Ref. Ares(2023)3081046 - 02/05/2023

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Pan-European Response to the ImpactS of COVID-19
and future Pandemics and Epidemics

Mapping and Explaining Variance in Government Response to COVID-19 Across Europe Deliverable 7.6

PERISCOPE

Pan-European Response to the ImpactS of COVID-19 and future Pandemics and Epidemics

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016233

Deliverable No. 7.6

Mapping and Explaining Variance in Government Response to COVID-19 Across Europe

Due date: 30/04/2023
Submitted on: 28/04/2023

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Deliverable Type		
R	Document, report	X
DEM	Demonstrator, pilot, prototype	
DEC	Websites, patent fillings, videos etc.	

<table>
<tr><td>OTHER</td><td></td><td></td></tr>
<tr><td colspan="3">Dissemination Level</td></tr>
<tr><td>PU</td><td>Public</td><td>X</td></tr>
<tr><td>CO</td><td>Confidential (Consortium members including the Commission Services)</td><td></td></tr>
<tr><td>CI</td><td>Classified Information (Commission Decision 2015/444/EC)</td><td></td></tr>
</table>

Deliverable History		
Date	**Version**	**Author/Contributor**
14/04/2023	V1 (development of contents)	Cindy Cheng, Vanessa Zwisele, Marco Waldbauer, Luca Messerschmidt
28/04/2023	V1.1	Cindy Cheng, Vanessa Zwisele, Marco Waldbauer, Luca Messerschmidt, Tim Büthe

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EXECUTIVE SUMMARY

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How governments have responded to the COVID-19 pandemic can and has played a substantial role in shaping not only its evolution but also its attendant behavioral and social impacts, which is a key goal of the PERISCOPE Consortium to understand. Not only have governments across the European Union (EU) adopted an unprecedented number of public health and social measures (PHSMs) (e.g., lockdowns, travel bans) but they have also made policies that vary substantially in kind, timing, and policy targets, among other dimensions, across different countries.

This deliverable seeks to make headway on understanding this variation by mapping and explaining government responses to COVID-19 across EU countries.   After underscoring the importance of understanding this variation in our introductory chapter, our first chapter seeks to provide further context for understanding these policy responses by investigating how EU institutions shaped and set the parameters for them. As we show in this chapter, while EU institutions were unable to orchestrate a timely response to the initial wave of COVID-19 cases, it did enjoy some success, albeit belatedly, in coordinating responses among EU member states in the policy areas that it has some purview over, namely border policies, medical procurement and economic relief.

Ultimate responsibility for managing and leading COVID-19 PHSMs lies with individual nation-states in the EU, however, as opposed to the supranational bodies that compose the EU. In our second chapter, we present country reports which summarize the COVID-19 policy response and political discourse in 19 EU countries to provide a qualitative account of how the pandemic unfolded in each. These country reports show that despite substantial similarities in EU countries among a number of dimensions, including relative wealth and political institutions, differences among other dimensions including existing levels of decentralization, political cleavages, and political trust were associated with notable differences in PHSMs.

In our third chapter, we dig deeper into some key reasons to explain some of the differences in COVID-19 PHSM policy response through two studies. The first study explores whether countries with federal political structures develop more or less effective policies in response to the COVID-19 pandemic compared to those with unitary political structures by focusing on the particular cases of France, Germany, Italy and Switzerland.

We find that overall, federal countries are more likely to adopt policy responses that are heterogeneously applied within a given country compared to unitary countries. However, we find mixed evidence as to whether such policies are better able to counter the spread of COVID-19 cases. The second study seeks to explain the great variation in the adoption, timing and duration and lockdown policies made in response to the pandemic. Here we argue and find empirical evidence which shows that the greater the extent to which countries, prior to the COVID-19 pandemic, engaged in repressive behavior against its population, the more likely they were to adopt lockdown or curfew policies and to do so earlier and implement them longer compared to other countries.

In our fourth and final chapter, we acknowledge that the scale and scope of policy responses made by governments within the EU, it will be impossible to cover every single perspective and dimension with the attention that it deserves in one deliverable alone. To aid future work on this important research area, we present a publicly available corpus of nearly 50,000 PHSMs policies made in the EU that we have identified, systematically documented from original sources and harmonized from external datasets at the CoronaNet Research Project. This chapter provides an overview of the coverage of this dataset, summary index measures we developed based on this raw data and our methodology for harmonizing EU PHSM data from 6 other PHSM data gathering efforts to ensure the quality and completeness of our raw data. We end this chapter with an overview of the lessons learned from collecting this data and future challenges for such data collection, which draws not only from our experience but the experience of the 6 largest efforts to track such data.

We note that aside from the chapter on EU responses to the pandemic as well as the country reports of government responses and political discourse in individual EU countries during the pandemic, which are original and unique to this deliverable, the material contained in this deliverable draws on the following papers, all of which acknowledge the support of the PERISCOPE consortium and is available open access:

- Barceló, J., Kubinec, R., Cheng, C., Rahn, T. H., & Messerschmidt, L. (2022). Windows of repression: Using COVID-19 policies against political dissidents? *Journal of Peace Research*, *59*(1), 73–89. https://doi.org/10.1177/00223433211062389
- Büthe, T., Barceló, J., Cheng, C., Ganga, P., Messerschmidt, L., Hartnett, A. S., & Kubinec, R. (2020). Patterns of Policy Responses to the COVID-19 Pandemic in Federal vs. Unitary European Democracies. *SSRN Electronic Journal*.

https://doi.org/10.2139/ssrn.3692035

- Cheng, C., Barceló, J., Hartnett, A. S., Kubinec, R., & Messerschmidt, L. (2020). COVID-19 Government Response Event Dataset (CoronaNet v.1.0). *Nature Human Behaviour*, *4*(7), 756–768. https://doi.org/10.1038/s41562-020-0909-7
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Lastly, we further note that the work presented here complements that done by a number of other working packages. In particular:

- Our exploration of the response of the EU as a supranational body to the COVID-19 pandemic speaks to Deliverable 1.3 Analytical report comparing recovery strategies at the national and regional levels, which focuses in particular on exploring economic recovery strategies in both the EU as a whole as well as individual MS.
- While we focus on detailing and explaining the drivers of COVID-19 PHSMs in this deliverable, a number of other deliverables within the PERISCOPE Consortium look at the relationship between COVID-19 PHSMs and other behavioral and social outcomes which may be of interest to the reader to cross-reference. These include deliverables that focus specifically on exploring the relationship between COVID-19 PHSMs and: the spread of the virus (Deliverable 6.1 Dynamic SIR models: publication and infographics; Deliverable 6.2 Spatio-temporal modeling tool: publication and infographics) including with regards to mobility and contact tracing (Deliverable 5.2: Report on Behavioral Experiments on Social Distancing), economic outcomes (Deliverable 1.2 Report on the Socioeconomic impacts of COVID-19 and related measures), mental health (Deliverable 2.1 Analytical report on mental health impacts), health inequalities (Deliverable 2.2 Analytical report on health inequalities with emphasis on

vulnerable groups), vaccine hesitancy (Deliverable 5.1 Report: findings and data from behavioral experiments about risk perception)

