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## United but divided: Policy responses and people's perceptions in the EU during the COVID-19 outbreak

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### ABSTRACT

To understand the public sentiment toward the measures used by policymakers for COVID-19 containment, a survey among representative samples of the population in seven European countries was carried out in the first two weeks of April 2020. The study addressed people's support for containment policies, worries about COVID-19 consequences, and trust in sources of information. Citizens were overall satisfied with their government's response to the pandemic; however, the extent of approval differed across countries and policy measures. A north-south divide in public opinion was noticeable across the European states. It was particularly pronounced for intrusive policy measures, such as mobile data use for movement tracking, economic concerns, and trust in the information from the national government. Considerable differences in people's attitudes were noticed within countries, especially across individual regions and age groups. The findings suggest that the epidemic acts as a stressor, causing health and economic anxieties even in households that were not directly affected by the virus. At the same time, the burden of stress was unequally distributed across regions and age groups. Based on the data collected, we draw lessons from the containment stage and identify several insights that can facilitate the design of lockdown exit strategies and future containment policies so that a high level of compliance can be expected.

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### 1. Introduction

The outbreak of COVID-19 triggered a wide range of responses from governments in the European Union. Given that the disease was new and effective medical countermeasures did not exist in early 2020, governments had to adopt non-medical measures aiming at the containment and mitigation of COVID-19. With the aim of flattening the curve, these policies included bans on public gatherings, closures of academic institutions and public places, national and international mobility restrictions, confinement, and several others [1].

Italy was the first country in Europe to apply intervention measures from the beginning of March 2020 in response to the severity of the COVID-19 outbreak. Other EU countries followed soon after-

ward, using similar countermeasures around mid-March 2020 [2]. The adoption of these policies varied in their scale, stringency, and pace across countries. While most European states implemented confinement measures, the extent of limitations of people's freedoms differed across individual countries. Lockdowns were usually strictest where the pandemic was deadliest (Italy, Spain, and France), imposing severe limitations on population movements. Some governments chose less stringent versions of confinement or no lockdown at all, for instance, an intelligent lockdown in the Netherlands or freedom under responsibility in Sweden [3].

Forced to react swiftly to the unfolding epidemic situation, policymakers in every country tried to balance the implementation of containment policies against numerous important factors with the priority mostly given to the protection of the population's health. Consequently, there has been a lot of debate in every society about whether measures taken by the government were appropriate or not. Some parts of the population have been voicing support for more severe containment policies to minimize the spread of the

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virus. Such attitudes were likely fueled by people's worries about their health and the potential of their national healthcare system to withstand the epidemic. Meanwhile, others expressed their concerns about the social and economic consequences of such policies, thereby advocating for less severe containment measures [4].

As the pandemic began to abate, governments started designing the lockdown exit strategies and restarting their economies. However, the risk that the new wave of the epidemic may happen did not disappear, especially given that the vaccine development takes a long time, and herd immunity was not achieved [5]. In this light, the issue of lifting lockdowns has become a new subject of public debate across and within European countries raising discussions about the appropriateness of timing, risks, and potential consequences of ending the confinement [6]. Lifting lockdown restrictions creates acute dilemmas to the policymakers since the economic and human costs of any exit strategy seem to be closely linked together. Taking a utilitarian approach in this situation could backfire if the society's understanding is not preliminarily secured or expectations are not fulfilled.

Policymakers and public health experts have to persuade their citizens to make behavior changes and respect future containment interventions while facing the difficulty of enforcing such regulations. Therefore, it becomes crucial to understand people's worries about the pandemic and their perceptions of the effects of containment policies, so that the design of further policies and contingency measures is well-informed, and a high level of compliance can be expected from the population. Moreover, trust in the government and social institutions may become central to achieving a successful implementation of future measures, whereas lack of it may turn detrimental to the fight against the pandemic. Hence it is of paramount importance to understand who people trust most so that public health messages can be amplified using correct means of communication.

We provide a timely description of the current situation and draw lessons from the containment stage to inform the design and implementation of the lockdown exit policies.

## 2. Materials and methods

In order to understand the public sentiment towards the COVID-19 containment measures and to inform future policy development, we collected information on people's support for these policies, their worries in relation to the unfolding epidemic, and their trust in different sources of information. We surveyed over 7000 people representative of the adult population in seven European countries: Denmark, France, Germany, Italy, Portugal, the Netherlands, and the UK. The fieldwork was conducted online during April 2–15, 2020, using multi-sourced online panels provided by the market research company Dynata. To ensure that the sampling frame was representative given the online nature of the study, the company applied diverse recruiting procedures to reach the general population (through open recruitment, loyalty programs, affiliate networks, mobile apps). It then used quotas to match the national census shares in each country.

The questionnaire was designed by the authors of the study except for the worry items that were adopted from the World Health Organization (WHO) COVID-19 Snapshot Monitoring project [7]. The questionnaire was carefully translated into six other languages by native speakers and then implemented using the Qualtrics platform first as a pilot (10 % of the sample in every country) and next as a large-scale survey. The data from the pilot study were included in the total sample.

In each country, we collected data from a sample of 1000 respondents representative of the national population in terms of region, age, gender, and education. Given that the Italian region Lombardy

was the most severely hit by the COVID-19 outbreak, we collected 500 additional responses in this region representative in terms of age and gender. Learning about perceptions and attitudes of people who reside there could provide essential insights to researchers and policymakers. The extra data collected from Lombardy were not included in the representative sample of Italy. Thus, no weighting was used as the additional Lombardy sample was analyzed separately and denoted as Lombardy in the results section.

## 3. Results

### 3.1. Policy support

We assessed people's approval of policy measures that were taken (or were likely to be taken) by their national government in response to the COVID-19 outbreak. In particular, we covered such issues as school closures, bans on public gatherings, border closures, bans imposed on the export of medical equipment, fines for quarantine violations, random temperature checks, curfews, public transport suspensions and utilization of mobile phone data for tracking COVID-19 cases and their contacts.

On average, 68 % of people in the seven European countries approved of the policies taken in their country in response to the pandemic, implying considerable public support. Nevertheless, the extent of approval differed by country and by policy measure.

The most approved measures were fining 14-day quarantine violations, ban of public gatherings, and border closures (each supported by 83 % of respondents). By the time of the survey's fieldwork, restrictions on public gatherings had been adopted in all countries covered by the study, whereas international travel controls had been imposed to a certain extent everywhere, except the UK [8].

