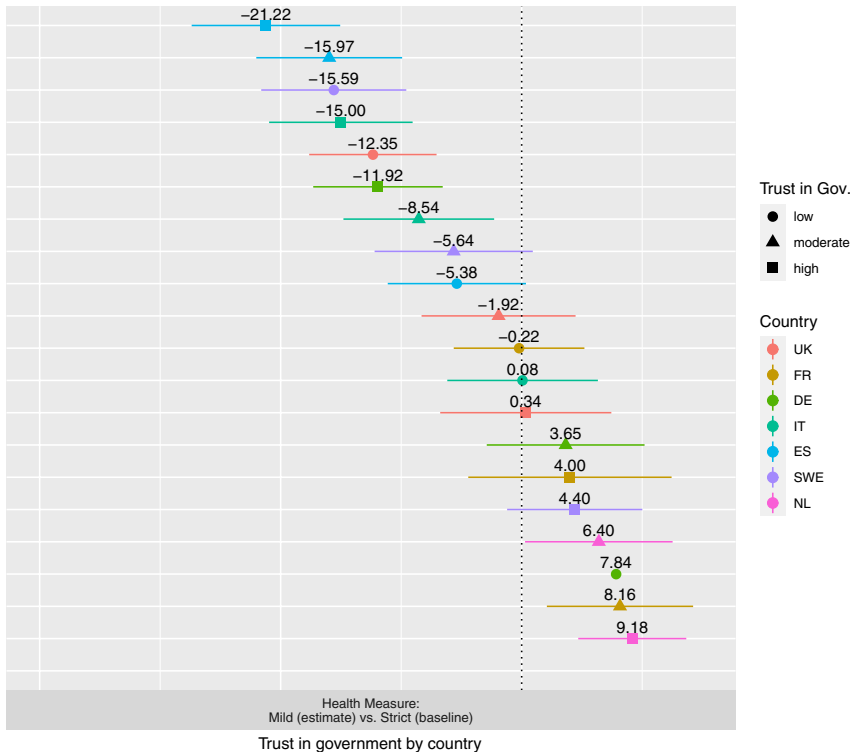


Figure 5. Effects of trust in government on health vs. economy policy preferences, by country.

Note: Negative estimates (left of the dotted vertical line) indicate preferences for strict measures, positive estimates (right of the dotted vertical line) indicate preferences for mild measures.

preferring strict health measures even at the expense of the economy (left-side graph in Figure 4). In contrast, trust in government does not appear to have a significant effect on policy preferences in the pooled sample (right-side graph in Figure 4), running against HP2. However, since the country governments in our sample varied in the harshness of their virus containment measures, we further explore how the effect of the trust in government varies by country in Figure 5. While not significant, we see that in Italy, Spain and Germany those who have a high trust in the government tend to prefer stricter lockdown measures. By contrast, in the Netherlands, Sweden and the UK, we notice the opposite trend: those with high trust tend to prefer milder lockdowns. Since by the time our survey was fielded, the first set of countries experienced harsh lockdowns, whereas the second set experienced mild lockdowns and an initial orientation towards

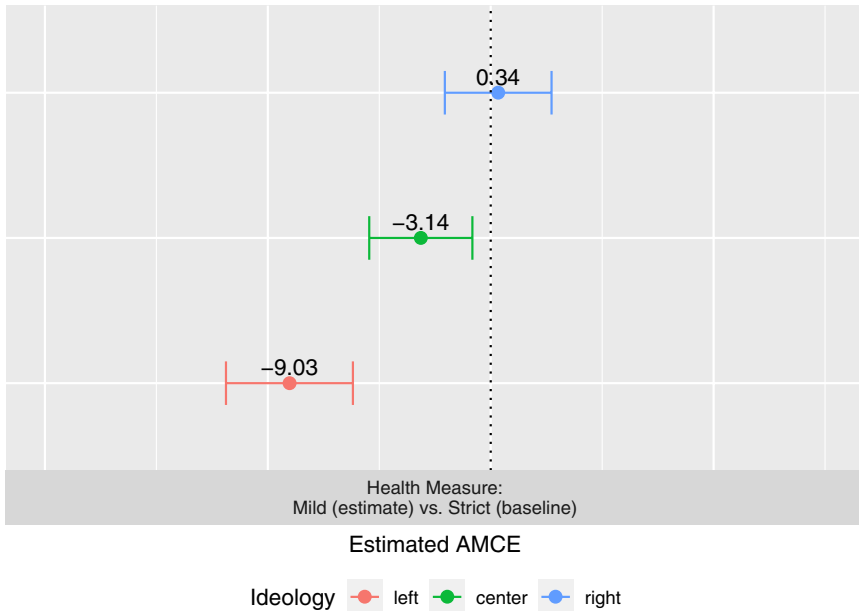


Figure 6. Effects of ideology on health vs. economy policy preferences.