- Our presentation of the data on COVID-19 PHSMs collected for EU countries by the CoronaNet Research Project speaks directly to the work done by WP4 on building a Data Atlas of COVID-19 related measures for researchers to explore future COVID-19 research. Interested readers can learn more about how the CoronaNet data is integrated into the WP4 Data Atlas by exploring the various deliverables associated with WP4 (Deliverable 4.1 List of Data Sources and Data Models, Specifications of Atlas Software Component, Deliverable 4.2 Semantic data models, data repository and software components; Deliverable 4.2 (Data Atlas) Dashboards and WebGIS; Deliverable 4.4 Data Atlas - release 1.0; Deliverable 4.5 Data Atlase - release 2.0). More detailed information about the PHSM taxonomy used by the Data Atlas can be found in PERISCOPE Deliverable 1.1 Taxonomy of policy responses and impact assessment mapping.
- Other deliverables that speak to a cross-section of issues that we discuss here include (i) Deliverable 8.3 Policy Brief, which devotes several sections on the impact of COVID-19 PHSMs on economic and social outcomes, health systems preparedness, and data collection within the EU, issues; (ii) Deliverable 9.1 Best Practice in Multi-level Governance During Pandemics: A Case Study Report which includes discussions of the EU's vaccine procurement strategy, case studies about the implementation of various COVID-19 PHSMs , the role of state capacity to effective PHSM policy making, vaccine hesitancy, tensions between central and decentralized policy making and (iii) Deliverables 8.1 Online workshop: PERISCOPE Workshop on Holistic Policy Guidance for Pandemic Response for Policymakers and 8.2: Online workshop: PERISCOPE Workshop on Holistic Policy Guidance for Health Authorities which sought to engage policy makers and health authorities respectively with regards to issues of multi-level governance, data collection as they relate to pandemic response.

INTRODUCTION

Introduction

INTRODUCTION

The nearly 450 million people living in the European Union (EU) have collectively borne the burden of more than 182 million cases of the COVID-19 disease and at least 1.2 million subsequent deaths as of March 2023.[1] From the vantage point of three years after the World Health Organization (WHO)'s official declaration of the COVID-19 pandemic on March 11, 2020[2], these numbers appear to be an inevitable, statistical fact. However, if one is open to the possibility that people and institutions have some agency in influencing the course of human events, it also follows that the pandemic could have unfolded in ways and with outcomes far beyond the singular one we can observe. In that spirit, this deliverable takes seriously the notion that government COVID-19 public health and safety measures (PHSMs) (e.g., travel bans, lockdowns) played an influential role in shaping the evolution of the pandemic. By both mapping how COVID-19 PHSMs varied over time and across EU countries as well as investigating what factors influenced government policy-making, we hope that the findings and insights presented here can help policy-makers and researchers better prepare for and better respond to the next global public health threat.

During the first year of the COVID-19 pandemic, non-pharmaceutical PHSMs were the main policy tool of governments in combating the spread of the SARS-CoV-2 virus, and correspondingly, the COVID-19 disease that SARS-CoV-2 causes. Though as early as January 20, 2020, the Chinese government confirmed that the COVID-19 disease spread through human-to-human contact,[3] the novel nature of the SARS-CoV-2 virus meant that governments around the world were bereft of the use of vaccines, a policy tool which over the past hundred years has transformed government's ability to effectively stem the spread of infectious disease.[4] Instead, for nearly the first year of the pandemic,

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[1] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

[2] Ghebreyesu, T. A. (2020, March 11). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. *World Health Organization*. Retrieved March 22, 2023, from: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

[3] Kuo, L. (2020, January 21). China confirms human-to-human transmission of coronavirus. *The Guardian.* Retrieved March 22, 2023, from: https://www.theguardian.com/world/2020/jan/20/coronavirus-spreads-to-beijing-as-china-confirms-new-cases

[4] Gross, J. (2021, January 25). Five Past Vaccination Drives and How They Worked. *New York Times*. Retrieved March 22, 2023, from: https://www.nytimes.com/2021/01/25/science/mass-vaccine-drives.html; World Health Organization (n.d.). A Brief History of Vaccination. Retrieved

governments could only rely on non-pharmaceutical interventions (NPIs) to respond to the spreading disease (OECD "Flattening the Curve," 2020). The scale and scope to which governments in the EU (and around the world) made use of PHSMs to respond to the pandemic, both non-pharmaceutical and pharmaceutical, was and continues to be immense. In terms of scale, policymaking has taken place at all levels (e.g., national to subnational) and sectors of government (e.g. Ministries of Health; Education) throughout the pandemic. Tasked by the PERISCOPE Consortium to document such policy actions for countries within the EU, the CoronaNet Research Project (CoronaNet) (Cheng et al., 2020) has systematically mapped close to 50,000 policy actions undertaken by EU states until October 1, 2021 and in doing so has created the most comprehensive dataset for this set of countries and time range to date.

In terms of scope, PHSMs took on a wide variety of forms including those aimed at restricting the movement of people to prevent the spread of the virus (e.g., lockdowns[5], quarantines[6], travel bans, school closures) to others which sought to track the prevalence of the disease in a given population (e.g., contract tracing or the administration of COVID-19 tests), as well as those aimed at mobilizing resources in response to already infected people (e.g., the construction of temporary hospitals, the recruiting of retired doctors and nurses). Even a cursory examination of the enormous corpus of COVID-19 PHSMs makes clear that their adoption was neither uniform across policy types nor across time. Figure 1 plots the broad policy types that the CoronaNet taxonomy maps[7] for COVID-19 policies in EU countries from the beginning of the pandemic through October 1, 2021. As shown in Figure 1, though governments in the EU were able to add vaccines to its

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March 22, 2023, from: https://www.who.int/news-room/spotlight/history-of-vaccination/a-brief-history-of-vaccination

[5] Lockdowns are generally understood as measures that restrict residents to stay in their homes. Other similar measures or commonly used terms to describe similar measures include: stay-at-home policies, shelter-in-place, cordon sanitaire.

[6] Quarantines are measures that target people suspected or tested for carrying a certain disease and subject them to confinement for a set number of days, traditionally 14 days though the length of quarantine time may vary widely. They have a long history of use dating back thousands of years (Drews, 2013).