Prior to complete border closures in mid-March 2020, some countries (for example, Italy, France, Germany, Denmark) had been requiring screening and 14-day quarantine for arrivals from high-risk regions already since February. In contrast, other countries, such as Portugal and the Netherlands, started later and turned directly to strict measures, such as banning arrivals from high-risk areas and imposing partial border closures. The latter typically implied either limitation on entries of nonresidents or closure of only certain types of borders (land, sea, air), while ensuring green lanes for freight vehicles transporting goods. However, complete border closures occurred haphazardly and led to disrupted commerce and stranding citizens. Among countries covered in our study, Denmark was the first to close all borders in mid-March, whereas the UK did so only in the second half of May 2020. Moreover, at the time of fieldwork, the UK did not have routine screenings at its airports or quarantine requirement for travelers [8,9]. Thus, the results for the UK showed the extent of public support that these measures would have received, had they been implemented earlier.

Meanwhile, the most opposed containment policies were public transport suspension (37 % of respondents against it), ban of medical export, use of mobile phone data for tracking, and the imposition of a curfew (each disapproved by approximately 23 % of respondents).

These trends might reflect within-country regional and age structure of the population. For example, older individuals and those living in remote areas tended to be the most strongly opposed to public transport suspension. In fact, among countries covered by the survey, public transport suspension was implemented only in Italy, whereas its volume was reduced in all other states except for Germany [8]. The stay-at-home orders were most significantly opposed by the youngest respondents aged below 25. This mea-

sure was enforced in all countries covered by the survey except for Denmark, where it was introduced as a recommendation [8].

Overall, a north-south gradient could often be noticed in the EU regarding policy support: people living in the southern states (Portugal, Italy, and France) tended to approve of the containment policies more than residents in the northern countries (Denmark, Germany and the Netherlands). Noteworthy, the largest share of supporters for every containment measure was noticed among the residents of Italy and particularly in Lombardy. Here, on average, 79 % of the population approved of the government's response to the pandemic.

Fig. 1 illustrates the average degree of approval of several selected countermeasures across seven European countries (measured on a Likert scale from 1-strongly disapprove to 5-strongly approve), which highlights how diverse Europe is in the perceptions of COVID-19 policy responses. Higher intensity of the color reflects a higher level of approval of a specific policy by the population in each country.

Interestingly, the most significant share of the population who explicitly opposed each of the containment policies taken by their government was identified in Denmark. Here, for example, 22 % of respondents disapproved of school closures and 48 % disapproved of the imposition of a curfew. In comparison, the average disapproval of these measures in other countries was around 8 % for schools and 20 % for curfews.

The most polarizing opinions were observed concerning the use of mobile data for tracking COVID-19 cases and their contacts. The most significant share of people explicitly opposing such policy was identified in Denmark (34 %), the Netherlands (31 %), and Germany (25 %). It was particularly disfavored by the youngest age group (33 % of respondents aged below 25 against it).

This policy received significant media attention as some countries and the European Commission started the collaboration with telecom providers to access individual geolocation data for prediction and surveillance of COVID-19 spread [10,11]. As of March 2020, Deutsche Telekom provided German authorities with the anonymized data on the movement of its users. In Italy, Vodafone, WindTre and Telecom Italia offered aggregated user data provision to the government for the same purpose. Authorities in the Lombardy region used mobile phone data to check compliance with the lockdown restrictions [10–12]. Other countries either initiated the development of their own mobile phone tracking apps or cooperated on the creation of common software, such as the Pan-European Privacy-Preserving Proximity Tracing (PEPP-PT) project led by Germany. However, the launch of the PEPP-PT was delayed at the end of April due to the data protection concerns voiced by experts and even some of the project participants [13].

While proponents of the contact-tracing measures claim that using mobile data is of paramount importance in response to the COVID-19 pandemic, many people worry about the government's use of technology due to possible privacy violations, thereby raising debates about the appropriateness of such social control measures [10,13,14]. According to our data, people in some European countries expressed considerable reluctance about supporting such policy, which therefore makes future compliance questionable. Moreover, such privacy disputes, as in the case of the PEPP-PT project launch, might trigger higher reluctance among the potential users to use any contact-tracing app in the future, which could be detrimental for the implementation of a viable tracing technology [13].

To better understand public opinion on certain policies, it is essential to look at the big picture and place obtained results into the national contexts. People's attitudes were likely based on their perceptions of the general state of affairs in their country, particularly in terms of the epidemic situation and restrictions they were subject to at that moment.

In view of that, Table 1 summarizes the scale of the pandemic and the stringency of government's response in seven European countries at four points of time spaced around April 12 (when the survey's fieldwork was 99 % complete in every country). The public health situation in each state is described using total confirmed cases of COVID-19 and total deaths attributed to COVID-19, both measured per 1 million people and reported by the European Centre for Disease Prevention and Control [15]. The stringency of government's response is measured with the COVID-19 Government Response Stringency Index, a composite measure of containment policies ranging from 1 to 100, where a higher value denotes a stricter response [8].

At the time of the survey's fieldwork, the epidemic situation was worst, and the stringency index was highest in Italy and France [8,15]. Clearly, there was a north-south gradient in the stringency of government response: Italy, France and Portugal imposed more demanding policies than Denmark, Germany, the Netherlands and the UK. Nevertheless, although people in southern countries were exposed to more severe containment measures, they approved of them more than people residing in northern states, who experienced less stringent restrictions.

Turning now to within-country variations, we observed considerable heterogeneity of attitudes towards many policy responses within individual countries with particularly marked differences between regions and age groups in Italy, France, and the Netherlands.

Hereinafter, we grouped regions based on the severity of the COVID-19 outbreak distinguishing between the most and the least affected areas. Noteworthy, Lombardy denotes the extra sample collected in Italy and was analyzed separately from the representative Italian sample. Overall, we did not find significant differences in policy support between Lombardy and the rest of Italy.

To illustrate within-country differences, Fig. 2 reflects regional and age-related heterogeneity of public opinions in France and Italy toward banning the export of medical equipment, such as masks. In fact, this measure was briefly undertaken by Germany and France at the onset of the pandemic in early March 2020, leading to political tensions between the EU member states. Germany declared that the reason was to avoid shortages of masks, gloves and safety glasses within the country, whereas France argued that the ban was needed for the assessment of inventory and storage capacity [16]. Following the call for solidarity, both countries lifted the within-EU export ban on equipment in mid-March [17].

While support for this policy tended to be similar in the most and the least severely affected parts of Italy and France, the approval of the export ban conspicuously differed across age groups. Older individuals approved more of this policy than younger people, which, besides other factors, may be related to the levels of worry people in these age categories have about the risks that COVID-19 poses to their health. We found that 51 % of French and 46 % of Italian respondents aged above 65 perceived risks to their health from COVID-19 as high or very high, while the corresponding share among people aged below 25 equaled 30 % in France and 17 % in Italy.