Note: Negative estimates (left of the dotted vertical line) indicate preferences for strict measures, positive estimates (right of the dotted vertical line) indicate preferences for mild measures.

mitigating the virus through herd immunity, this diverging connection between trustworthiness and policy preferences is explainable. France remains the puzzling case as there appears to be no definite trend between trust and policy preferences.

For what concerns ideology, [Figure 6](#) confirms that there are also significant differences between respondents who self-place themselves on the right and the left of the ideological spectrum when it comes to their preferences for mild or strict lockdown measures. Left-leaning respondents have a 9 per cent lower probability of choosing mild lockdown measures than strict lockdown measures, whereas for right-leaning respondents the mildness of the measures does not seem to matter when they choose a specific policy measure.¹⁴ This confirms our expectations advanced in HP4 that left-leaning respondents, traditionally more in favour of a proactive role of the state in providing citizens' wellbeing in the name of solidarity and traditionally supported by social categories having an easier access to economic relief during the COVID-19 crisis (employees, rather than entrepreneurs and self-employed), would be more willing to accept strict health measures than their right-leaning counterparts.¹⁵

Conclusions

The present study has explored which factors shape individual preferences for the trade-off between protecting public health and limiting the economic damages linked to the lockdown policies enforced by national governments during the COVID-19 pandemic. We did it by means of a vignette survey experiments nested in a cross-national survey on the political and economic consequences of the COVID-19 crisis conducted in seven European countries in June 2020. Respondents were confronted with alternative policy scenarios that vary with respect to the strictness of the lockdown policies and the target of health and economic consequences of these policies.

The most important conclusion that we can draw from our study is that, by the end of the first wave of the pandemic, for most citizens the cure was markedly not worse than the disease, most of them being largely in favour of strict health measures irrespective of their economic consequences. Furthermore, whether people from different socioeconomic backgrounds tend to agree with the emergency policy responses adopted by their national governments, preferences for different types of policies are strongly shaped by subjective perceptions of the multiple threats coming from the COVID-19 pandemic. While on average a large share of citizens in each sample country are worried of both health and economic consequences of the pandemic, only those who are *not* concerned of the negative impact of the COVID-19 crisis on their personal health as well as the health conditions of the society in general tend to oppose strict lockdown policies. By contrast, those worried by the personal and societal economic aspects of the crisis are still in favour of strict lockdowns, irrespective of their detrimental economic consequences.

The results we have obtained resonate with the literature on public opinion formation in hard times stressing the role played by perceived threats coming from a crisis that has multifaceted consequences on both health and economic aspects. Perceptual threats do not play a role only at the individual level reflecting what is considered more threatening personally, but also reflect sociotropic considerations based on what is considered more threatening for the broader community. In contrast, sociodemographic factors that characterise more vulnerable social groups in terms of their health or economic conditions have no direct effect in shaping individual preferences for strict or mild lockdowns. However, they do play an indirect role by affecting perceptual threats. Perceptual threats, therefore, act as a mediator between usual-suspect sociodemographic characteristics associated with health and economic vulnerabilities and policy preferences.

Our findings also stress the relevant role played by political attitudes and orientations in shaping individual preferences for policy responses

to COVID-19 pandemic. Preferences for stricter health measures even at the expense of the economy are strongly associated with higher levels of trust in scientists and experts, a category that assumes a pivotal role in advising governments during the pandemic. With regards to ideology, left-leaning individuals are more likely to prefer strict lockdowns aimed to protect public health, even at the expense of the economy, than their right-leaning counterparts.