[7] The full list of policy types are as follows: (1) Anti-Disinformation Measures, (2) COVID-19 Vaccines, (3) Closure and Regulation of Schools, (4) Curfew, (5) Declaration of Emergency, (6) External Border Restrictions, (7) Health Monitoring, (8) Health Resources, (9) Health Testing, (10) Hygiene, (11) Internal Border Restrictions, (12) Lockdown, (13) New Task Force, Bureau or Administrative Configuration, (14) Public Awareness Measures, (15) Quarantine, (16)Restriction and Regulation of Businesses, (17) Restriction and Regulation of Government Services, (18) Restriction on Mass Gatherings, (19) Social Distancing. These policy types are further mapped and explored in PERISCOPE Deliverable 1.1. Taxonomy of policy responses and impact assessment mapping.

policy-making arsenal after the record-breaking development and distribution of COVID-19 specific vaccines in late 2020 (Glassman et al., 2022)[8], NPIs continued to play a substantive part in government pandemic management throughout the pandemic. While the initial NPIs were focused heavily on restricting mobility, as evidenced by the early peaks in e.g., school restrictions, external border restrictions, restrictions on mass gathering and lockdown policies; later as it became clear that COVID-19 was an airborne disease, mask-wearing measures which seek to restrict the spread of airborne droplets without necessarily restricting human mobility, became more common. In general, policies that put restrictions on businesses were among the most prevalent, though there were numerous peaks in the adoption of such policies over time, which suggests the struggle governments faced in balancing between public health and economic interests within their respective jurisdictions. Hygiene measures were conversely among the least prevalent, likely due to the finding that the disease was relatively unlikely to spread through fomite transmission.[9] Meanwhile, the sharp mobilization of health resources early in the pandemic forms a stark contrast to the relatively low mobilization of such resources later on in the pandemic.

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[8] Marsh, S. (2021, December 8). The history of COVID vaccine development. *The Guardian.* Retrieved March 22, 2023, from: https://www.theguardian.com/world/2021/dec/08/the-history-of-covid-vaccine-development

[9] WHO (2020, July 9). Transmission of SARS-CoV-2: implications for infection prevention precautions. *World Health Organization Scientific Brief.* Retrieved March 23, 2023, from: https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions

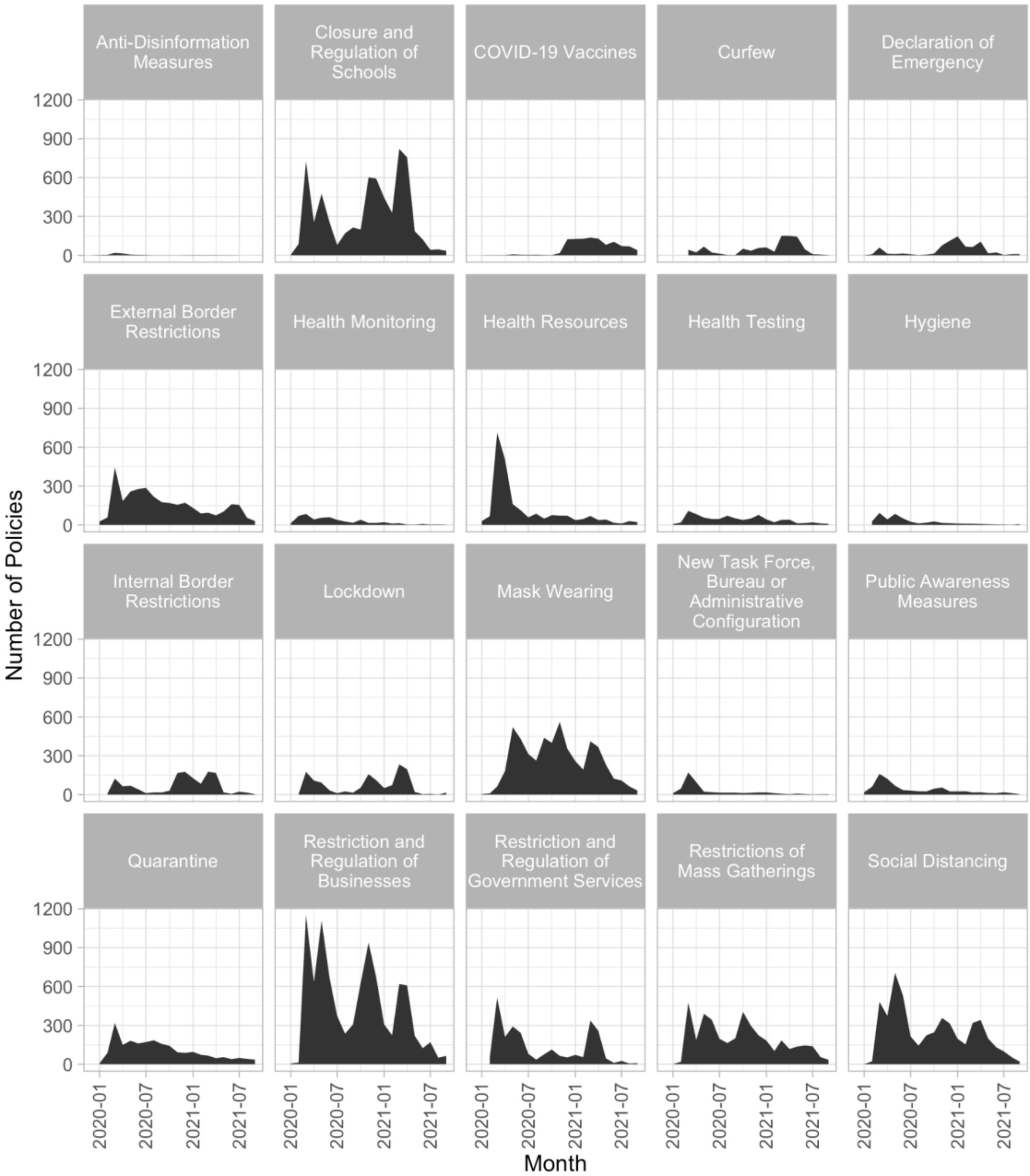

Figure 1: Distribution of number of policies over time per policy type as defined in the CoronaNet taxonomy.[10]

To help make sense of this incredible variation on policy making not only across time, but also across the many different countries in the EU, the first chapter of this report begins with a discussion of the role the EU and its attendant institutions played in setting

[10] Note that (i) 'Mask wearing' policies are separated out into its own category from the 'Social Distancing' policy type in this figure and (ii) Policies plotted for Restrictions and Regulations of Business, Restrictions and Regulations of Government Services and Closure and Regulation of Schools concern policies that impose some kind of restriction on these activities as opposed to policies that announce the lifting of policies in order to ensure that all relevant plots are visualizing policies with respect to restrictions.

the parameters and influencing decisions taken by EU countries. As a supranational regional body with numerous powers and competencies relevant to crisis response and management, understanding how EU institutions and actors responded to the pandemic and interacted with its member states is important for contextualizing how policy responses in European countries developed more generally.

In the second chapter, we then devote considerable time and effort to sift through the experiences of 19 individual EU countries. In our country reports for different EU countries, we provide in-depth qualitative detail not only as to how quickly and how forcefully governments in different countries responded to the pandemic but how these policy decisions influenced COVID-19 case counts and public discourse. While EU member states are similar on a number of dimensions (indeed, as condition for joining the EU they must be, e.g., a stable democracy, adhere to the rule of law, have a functioning market economy and accept EU legislation[11]), they nevertheless exhibit great variation in terms of e.g., their population, governmental structures and healthcare capacity, all of which can influence policy decisions.