### 3.2. Worries about health and the economy

To address the mental health implications of the COVID-19 outbreak and subsequent containment measures, we assessed levels of worry prevailing in European societies over several domains (health, economic, emotional, work, and future). More specifically, we addressed concerns about losing a close person, becoming unemployed, health system getting overloaded, school closures, small companies running out of business, recession, restricted access to food supplies, blackouts, and society getting more egoistic. These items were adopted from the WHO COVID-19 Snapshot Monitoring project, which will allow future comparisons with sim-

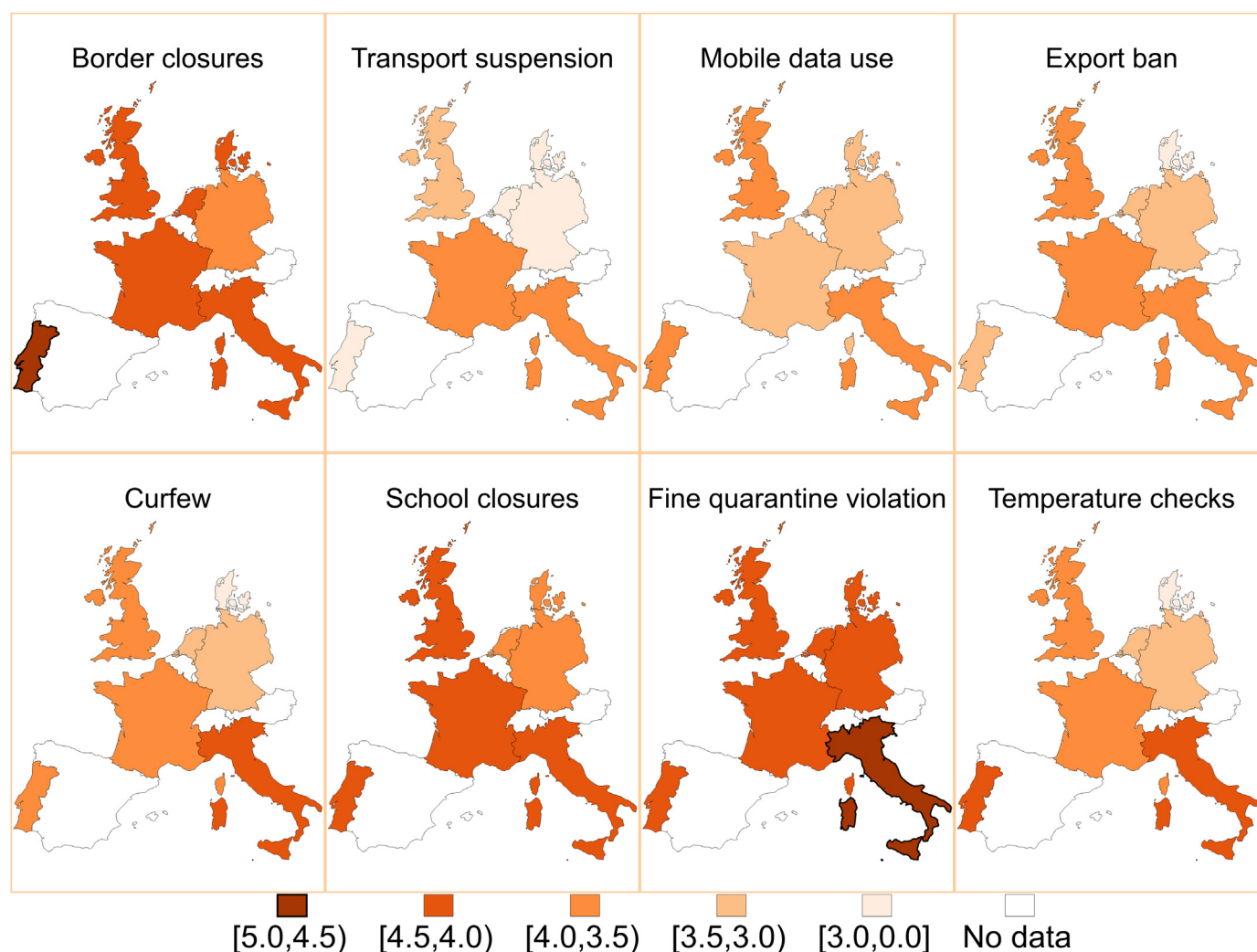


Fig. 1. Mean support of government policies.

**Table 1**  
Total confirmed COVID-19 cases and deaths (per 1 million people) and government response stringency index.

Country		Date			
		March 12, 2020	April 12, 2020	May 12, 2020	June 12, 2020 <sup>a</sup>
Denmark	Cases	89	1 035	1 815	2 078
	Deaths	0	45	91	102
	Stringency index	37.96	72.22	65.74	62.96
France	Cases	35	1 437	2 138	2 383
	Deaths	0.74	212	408	450
	Stringency index	28.7	90.74	76.85	60.19
Germany	Cases	19	1 438	2 035	2 216
	Deaths	0.04	32	90	105
	Stringency index	32.87	73.15	64.35	50
Italy	Cases	206	2 519	3 636	3 906
	Deaths	14	322	508	565
	Stringency index	85.19	93.52	62.96	48.15
Netherlands	Cases	29	1 425	2 497	2 816
	Deaths	0.29	154	318	353
	Stringency index	41.67	79.63	68.52	62.96
Portugal	Cases	6	1 568	2 715	3 522
	Deaths	0	46	112	148
	Stringency index	32.41	87.96	75	71.3
United Kingdom	Cases	7	1 164	3 286	4 293
	Deaths	0.1	171	472	608
	Stringency index	11.11	75.93	75.93	70.37

<sup>a</sup> Or closest available date.