The present study also provides important implications for policy making in hard times. Our findings stress that decision-makers need to disentangle all the potential threats that come from a crisis and the relative importance that citizens attribute to each of them to design appropriate and effective policy responses that can be supported by a large part of the population. Furthermore, given the relevance of perceived risks in shaping citizens' preferences for strict lockdown policies, media and policy-makers should be careful and avoid nurturing citizens' fears in order to maintain high levels of support for unilateral policies implemented bypassing the traditional channels of democratic decision making. While it is true, as other studies show (Amat *et al.*2020), that crises increase public support for strong leadership, fast policy responses and a 'techno-authoritarian' style of government, the prolongation of these emergency measures might create problems for democratic stability.

In conclusion, while our study focussed specifically on the role of perceptual threat, future research could focus on examining other factors that are part of these emotional-intuitive considerations, such as differences in emotions beyond threat (e.g. anger or enthusiasm) or social amplification. Additionally, future research could also further engage in the difference between egotropic and sociotropic perceptual threat within the COVID-19 crisis and further explore differences between drivers of the two.

Notes

1. Except for Bol *et al.* (2021), whose survey was however not designed explicitly to tap public attitudes toward the consequences of the COVID-19 pandemic.
2. Note that while economic measures are part of our design, they do not increase our universe of vignettes since these are tied to our health measures, resulting effectively in the same factor F1 being manipulated.
3. The survey was conducted via CAWI methodology using the YouGov proprietary panel in all countries to recruit participants.
4. Sample sizes and basic socio-demographic descriptive statistics can be found in [Online Appendix A1](#). Question wording and re-coding can be found in [Online Appendix A6](#).

5. The randomisation of factor-levels, but also marginal means for the choice and the rating tasks can be found in [Online Appendix A1](#).
6. A more detailed description of the HB method used, and the distribution of estimated parameters can be found in [Online Appendix A2](#).
7. We have also analysed the conjoint experiment considering respondents' rating of the policy profiles in [Online Appendix A5](#). We have found similar results to the ones presented here, but unsurprisingly with smaller effect sizes and less significant differences due to the lack of forced choice.
8. For the analyses presented here we have employed the `cregg` and the `ggplot2` packages in R.
9. We present here the results for conditional AMCEs with each grouping factor(s) separate as the other confounding variables are controlled by randomization which makes the groups probabilistically equal with respect to these potential confounding variables. Nevertheless, as a further robustness test, we also include binomial regression results with policy profile choice as the dependent variable, country fixed-effects, and all independent variables presented here included. The results of the regression can be found in [Online Appendices Table A16](#) and confirm the results of the conditional AMCEs.
10. Out threat indicators were measures on 11-point scales and were dichotomized since the conditional AMCEs presented here work with grouping categories, and hence categorical variables. Those placing themselves above 6 on the scale were re-coded as more threatened, and those below as less threatened. Figure A6 in the [Online Appendices](#) showing the distribution of the two threat variables, further gives support to our choice of considering those more threatened above 6 on our scale since the middle-point of the scale is the most chosen response and, therefore, perhaps an easy go-to for those without a strong threat perception. In A4.3 in the [Online Appendices](#), we also perform robustness tests in which we explore other ways of recoding our threat variables into 3 categories with the results being robust to the ones presented here.
11. Results include country fixed effects that are not presented here due to space considerations.
12. Our findings are further confirmed by structural equation models (SEMs, performed via the *lavaan* package in R, see Table A17 in the [Online Appendices](#)) with policy profile choice as the dependent variable showing that while sociodemographic factors have no direct and total effect, they do have a mediated effect via egotropic health threat perceptions, indicating an indirect only mediation (Agler and De Boeck 2017; Hayes 2009; 2013; Rucker *et al.* 2011; Zhao *et al.* 2010).
13. We use Average Marginal Effects (AMEs) calculated using the *margins* package in R for interpreting the coefficients (log odds) in Table 3 for ease of interpretation.
14. When taking into account also respondents who refused to locate themselves on the 0–10 left right scale that we employed to operationalize their ideological leanings, the results show even more pronounced differences between the left-leaning and the right-leaning group (see [Online Appendices Figure A5](#)).
15. In Figure A9 in the [Online Appendices](#) we further check for potential interactions between ideology and threat with null results.

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Data availability statement

Data available on request from the authors.

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