After having laid out the landscape of how governments across different countries responded to the pandemic and how such policy decisions were publicly received, the third chapter takes a deep dive into exploring how factors like the structure of government, that is whether a government is federal or centralized (Büthe et al., 2020) or previous experience with authoritarian or democratic politics (Barceló et al., 2022) may explain some of these policy responses. Both chapters suggest that policy-making cannot be divorced from the policy-making environment and a thorough understanding of the latter can help increase understanding of the former.

While we strive to bring greater clarity and insight into understanding of how political and institutional factors shaped the unfolding of the pandemic, perhaps the only thing that will be clear is that this is a complex story; there are no silver bullets or grand theories to explain government policy responses, only nuggets of hard-earned lessons carefully gathered, arranged, and assessed. In short, we acknowledge that ours will not be the last word on how the EU or EU countries responded to the COVID-19 pandemic. With

[11] These are collectively known as the 'Copenhagen criteria'. See: European Union (n.d.). *Joining the EU.* Retrieved March 23, 2023, from: https://european-union.europa.eu/principles-countries-history/joining-eu_en#:~:text=Joining%20the%20EU,-Becoming%20a%20member&text=These%20conditions%20are%20known%20as,legislation%2C%20including%20of%20the%20euro

27 member states and thousands of subnational governments within them (Nam, 2013), there will surely be more nuggets of insight to be found. To help researchers in their future excavations, we spend the final chapter of this deliverable providing a fuller accounting of the data the CoronaNet Research Project has collected for EU countries. In doing so, we help readers adjudicate the value and utility of this dataset by comparing it to other efforts to capture similar data. In the next subsection of this chapter, we also provide a description of how our policy intensity scores (Kubinec et al., 2021), that is, model-based indices that we derive from the raw data to aggregate and summarize the data how we have collected it, can be used to further future research on the drivers and effects of the pandemic. The following subsection then details the methodology we used to collect original data on PHSMs as well as harmonize data from the 6 next largest PHSM data tracking efforts (Cheng et al., 2023). The last subsection of this chapter lays out our thoughts about the lessons learned from tracking COVID-19 PHSMs based not only on our experience but those of the 6 largest COVID-19 PHSM tracking efforts overall (Cheng et al., 2022). Finally, our concluding chapter provides some general thoughts about future challenges for a better understanding of government policy response to public health threats.

As will become apparent in the rest of this deliverable, to research COVID-19 PHSM policymaking involves not only paying special care to the particulars of the type, timing and targets of these policies, but also necessitates a rich understanding of the broader expanse of the institutional and political contexts in which these policies take place, to say nothing of the ever-changing public health situation. Though it is not possible to see how outcomes in any given country may have changed depending on whether a specific COVID-19 PHSM was implemented or not, we can improve our understanding of the factors that led certain governments to certain policy choices. Moreover, by understanding how different countries reacted to the same public health threat, we can build a better foundation for implementing more effective policy responses in the face of future public health threats. By examining how governments responded to the pandemic from a wide variety of angles, we hope this deliverable can forward insight on these research areas.

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1. Chapter 1

EU

Introduction

What is clear from a cursory examination of the European Union (EU)'s pandemic experience is that it did not organize coordinated COVID-19 public health and safety measures (PHSMs) across different EU countries. For example, no EU institution or body mandated the closure of schools or ordered lockdowns either across the EU region or within its 27 member states. Having stated what is common knowledge, it is nevertheless also the case that no understanding of COVID-19 PHSMs undertaken by countries within the EU can be complete without understanding the extent to which the EU shaped them. Indeed, the EU was able to play an influential role in shaping some key areas of COVID-19 response, notably monitoring and tracking the virus, border policies, medical and vaccine procurement as well as economic relief. This chapter provides greater context for understanding not only why a more coordinated EU PHSM response did not occur, but what role the EU actually did play in responding to the COVID-19 pandemic and what these developments suggest for the capacity of both the EU and its member states to respond to future public health threats.

In our analysis, we consider how the EU performed with respect to both the timing and effectiveness in encouraging greater policy coordination among its member states. To preview our findings, we show that while the EU was unable to organize swift action in response to the changing nature of the pandemic, it is difficult to say to what extent this was a function of problems specific to the EU political and bureaucratic machine or a result of general a lack of experience with a swift-moving and oft-changing virus which many other countries also shared. Meanwhile when we separate out the timing of their response from the substance of their response, we find that the EU has generally been able to organize coordinated actions across various policy areas, though its ability to do so has also been a function of its own competencies and resources to do so in a given policy area. In short, far from being a static bureaucracy, the EU has shown itself as adaptive and responsive in working toward building stronger capacities to respond to the next health crisis. However, if their actions in the COVID-19 pandemic is any indication, it may not be able to do so with the swiftness required to effectively address a public health emergency.

We lay the groundwork for this analysis by first introducing the various relevant (i) laws and frameworks and (ii) institutions and actors that set the stage for how the EU and its member states could theoretically respond to health policy crises before the COVID-19 pandemic. We then explore how they, i.e. the various rules and actors, interacted in the face of an actual health emergency: the COVID-19 pandemic. In particular, we explore how the EU and its member states interacted with respect to the following policy areas that they had meaningful competencies over: monitoring and tracking the virus, border policies, economic relief as well as medical and vaccine procurement. We conclude by discussing what the EU experience during the COVID-19 pandemic suggests for its ability to react to public health threats in the future.

Frameworks and Actors in EU health policy crisis response

Frameworks

The relevant laws and frameworks which structured how the EU interacts with its member states in response to a health policy crisis prior to COVID-19 can be found in the overlapping realms of (general) health policy, (specific) health policy crises and (general) policy crises. Overall, these frameworks gave the EU the right, and in some cases the obligation, to initiate coordinated efforts among member states, while also strictly restricting the EU from mandating policy actions to different countries or directly managing health crisis situations. As will be seen below, EU competencies over public health crisis situations can be summarized into three main categories: coordination of political and governmental actors, risk surveillance and assessment, and support for national preparedness strategies and capabilities.

The foundation for structuring these interactions is provided by the 2008 Article 168 of the Treaty of the Functioning of the European Union (TFEU),[12] which officially delineates the respective responsibilities of the EU and its Member States (MS) with respect to the health policy arena more broadly as well as health crises more specifically. With regards to general health policy coordination, it (1) draws a bright line in excluding the EU from, "any harmonisation of the laws and regulations of the Member States". However, it also (2) specifies that the EU should "encourage cooperation between Member States" and

[12] Consolidated Version of the TFEU art. 168 (2008). *OJ C 115*. Retrieved April 26, 2023, from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12008E168

that MS should also “coordinate among themselves” in liaison with the European Commision, with the latter in particular being allowed to take the initiative to promote such coordination.

Meanwhile, with regards to health crisis response (3), it notes that the EU actions in the health policy are allowable insofar as they “complement national policies” and may include actions which “cover the fight against the major health scourges, by promoting research into their causes, their transmission and their prevention, as well as health information and education, and monitoring, early warning of and combating serious cross-border threats to health.” In other words, the EU should take a supportive or complementary role to MS states in dealing with a health crisis, but it may not directly manage it.