## Ban on export of medical equipment

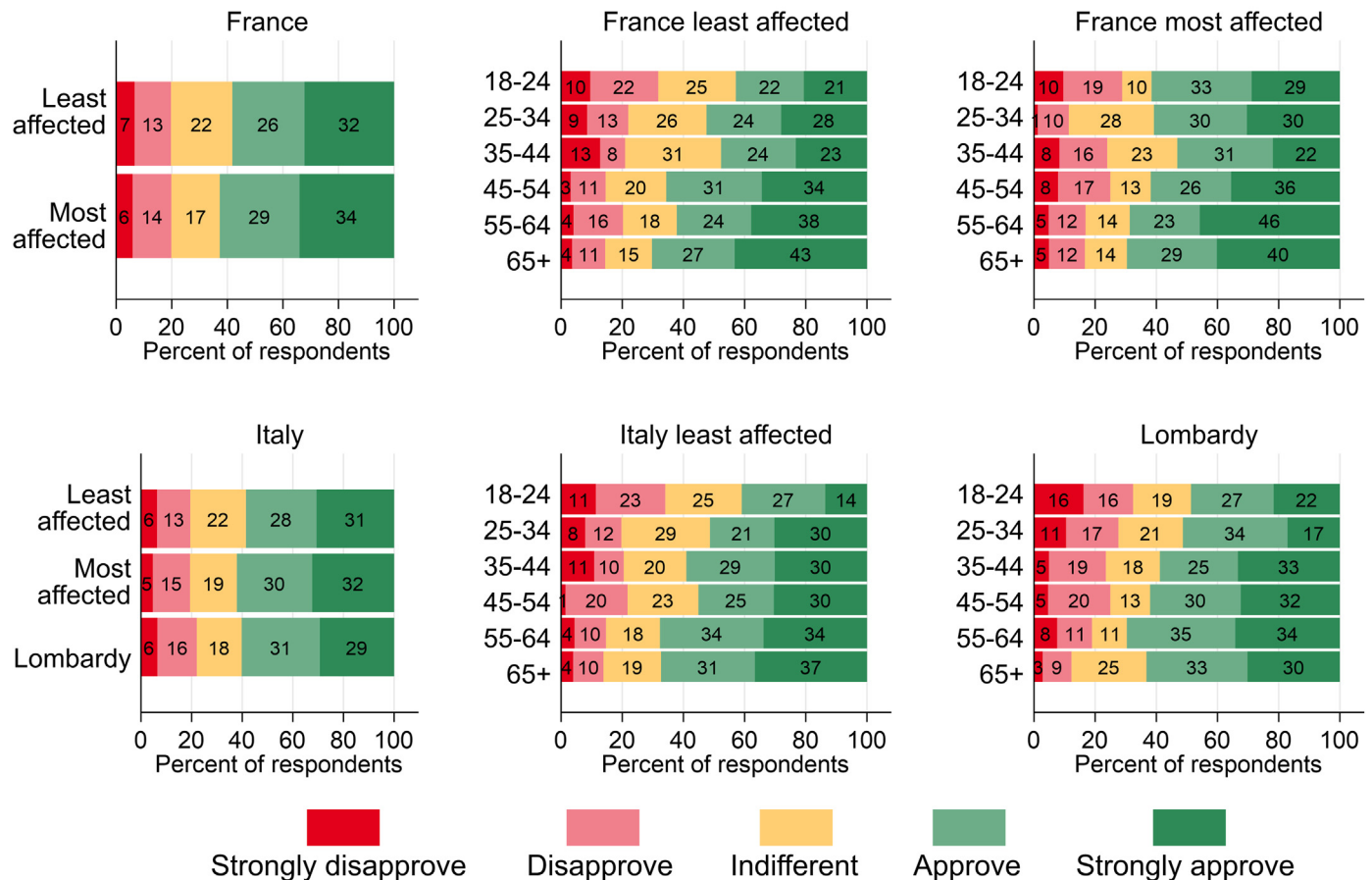


Fig. 2. Heterogeneity of public attitudes within countries by region and age category in France and Italy.

ilar data collected for other countries and at different points in time [7].

We found that the mean trend was similar in all countries: people worried most of all about the health system getting overloaded so that the capacities could become insufficient to cope with the surge in COVID-19 cases. We observed that even in case of households that had not been directly hit by the novel coronavirus (above 75 % of respondents in the total sample), the pandemic might have acted as a stressor causing health and economic anxieties.

Fig. 3 presents people's worry about selected issues across seven EU countries (measured on a Likert scale from 1-not worry at all to 5-worry a lot), where the higher intensity of color reflects a larger share of the population who worry quite a bit or a lot. Cross-country differences look substantial, and a north-south divide in the worry caused by the COVID-19 outbreak is conspicuous.

For instance, 84 % of respondents in Portugal and 81 % in Italy mentioned that they worried quite a bit or a lot about the national health system becoming overloaded, while the corresponding shares in Denmark and Germany were 54 % and 62 %, respectively. These health concerns might have reflected the development of the pandemic. As showed in Table 1, the progress of the epidemic had a north-south pattern with more COVID-19 cases and deaths per million of the population in southern states than in northern. The exception was the UK, where the epidemic was third deadliest after Italy and France, but government response was less strict than in countries with a better epidemiological situation [8,15].

Similarly, more people in Portugal and Italy were concerned with the economic consequences of the pandemic than in other European countries. For example, 68 % of Portuguese and 56 % of Italians were worried about losing their jobs, while respective shares in the Netherlands and Denmark were 27 % and 16 %, correspondingly.

These cross-country differences in economic anxieties may be related to people's perceptions of the economic and financial countermeasures taken by their national government and the EU. During the pandemic, European countries implemented several fiscal and monetary measures to mitigate the economic impact of the COVID-19 outbreak. These policies typically included support of wages under the reduced-hour scheme, postponement of tax payments for companies, direct financial supports and grants to small enterprises and self-employed, the extension of unemployment benefits, provision of capital buffers to banks, etc. [1]. Nevertheless, there were substantial variations in the timing and specific content of these countermeasures across the states.

To briefly overview the scale of economic support provided by the government in each of the seven countries, Table 2 summarizes values of the economic support index, a composite measure reflecting income support and debt/contract relief provided by the national government to households [8]. It is measured on a 0–100 scale, where a higher value refers to a more substantial economic assistance.

At the time of the survey's fieldwork, all countries provided some type of economic relief to their residents. Nevertheless, the extent of such support was conspicuously different: France and the