Two additional frameworks specifically addresses the scope of the EU’s competencies during public health crises: (i) the 2013 Decision on Serious Cross Border Threats to Health (hereafter the Health Threats Decision)[13] and (ii) the Civil Protection Mechanism (CPM) (Brooks and Geyer 2020, p. 3). The Health Threats Decision, adopted in the wake of the 2009 swine flu outbreak, builds on Article 168 of TFEU, and further delineates the EU’s competencies in response to cross border health threats as: “risk assessment and epidemiological surveillance, support for national preparedness and crisis management capacities and coordination in response to outbreaks” (Beaussier and Cabane, 2020). It further identifies the relevant institutions in charge of these competencies by assigning responsibilities for risk assessment and epidemiological surveillance to the ECDC, obliging member states to report every 3 years on their preparedness and response planning to the European Commission, and delegating coordinative capacity when responding to health crises to the Health Security Committee (HSC). With regards to supporting national preparedness and crisis management capacities, the Health Threats Decision additionally establishes a Joint Procurement Agreement (JPA) which establishes a voluntary centralized procurement mechanism to improve MS states’ collective purchasing power for procuring medical supplies like e.g., vaccinations and drugs. Note, under this procedure, no EU funds are used. Rather national governments may make collective purchases through this mechanism (McEvoy and Ferri, 2020;

[13] Decision 1082/2013/EU (2013). *OJ L 293*. Retrieved April 26, 2023, from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013D1082

Brooks and Geyer, 2020). In our discussion of institutions and actors, we provide more detail on the function and purview of each of the above-mentioned EU bodies.

Meanwhile the CPM, established in 2001,[14] is a system wherein the European Commission coordinates the efficient distribution of strategic resources between EU countries and 8 participating states during emergency situations (De Pooter, 2020). On the one side, MS reports to the European Commission their available strategic resource, while on the other side, any country (regardless of whether they are party to the CPM or not) in an emergency situation can request assistance from the mechanism through the Emergency Response Coordination Centre (ERCC), which is hosted by the European Commission (Kassim, 2023). In 2019, the European Commission further bolstered the CPM by creating the rescEU reserve, which establishes a reserve of resources for responding to emergency situations (including e.g. planes, mobile shelters, medical items). (Kassim, 2023, Brooks and Geyer, 2020)[15]

Finally, the EU also possesses a mechanism for generally dealing with policy crises (i.e. beyond the realm of health) in the form of the EU Integrated Policy Crisis Response (IPCR) mechanism.[16] The IPCR can be activated by the Presidency of the EU Council or any MS and allows the Presidency to coordinate the European Commission and other EU agencies, affected MS and/or other key stakeholders to respond to political crises through e.g. coordinating informal and formal contacts and/or sharing and producing relevant information and reports (Goniewicz et al., 2020, Kassim, 2023).

Institutions and Actors

Given that the number of relevant EU institutions and actors who work within the frameworks outlined above rival that of the 27 member states, in what follows, we aim to provide a brief introduction to the ones most relevant to health crisis response before

[14] European Commission (2023). *EU Civil Protection Mechanism Fact Sheet*. Retrieved April 26, 2023, from: https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/eu-civil-protection-mechanism_en

[15] European Commission (2023). *rescEU Fact Sheet*. Retrieved April 26, 2023, from: https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/resceu_en

[16] Council of the European Union (2018). *How does the Integrated Political Crisis Response (IPCR) mechanism work?*. Retrieved April 26, 2023, from: https://www.consilium.europa.eu/media/45843/ipcr-mechanism.pdf

and during the COVID-19 pandemic, which we hope will improve subsequent understanding of the EU response to the pandemic.

We start with two institutions which are both among the primary decision-making institutions in the EU overall[17] and possess specific competencies for leading and coordinating health crisis responses: The European Commission (EC or Commission) and the European Council (EUCO). The EC "represents the common interests of the EU and is the EU's main executive body" and its day-to-day operations organized into departments known as Directorates-Generals (DG)[18]. With regards to responding to health crises, of particular note is the DG for Health and Food Safety (DG-SANTE), which is tasked with protecting public health as well as the DGI for Research (Forman and Mossialos, 2021). Meanwhile, the EUCO is composed of the heads of states of the different member states and defines political direction and priorities for the EU.[19] As mentioned above, it can activate the IPCR in response to health crises to help coordinate response across EU MS and EU institutions.

There are also a number of complementary institutions that have been more specifically designed for (i) coordination of government bodies, (ii) monitoring and surveillance, and (iii) medical response to health crises in the EU. They are, respectively: the HSC, European Center for Disease Control (ECDC), and European Medicines Regulatory Network (EMRN). The HSC, created as an informal advisory group in 2001 which was subsequently formalized in 2013, is composed of the relevant national health authorities for a given MS and a secretariat maintained by the EC (Kassim, 2023). It provides a platform, though not an obligation, for Member States to coordinate to address serious cross border threats to health (Formann and Mossiolos, 2021).[20] Member states need only report to the HSC and the Commission about the measures they are planning to take, or if the situation is urgent, have already taken in response to cross border threats (de Ruijter, 2019).

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[17] The other two are the Council of the European Union and the European Parliament.

[18] European Union (n.d.). *Types of institutions and bodies*. Retrieved April 26, 2023, from https://european-union.europa.eu/institutions-law-budget/institutions-and-bodies/types-institutions-and-bodies_en

[19] The Council of the European Union (2023). *What is the Council?*. Retrieved April 26, 2023, from: https://www.consilium.europa.eu/en/council-eu/what-is-the-council/

[20] European Commission (n.d.). *Health Security Committee (HSC)*. Retrieved April 26, 2023, from: https://health.ec.europa.eu/health-security-and-infectious-diseases/preparedness-and-response/health-security-committee-hsc_en

Created in 2004 in response to the 2003-2003 SARS epidemic (Brookes and Geyer, 2020), the ECDC takes charge of monitoring and assessing risks to human health from communicable disease though is specifically excluded from direct management of these risks (Deruelle and Engelli, 2021). The 2013 Health Threat Decision delegated the ECDC responsibility for risk surveillance via its maintenance of the Early Warning and Response System (EWRS), which was previously established in 1998 (Beaussier and Cabane, 2020). The ERWS is "a centralized communication system to facilitate the exchange of information on emergency outbreaks between national organizations in charge of disease surveillance" (Deruelle and Engelli, 2021). Notably, the ECDC has purview not only over EU countries, but European Economic Area (EEA) countries as well which includes EU member states as well as Iceland, Liechtenstein and Norway.

Finally, the EMRN forms the cornerstone for approving and supervising medicines in the EU (Calaveri et al., 2021). It is composed of the European Medicines Agency (EMA), the European Commission and the national medicine regulators of the individual MS.

EU response to COVID-19

Our review of the framework and actors relevant to responding to health crises in the EU outlined above offer a straightforward answer to the question of why the EU was unable to coordinate a more cohesive response to the pandemic. In short, the EU's role, as defined by previous frameworks and decisions, is to play a supportive, complementary and coordinating role to the EU MS during a cross border health crisis, but it is decidedly restricted from active management or direct oversight of PHSMs implemented within MS.