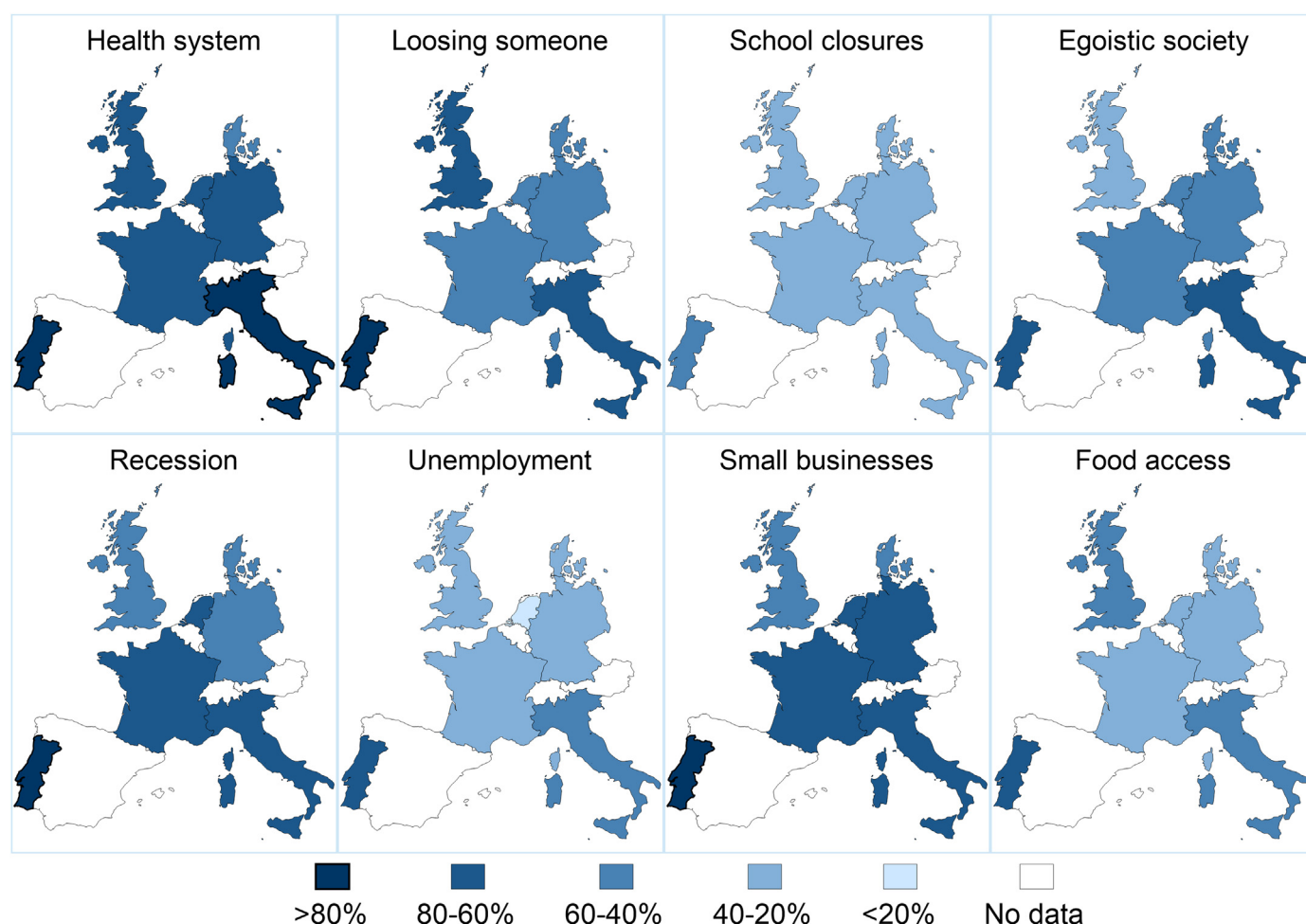


Fig. 3. The proportion of respondents who worry quite a bit to a lot.

Table 2  
Economic support index.

Country	Date			
	March 12, 2020	April 12, 2020	May 12, 2020	June 12, 2020 <sup>a</sup>
Denmark	37.5	37.5	87.5	87.5
France	0	100	100	75
Germany	0	87.5	87.5	62.5
Italy	0	50	50	75
Netherlands	0	62.5	62.5	62.5
Portugal	25	75	75	50
United Kingdom	0	100	100	100

<sup>a</sup> Or closest available date.

UK ranked highest, while Denmark, Germany, and Italy ranked lowest [8]. Hence, it may be possible that higher levels of economic concerns in some countries indicated people's beliefs in the insufficiency of the government's response, which will be subject to the analysis in the next waves of the survey.

Moreover, the composition of employment varies across the EU, especially in terms of informal and temporary employment. Temporary contracts provide lower levels of social protection and job security to employees, but their prevalence has increased over the last years, particularly in the Netherlands, Italy, and France. As of 2019, the share of temporary employees in the total number of employed was highest in southern European countries: Portugal (17.4 %), France (13.3 %), and Italy (13.1 %). In contrast, it was significantly lower in northern states: the UK (3.8 %), Denmark (8.3 %), and Germany (9.3 %). The only exception was the Netherlands,

where temporary workers constituted 13.6 % of all employees [18]. Thus, such differences in the employment composition may be in part responsible for the cross-country dissimilarities in economic concerns.

We also observed differences in the levels of concern within individual countries. Fig. 4 shows the extent of worry about the health system and a recession in Italy. We grouped regions based on the severity of the COVID-19 outbreak and distinguished the levels of anxiety across age categories. Higher intensity of the color reflects a greater extent of worry.

Overall, the level of worry in the highly affected regions of the country was not higher than elsewhere in Italy, except for the youngest age group. However, economic concerns tended to be unequally distributed across the age groups. For instance, worries about the recession and small companies running out of business

## Worries about the health system and recession

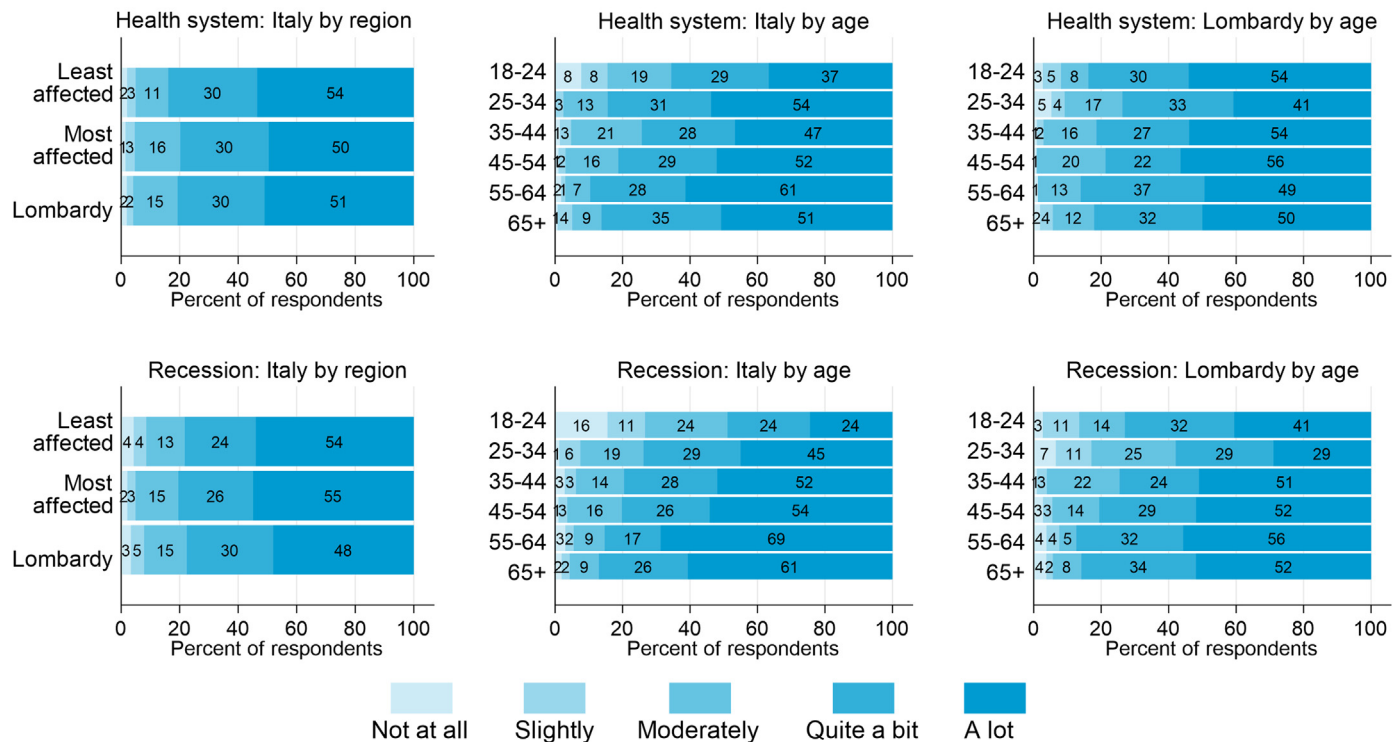


Fig. 4. Heterogeneity of people's worries in Italy by region and age category.

were higher among older individuals than younger age cohort. This pattern was similar in all countries covered by the survey.

### 3.3. Trust in sources of information

We asked people about the main sources of information from where they received news about COVID-19. The data show that overall 94 % of respondents closely followed the news on the situation with COVID-19, implying a high level of public awareness. Regarding the sources of information, 86 % of respondents mentioned receiving updates from the TV and 50 % additionally searched for information on the Internet. Presumably, reliable information presented through the television emerged as the best channel to reach the population at large.

Next, we assessed the extent of people's trust in the information received from various sources in the context of the COVID-19 situation. The trust in the following information sources was addressed: national government, the EU, the WHO, hospitals and GPs, national news channels and newspapers, social media, relatives and friends.

Fig. 5 shows mean values of trust in information from six selected sources across seven European states (measured on a Likert scale from 1-no trust at all to 5-trust very much). Higher intensity of the color reflects a higher level of trust in the information from a specific source.

The data show that overall people had the highest levels of trust in information from hospitals, family doctors, and the WHO, followed by information from the national government and main national news channels. This ranking of sources by trust was similar in all countries covered by the survey, except for France, where citizens had a high level of confidence only in healthcare providers and placed relatively little trust in all other sources.

Moreover, a north-south divide could be noticed in the level of trust in information from the national government. Trust was highest in Denmark and the Netherlands (more than 70 % of respondents

trusted much or very much), whereas it was lowest in France (27 % of respondents had a high level of trust).

Furthermore, a similar north-south gradient was observed concerning the trust in the EU: trust was highest in Denmark (45 %), Germany (40 %), the Netherlands (39 %) and the UK (35 %), whereas it was lowest in Italy (24 %) and France (21 %). Portugal was an exception to this case since the corresponding value here constituted 46 %.

Finally, we also observed considerable regional heterogeneities in levels of trust within countries with particularly noticeable differences across individual regions in Italy, France, and Germany. Fig. 6 shows people's trust in information from the national government in the context of COVID-19 in Germany and France as an example, where the higher intensity of the color indicates a greater extent of trust. While trust did not differ significantly between regions grouped with respect to the COVID-19 severity, it was heterogeneous across the age groups.

Although the survey asked about the level of trust in information from different sources in the context of the COVID-19 situation and not about the overall trust in institutions, these two are likely to be related. Generally, trust reflects people's perceptions of whether institutions are doing what is right. Thus, trust in the information they provide can be considered an indicator of the confidence that citizens have in these institutions [19].

## 4. Policy implications

The COVID-19 pandemic raised new challenges for policymakers across the EU. The imminent threat to public health at the onset of the pandemic led most governments to impose a lockdown on society. However, as the peak of the pandemic abated, the focus of attention turned to the social and economic consequences of the containment measures. Given that without acquired herd immunity the risk of a new wave of the epidemic remains high, and the

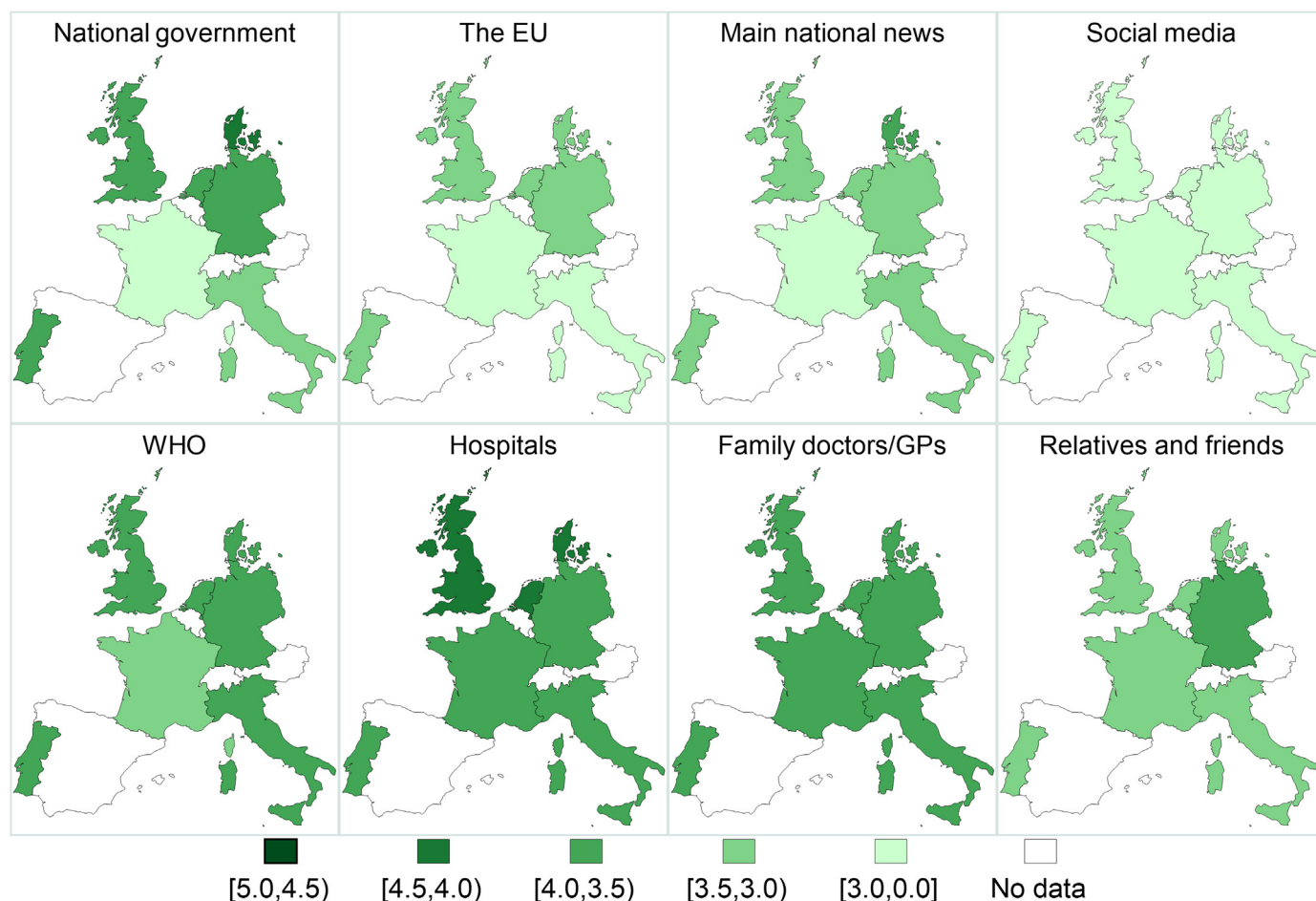


Fig. 5. Mean trust in information sources in the context of COVID-19 situation.