There are a number of ways in which the EU can nevertheless still set the parameters and environment for how PHSMs can be adopted or implemented within EU countries. To understand what drove EU response in these areas during the COVID-19 pandemic, in the following, we explore how dynamics among different actors and institutions changed and was influenced by not only the theoretical frameworks and ascribed competencies outlined above, but also by relationships among actors, perceptions of a novel and changing virus. While the sections below are organized in terms of the different competencies that the EU possess to respond to a health crisis, they also roughly follow the chronological unfolding of the pandemic in the EU. As we will see, both previous inexperience with pandemics, MS pushback as well as the unprecedented nature of this particular pandemic likely explain the EU's relatively slow response to the unfolding public health crisis. Nevertheless, however untimely their response, EU institutions did manage to initiate some coordination in policy responses among MS, though their ability to do so was a function of both their existing competencies and resources in a given policy domain.

Early detection and coordination misfires

In order to be able to respond to a cross border health threat, it is first necessary to be able to detect it. The EU's ERWS system is responsible for raising alerts over new threats, which triggers the ECDC to conduct a risk assessment of the threat and when applicable, the HSC is then tasked with coordinating national responses (Brooks and Geyer, 2020). In the event of a cross-border threat which threatens to overwhelm the capacities of a given national state, the Health Threats Decision framework further instructs the MS to activate the CPM (Brooks and Geyer, 2020).

During the first crucial months of the COVID-19 pandemic, these processes were indeed activated as designed, but in large part due to (i) lack of buy-in from MS (ii) lack of resources and coercive capacities by EU institutions, they resulted in slow, lackluster and uncoordinated responses among MS (Forman and Mossiolos, 2021).

The ECDC's early, flawed assumptions about its testing capacity for virus and as well its flawed assessments of the threat of the virus to public health no doubt contributed to the slowness of the EU's response. With regards to their assessment of EU testing capacities, as late as mid-February, the ECDC reported that EU countries were well prepared with respect to testing for the virus,[21] which they based on a survey of the number of laboratories available for testing. However, this assessment did not give due consideration for its basic equipment capacity for contact tracing which were the actual bottlenecks for testing. Their testing guidelines also only advised governments to test mild or symptomatic cases for people who had traveled to places where the virus had already spread, conflicting with the WHO's guidelines to test anyone with signs of symptoms regardless of residence or history of travel.[22] While the ECDC's chief scientist

[21] European Centre for Disease Prevention and Control (2020, February 15). *Are European laboratories ready to detect COVID-19?*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/en/news-events/are-european-laboratories-ready-detect-covid-19
[22] Stockton, B., Schoen, C., & Margottini, L. (2020, July 15). *Crisis at the commission: Inside Europe's response to the coronavirus outbreak*. The Bureau of Investigative Journalism.

explained that the ECDC recognized that broader testing would likely pick up more cases, because Europe was in peak flu season at the time, they worried that the increase in the number of people testing negative would waste coronavirus testing kits.

Flawed testing and data also muddled the ECDC's early assessments of the potential health risk from the virus. These assessments were overall inconsistent and reactive, and as such did not effectively communicate the seriousness of the public health threat of the virus in a timely manner. Lack of information about the virus as well as heterogeneity in MS data quality and collection methods likely influenced the ECDC's assessment that the risk of COVID-19's spread to EEA countries was low for most of January (Formon and Mossiolos, 2021). While the ECDC evaluated the risk to be more serious by the end of January, they issued conflicting messages about how high the risk would be for EEA countries in particular compared to the rest of the world more generally. That is, while on January 22, they revised the risk of the spread of the virus to EEA countries from low to moderate, they simultaneously rated the risk of global spread and outbreaks to be high.[23] On January 28, 2020, they reiterated their assessment that the local transmission of the virus would likely be limited in Europe,[24] though cases in France and Germany had already been reported in the intervening week (Formon and Mossiolos, 2021). While it is difficult to pinpoint why they believed EEA countries would have a lower risk of transmission when they assessed the risk globally to be high, one possibility is that, as the EU Commissioner for the ERCC put, "I think it is only honest to admit that nobody expected that the dimensions of this outbreak would be such here in Europe" because previous experience with such crises e.g. SARS, Ebola, were localized or stopped before spreading globally.[25] It was not until February 23, when cases in Italy had already rapidly climbed in February, which decisively demonstrated that EU countries could indeed fall prey to a virus, that the ECDC first noted that there would be

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Retrieved April 26, 2023, from: https://www.thebureauinvestigates.com/stories/2020-07-15/crisis-at-the-commission-inside-europes-response-to-the-coronavirus-outbreak

[23] European Centre for Disease Prevention and Control (2020, January 22). *Rapid Risk Assessment: Outbreak of acute respiratory syndrome associated with a novel coronavirus, Wuhan, China; first update*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/sites/default/files/documents/Risk-assessment-pneumonia-Wuhan-China-22-Jan-2020.pdf

[24] European Centre for Disease Prevention and Control (2020, January 28). *ECDC statement following reported confirmed case of 2019-nCoV in Germany*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/en/news-events/ecdc-statement-following-reported-confirmed-case-2019-ncov-germany

[25] Herszenhorn, D.M. & Wheaton, S. (2020, April 7). *How Europe failed the coronavirus test*. Politico. Retrieved April 26, 2023, from: https://www.politico.eu/article/coronavirus-europe-failed-the-test/

a high likelihood of similar outbreaks in other EEA countries[26]. Despite this, it took until March 2, 2020 for the ECDC to update its assessment of the risk of infection for people in the EU/EEA and the UK from moderate to high.[27] By that time this assessment arrived too late to be anything but a reactive reflection of the unfolding situation. [28]

While the novel threat posed by COVID-19 can in part explain ECDC's flawed assessments and recommendations, they also point to broader issues with both their lack of remit to compel MS action as well as lack of resources. ECDC assessments are in large based on self-reported data from MS states, which had already previously been noted by various independent entities[29] to be partial, lacking in supporting or precise evidence and problematic for being based entirely on self-assessment (Beaussier and Cabane, 2020). The ECDC itself generally also has limited capacity to conduct independent assessments (Formon and Mossiolos, 2021), though it was able to send ECDC staff in a joint mission with the WHO to Italy in late February 2020 to assess the situation there[30]. While the ECDC is often compared as a counterpart to the United States (US) CDC, it is comparatively understaffed and underfunded. Whereas the US CDC has a budget of 8 billion USD and more than 10k people on staff, in 2020, the ECDC operates with a fraction of these resources with 60 million EU and a staff of less than 300 (Jordana and Triviño-Salazar, 2020; Anderson et al., 2020).