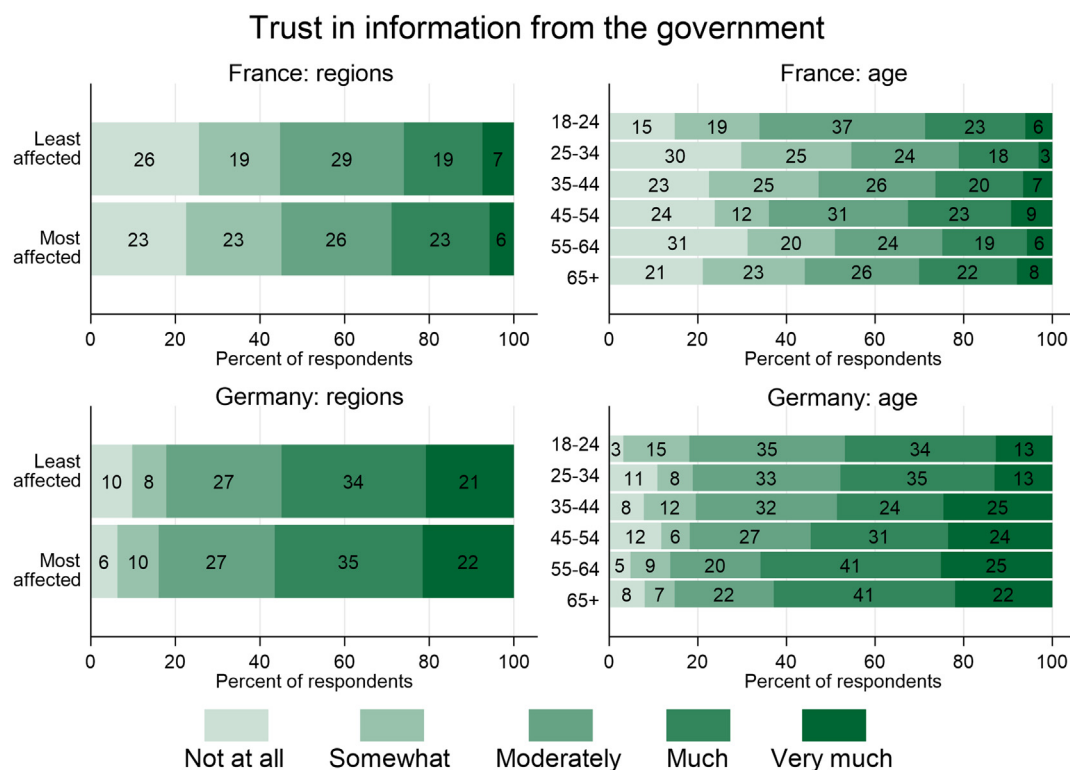


Fig. 6. Heterogeneity of levels of trust in information from the national government.



production and distribution of vaccines may take 12–18 months [20], governments must try to strike the right balance between effects on public health, social life and the economy when considering possible exit-strategies from the current lockdown situation.

In the absence of medical intervention, policymakers and public health officials must resort to non-medical behavioral interventions. Lifting the lockdown requires that citizens support and adhere to the policy measures that aim to contain the spread of the virus as social and economic activity gradually restarts. Given the difficulty of enforcing such regulations, future measures need to be both well-designed and well-communicated to the public. The more people are willing to comply voluntarily with the new measures, the less enforcement and supervision will be needed to achieve high compliance. For this, people's perceptions and attitudes need to be factored in at the policy-design and implementation stages.

Our survey sought to capture the public sentiment toward measures previously taken by policymakers to contain COVID-19 and addressed people's support for policies, worries about the consequences of COVID-19, and trust in different sources of information. The first insights obtained from the data showed that containment and mitigating policies undertaken by national governments in response to the initial stages of the COVID-19 pandemic were generally well-received by the population in all countries covered by the survey. Nevertheless, the extent of approval varied across states and specific policy measures.

Several lessons can be drawn for the design and implementation of policies for the prolongation or gradual removal of lockdown restrictions.

First, we observed a north-south divide in people's perceptions, worries and trust across the European countries. This finding suggests that further containment measures and lockdown exit strategies need to be balanced against the factors that worry people in each specific country. One noteworthy example is the level of importance that people in European countries attribute to the concepts of individual freedom and privacy. Using mobile data for tracking COVID-19 cases and their contacts may be a controversial decision to take even though it is believed by many experts to be a useful tool to manage the COVID-19 outbreak. The effectiveness of this policy critically depends on a sufficient level of adoption of the technology by the population [8]. Our data suggest that this may not be achieved easily in some European countries.

A clear takeaway is that an open dialogue with society on this matter is needed. Explaining the need for and the advantages of such intrusive policies through trusted means of communication, while addressing people's concerns explicitly and being open about the risks of using such policy measures may help raise the support and compliance in society to a sufficient degree.

Another critical issue is the balance between saving lives and saving livelihoods. According to the survey, people in southern European countries are substantially more concerned about the economic aspects of the COVID-19 outbreak than people in northern European countries. Economic anxieties, if left unaddressed, may have adverse effects on the mental health and wellbeing of the population, as well as cause downward adjustments in consumption behavior, thereby exacerbating the economic situation in a country if the recession indeed happens.

Second, we found considerable heterogeneities in people's approval of policies within individual countries. This tendency was particularly noticeable in France and Italy. One possible determinant of regional differences in public support could be the extent of the devolution of decision-making in the country. On the one hand, devolution could enable regional or local authorities to make better decisions due to their better awareness of region-specific circumstances. On the other hand, it could harm the coordination of policy responses between the central and regional authorities within indi-

vidual countries. Thus, it is crucial to understand the determinants of such differences and address them to secure public support of future policies and ensure high compliance with government measures.

Furthermore, our results showed that the burden of stress tended to be unequally distributed across and within countries. Even in case of households that were not directly hit by COVID-19, the pandemic may have acted as a stressor causing health and economic anxieties. Such worries may be detrimental to individual mental health and wellbeing, and they may become further exacerbated by the imposition of self-isolation policies. Thus, it may be reasonable to consider an asymmetric approach to the design of exit strategies taking region-specific levels of support and worry into account. This includes the identification of vulnerable categories of the population not only in terms of health risks but also with respect to social and economic activities, and addressing their concerns satisfactorily.

Third, during a pandemic, public trust in the government and the information it provides is of paramount importance. To expect high compliance over extended periods of time, policymakers need to adopt effective strategies and means of communication whereby securing a sufficient level of trust and confidence from the society. As our results suggest, some countries were more successful in this respect than others.

Society needs to be well-informed about the dilemmas faced by policymakers, and for this, the communication between the government and the citizens must be clear and transparent. The data showed that 94 % of respondents closely followed the news on the situation with COVID-19 mainly using television to keep themselves updated. Thus, television emerged as the best channel to reach the population at large, suggesting that presenting reliable information through this means is an effective strategy to follow.

Nevertheless, given that the data show regional and age-related heterogeneities in trust and policy support, it may be worth tailoring messages and means of communication to specific groups of the society. For example, cooperation with public figures and well-known experts can be used to deliver government and public health messages in a simple language, or local voices could be used to amplify such messages in individual regions of the country.

Overall, information provision, public education and effective communication strategies should be among the key guidelines for policymakers when implementing exit strategies and designing future containment measures so that these policies have public support and high compliance.

Additional waves of the survey are scheduled in June and August 2020. This will allow us to investigate in more detail how the population copes with the health, social and economic consequences of the COVID-19 pandemic as the situation evolves.

## Author note

All authors contributed to the manuscript. IS, SNB and NEV equally contributed to the design and implementation of the survey with expertise and feedback from PPB, WB, JE, JS and TS. IS, SNB, NEV, PPB, WB, JE, JS and TS analyzed the data. IS wrote the original draft, PPB, WB, JE, JS, TS, SNB and NEV reviewed and edited.

## Declaration of Competing Interest

None.

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## References

- [1] IMF policy tracker; 2020. Retrieved from <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> Accessed on April 24, 2020.
- [2] Flaxman S, Mishra S, Gandy A, Unwin HJT, Coupland H, Mellan TA, et al. Estimating the number of infections and the impact of non-pharmaceutical interventions on COVID-19 in 11 European countries. 2020; 2020, <http://dx.doi.org/10.25561/77731>.
- [3] Do low-trust societies do better in a pandemic? The Economist 2020, 2020, May 2) Retrieved from <https://www.economist.com/europe/2020/05/02/do-low-trust-societies-do-better-in-a-pandemic>. Accessed on May 7, 2020.
- [4] Lockdown fatigue hits as Europe enforces coronavirus restrictions. Financial Times; 2020 (2020, April 1) Retrieved from <https://www.ft.com/content/eb81dc96-c2bd-4c1c-ac8a-bf88653b0b8d>. Accessed on April 24, 2020.
- [5] Graeden E, Carlson C, Katz R. Answering the right questions for policymakers on COVID-19. The Lancet Global Health 2020;8(6):e768–9, [http://dx.doi.org/10.1016/s2214-109x\(20\)30191-1](http://dx.doi.org/10.1016/s2214-109x(20)30191-1).
- [6] Reopenings mark a new phase: global 'trial-and-error' played out in lives. The New York Times; 2020, 2020, May) Retrieved from <https://www.nytimes.com/2020/05/07/world/europe/coronavirus-reopening-costs.html>. Accessed on May 8, 2020.
- [7] WHO Regional Office For Europe. COVID-19 Snapshot MONitoring (COSMO Standard): Monitoring knowledge, risk perceptions, preventive behaviours, and public trust in the current coronavirus outbreak - WHO standard protocol. PsychArchives 2020, <http://dx.doi.org/10.23668/psycharchives.2782>.
- [8] Hale T, Webster S, Petherick A, Phillips T, Kira B. Oxford COVID-19 government response tracker. Blavatnik School of Government; 2020. Retrieved from [www.bsg.ox.ac.uk/covidtracker](http://www.bsg.ox.ac.uk/covidtracker) Accessed on June 11, 2020.
- [9] European Commission, 2016, December 06) Retrieved from <https://ec.europa.eu/home-affairs/what-we-do/policies/borders-and-visas/schengen/reintroduction-border-control.en> Accessed on June 11, 2020 Temporary reintroduction of border control; 2016.
- [10] OECD, Retrieved from <https://www.oecd.org/coronavirus/policy-responses/tracking-and-tracing-covid-protecting-privacy-and-data-while-using-apps-and-biometrics/> Accessed on May 6, 2020 Tracking and tracing COVID: protecting privacy and data while using apps and biometrics; 2020.
- [11] How will governments know when to lift restrictions? Covid-19 Health System Response Monitor; 2020 (2020, May 7) Retrieved from <https://analysis.covid19healthsystem.org/index.php/2020/05/07/how-will-governments-know-when-to-lift-and-impose-restrictions/> Accessed on May 10, 2020.
- [12] European mobile operators share data for coronavirus fight. Reuters; 2020 (2020, March 18) Retrieved from <https://www.reuters.com/article/us-health-coronavirus-europe-telecoms/european-mobile-operators-share-data-for-coronavirus-fight-idUSKBN2152C2> Accessed on June 12, 2020.
- [13] EU push for coronavirus contact tracing suffers setback. Deutsche Welle; 2020 (2020, April 23) Retrieved from <https://www.dw.com/en/eu-push-for-coronavirus-contact-tracing-suffers-setback/a-53219372> Accessed on June 12, 2020.
- [14] Ienca M, Vayena E. On the responsible use of digital data to tackle the COVID-19 pandemic. Nature Medicine 2020;26(4):463–4, <http://dx.doi.org/10.1038/s41591-020-0832-5>.
- [15] [dataset] Our World in Data, Retrieved from <https://github.com/owid/covid-19-data/tree/master/public/data/> Accessed on June 11, 2020 Complete our world in data COVID-19 dataset; 2020.
- [16] E.U. Seeks solidarity as nations restrict medical exports. The New York Times; 2020 (2020, March 7) Retrieved from <https://www.nytimes.com/2020/03/07/business/eu-exports-medical-equipment.html> Accessed on June 11, 2020.
- [17] Breton T (2020, March 15) Retrieved from <https://twitter.com/thierrybreton/status/1239159582821408770?lang=en> Accessed on June 11, 2020 After intense discussions, I welcome that DE and FR now allow for export of #COVID19 protective equipment. I will continue to follow supply to IT closely. No single EU country can win this battle alone. #cooperation #solidarity; 2020.
- [18] [dataset] Eurostat (2020, April 20) Retrieved from <https://ec.europa.eu/eurostat/databrowser/view/tesem110/default/table?lang=en>. Accessed on June 11, 2020 Temporary employees as percentage of the total number of employees; 2020.
- [19] OECD. Trust in government, policy effectiveness and the governance agenda. In: Government at a glance 2013. Paris: OECD Publishing; 2013, [http://dx.doi.org/10.1787/gov\\_glance-2013-6-en](http://dx.doi.org/10.1787/gov_glance-2013-6-en).
- [20] The race against COVID-19. Nature Nanotechnology 2020;15(4):239–40, <http://dx.doi.org/10.1038/s41565-020-0680-y>.