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[26] European Centre for Disease Prevention and Control (2020, February 23). *Threat Assessment Brief: Outbreak of novel coronavirus disease 2019 (COVID19): situation in Italy*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/sites/default/files/documents/novel-coronavirus-threat-assessment-brief-23-feb-2020.pdf

[27] European Centre for Disease Prevention and Control (2020, March 2). *Rapid risk assessment: Outbreak of novel coronavirus disease 2019 (COVID-19): increased transmission globally – fifth update*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-outbreak-novel-coronavirus-disease-2019-covid-19-increased

[28] European Centre for Disease Prevention and Control (2020, February 23). *ECDC statement on the rapid increase of COVID-19 cases in Italy*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/en/news-events/ecdc-statement-rapid-increase-covid-19-cases-italy

[29] PWC (2019, September). *Third independent external evaluation of the ECDC in accordance with its Founding Regulation*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/sites/default/files/documents/third-independent-external-evaluation-of-ECDC-report.pdf ; European Court of Auditors (2016). *Dealing with serious cross-border threats to health in the EU: important steps taken but more needs to be done*. Retrieved April 26, 2023, from: https://www.eca.europa.eu/Lists/ECADocuments/SR16_28/SR_HEALTH_EN.pdf

[30] European Centre for Disease Prevention and Control (2020, February 23). *Threat Assessment Brief: Outbreak of novel coronavirus disease 2019 (COVID19): situation in Italy*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/sites/default/files/documents/novel-coronavirus-threat-assessment-brief-23-feb-2020.pdf

The ECDC's inconsistent messaging about the nature of the virus and flawed assessments of the EU's capacity to respond to a health crisis do not solely explain a lack of effective coordination by EU institutions however. That the HSC could not do much beyond provide a platform of information sharing and coordination of MS is clear from its remit as laid out by the 2013 Health Threats Decision. However, the early months of the pandemic showed how it was unable to perform even this function very effectively without buy-in from MS. Aside from poor attendance from MS states, early coordination efforts also suffered because the number of coordinating meetings were too few or too poorly organized. These patterns could be found from the first efforts to coordinate through to March of 2020. Indeed, while the DG-SANTE initiated an alert notification of a potential cross border health threat from China through the ERWS as early as January 9, 2020, which prompted the ECDC to make a rapid risk assessment of the situation and the HSC to convene its first meeting on January 17, 2020 (Forman and Mossiolos, 2021, Kassim, 2023), the meeting was poorly attended. Only 12 out of 27 member states (and the UK) participated, with disagreement among them as to the seriousness of the threat and the appropriate next steps (Forman and Mossiolos, 2021)[31].

Following this meeting the HSC met more frequently, but the timing and structure of these meetings made substantial progress difficult. Indeed, HSC meetings generally lasted for only one hour with more than 100 participants on the call, too many for effective discussion.[32] Meanwhile though the HSC at some times met every few days, at other times a week or more would go by without a meeting.[33] Even the minimum requirement for MS to inform the HSC of their policy actions was often not fulfilled in the early days as MS took actions without subsequent notification (Beaussier and Cabane, 2020). As

[31] Apparently, the Italian government missed the initial January 17 because they missed the email invitation. See: Herszenhorn, D.M. & Wheaton, S. (2020, April 7). *How Europe failed the coronavirus test*. Politico. Retrieved April 26, 2023, from: https://www.politico.eu/article/coronavirus-europe-failed-the-test/

[32] Stockton, B., Schoen, C., & Margottini, L. (2020, July 15). *Crisis at the commission: Inside Europe's response to the coronavirus outbreak*. The Bureau of Investigative Journalism. Retrieved April 26, 2023, from: https://www.thebureauinvestigates.com/stories/2020-07-15/crisis-at-the-commission-inside-europes-response-to-the-coronavirus-outbreak

[33] Indeed, while sometimes HSC meetings occurred within a few day of each other (e.g. they met on January 22, 2020, and then January 27, 2020, as well as February 4, 2020, and February 6, 2020), other meetings did not occur until a week or more later (e.g. after the February 6, 2020 meeting, they did not meet again until eight days later on February 14, 2020. Similarly, while they met on February 24, 2020, the next meeting following this was seven days later March 2, 2020 and then March 13 2020, eleven days later). See: European Commission (n.d.). *Health Security Committee reports*. Retrieved April 26, 2023, from: https://health.ec.europa.eu/health-security-and-infectious-diseases/preparedness-and-response/health-security-committee-hsc/health-security-committee-reports_en

one participant noted, "When it comes to preparedness for the crisis it's important that we know which measures member states are going to take. But even the committee is informed after the measures are taken. At the beginning, we took measures without informing each other."[34]

This pattern of delayed and ineffective coordination was replicated in other EU fora as well. For example, the Croatian Council presidency activated the ICPR (as previously mentioned, the EU's mechanism for coordinating responses to crises more generally), in its lowest, information-sharing mode on January 28[35], (Kassim, 2023), but did not escalate it to its full mode, which allows for crisis roundtables and proposals for action, until March 2[36] (Goniewicz et al., 2020), after cases in Italy were already piling up. Meanwhile, Italy requested a meeting of the Council of the European Union on January 27 which did not take until more than two weeks later on February 13, 2020[37], at which point the Chair of the meeting prematurely noted that the EU response thus far had been 'prompt and effective.'[38]

A turning point in the EU response occurred with developments of the COVID-19 situation in Italy in late February. While the EU institutions and capacities did not substantively change, the EU and its MS, faced with reports of real cases and deaths as opposed to abstract and inconsistent messages about potential health risks, began to take the threat more seriously (Deruelle and Engeli, 2021). As noted, a substantial shift in coordination took place March 2, when the ICPR was not only escalated to full mode,

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[34] Stockton, B., Schoen, C., & Margottini, L. (2020, July 15). *Crisis at the commission: Inside Europe's response to the coronavirus outbreak*. The Bureau of Investigative Journalism. Retrieved April 26, 2023, from: https://www.thebureauinvestigates.com/stories/2020-07-15/crisis-at-the-commission-inside-europes-response-to-the-coronavirus-outbreak

[35] The information sharing mode allows MS unrestricted access to EU reports and analyses of the contemporaneous COVID-19 situation (Goniewicz et al., 2020); EU2020HR (2020, January 28). *Croatian Presidency activates EU's Integrated Crisis Response in relation to corona virus*. Retrieved April 26, 2023, from: https://eu2020.hr/Home/OneNews?id=160

[36] Council of the European Union (2020, March 2). *Press release: COVID-19 outbreak: the presidency steps up EU response by triggering full activation mode of IPCR*. Retrieved April 26, 2023, from: https://www.consilium.europa.eu/en/press/press-releases/2020/03/02/covid-19-outbreak-the-presidency-steps-up-eu-response-by-triggering-full-activation-mode-of-ipcr/

[37] General Secretariat of the Council (2020, February 13). *Council Conclusions on COVID-19*. Retrieved April 26, 2023, from: https://data.consilium.europa.eu/doc/document/ST-6038-2020-INIT/en/pdf ; Boffey, D., Schoen, C., Stockton, B., & Margottini, L. (2020, July 15). *Revealed: Italy's call for urgent help was ignored as coronavirus swept through Europe*. The Guardian. Retrieved April 26, 2023, from: https://www.theguardian.com/world/2020/jul/15/revealed-the-inside-story-of-europes-divided-coronavirus-response

[38] Council of the European Union (2020, February 13). *Meeting on Employment, Social Policy, Health and Consumer Affairs Council (Health)*. Retrieved April 26, 2023, from: https://www.consilium.europa.eu/en/meetings/epsco/2020/02/13/

but the President of the EC Ursula von der Leyen announced the creation of a 5-person coronavirus response team of commissioners,[39] which clarified and streamlined responsibilities and competencies among EU actors.[40]

Just as the EU was stepping up its coordinative capacities however, many MS states faced with the same reports about the situation in Italy began taking unilateral action in favor of their own self interest. Indeed, though at a virtual EUCO meeting, participants discussed solidarity and collective strategies for addressing the effects of the virus, simultaneously some EU countries also introduced export bans on PPE and border controls with other EU states, a clear violation of European solidarity and freedom of goods and movement (Anderson et al., 2020, Forman and Mossiolos, 2021, Akin Ocak and Erhan, 2021). As we will see in the next sections however, while the spring of 2020 represented a tenuous time for EU solidarity, in general, the EU as a whole managed to move toward greater solidarity over time, though the degree they were able to do so depended to a great extent on its existing competencies and resources to do so.

Towards coordination and convergence

That the EU and its MS in the first few months of 2020 floundered its response is clear. Observers writing contemporaneously feared the worst, with many speculating about the end of EU solidarity (Renda and Castro, 2020, Anderson et al., 2020). However, subsequent months and years of the pandemic demonstrated that once the threat of the virus moved from abstract to concrete, the EU was able to initiate much better coordination over the areas that it had competencies over. While the novel nature of the challenges as well as flares of national self interest meant that this path towards this coordination was not always the very smooth or timely, early critiques and fears about the failure of the EU project were overall laid to rest. As we show in the below, these

[39] European Commission (2020, March 2). *Remarks by President von der Leyen at the joint press conference with Commissioners Lenarčič, Kyriakides, Johansson, Vălean and Gentiloni at the ERCC ECHO on the EU's response to COVID-19*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/en/statement_20_368

[40] Boffey, D., Schoen, C., Stockton, B., & Margottini, L. (2020, July 15). *Revealed: Italy's call for urgent help was ignored as coronavirus swept through Europe*. The Guardian. Retrieved April 26, 2023, from: https://www.theguardian.com/world/2020/jul/15/revealed-the-inside-story-of-europes-divided-coronavirus-response

patterns played out to varying extents with regards to border policies, economic relief and medical procurement.

Border Policies

Though travel restrictions, when adopted early, can potentially reduce the spread of infectious disease (Adekunele et al., 2020, Zhu and Tan, 2022, Grépin et al., 2021), they can also impede the free flow of goods and personnel needed to combat the disease (Devi, 2020). Notably, though border controls have been a defining prerogative of the nation-state to set, in the past decades, many EU MS have mutually agreed to forgo enstating them with respect to each other with the signing of the Schengen Agreement, which since 1995 has guaranteed freedom of movement among European signatories (Wolff et al., 2020). Meanwhile, since 2004, the European Border and Coast Guard Agency (Frontex) has been tasked with coordinating external borders to the EU. Even given these structures however, EU institutions as a whole have limited remit to do more than coordinate border policies among MS.

To that end, in the early months of the pandemic, patterns in border policy making largely echoed the wider patterns we identified above with regards to early monitoring and detection of the virus. For instance, EU institutions issued non-binding recommendations with regards to travel policies, e.g. the ECDC issued travel advice while DG SANTE provided guidelines for entry screening (Deruelle and Engeli, 2021). Despite this, 17 MS ignored these recommendations in favor of unilateral, uncoordinated action to close borders to other EU countries. While MS used different legal bases within the Schengen Border Code to justify their actions, their decisions nevertheless represented a rare break from the spirit of freedom of movement which the Schengen agreement enshrines. These unilateral decisions moreover clearly violated European solidarity, and invited harsh criticism from the Commission (Akin Ocak and Erhan, 2021).

During this crucial moment for EU solidarity, the Commission was nevertheless able to reestablish some degree of coordination over border policies. Even as MS were implementing border bans against each other, after meeting with national leaders on March 16, 2020, the Commission was able to coordinate virtually all MS and parties to the Schengen treaty to implement their recommendation to collectively close travel from third countries.[41] Initially implemented for a 30 day period, it was eventually extended until June 30, 2020, for non EU citizens and residents.[42] The EC was further able to increase coordination on the lifting of both the internal and external EU borders, which was projected as being able to reduce the community transition of COVID-19 (Ruktanonchai et al., 2020). Under EC leadership, the majority of internal MS ministers agreed to lift internal border restrictions to other MS on June 15, with the rest to follow at the end of the month. Meanwhile, the Commission also recommended coordinating the lift of external EU borders on July 1, 2022[43] and after intense negotiations, MS states agreed to reopen borders to 15 countries[44].

In general, however, following the summer of 2020, travel restrictions both within and outside the EU and Schengen regions have been quite patchwork in manner with MS implementing different types of restrictions against different countries and the EU's ability to coordinate such policies remains limited (European Court of Auditors, 2022). Moreover, even the Commission's effort to help coordinate information about these

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[41] Sevis-Gridneff, M. & Perez-Pena, R. (2020, March 17). *Europe Barricades Borders to Slow Coronavirus*. New York Times. Retrieved April 26, 2023, from: https://www.nytimes.com/2020/03/17/world/europe/EU-closes-borders-virus.html ; An exception was Ireland which did not immediately sign onto the Commission's third-country travel ban recommendation. After consulting with the UK government, they decided to adopt travel restrictions to third countries similar to the EU, with an exception for Northern Ireland (See: Schengen Visa News (2020, March 18). *Ireland to Consult With UK Over COVID-19 EU Travel Ban*. Retrieved April 26, 2023, from: https://www.schengenvisainfo.com/news/ireland-to-consult-with-uk-over-covid-19-eu-travel-ban/) ; European Commission (2020, March 3). Communication from the Commission on COVID-19: Guidance on the implementation of the temporary restriction on non-essential travel to the EU, on the facilitation of transit arrangements for the repatriation of EU citizens, and on the effects on visa policy. *OJ C 102 I/3*. Retrieved April 26, 2023, from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0330(02)

[42] Council of the European Union (2020, June 30). Council Recommendation on the temporary restriction on non-essential travel into the EU and the possible lifting of such restriction. *OJ LI 208/1*. Retrieved April 26, 2023, from: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32020H0912&from=EN ; European Commission (2020). *Press release: Coronavirus: Commission invites Member States to prolong restriction on non-essential travel to the EU until 15 May*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_616 ; European Commission (2020, May 8). *Press release: Coronavirus: Commission invites Member States to extend restriction on non-essential travel to the EU until 15 June*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_823

[43] European Parliament (2020, May 19). *Border controls in Schengen due to coronavirus: what can the EU do?*. Retrieved April 26, 2023, from: https://www.europarl.europa.eu/news/en/headlines/priorities/eu-response-to-coronavirus/20200506STO78514/reopening-schengen-borders-after-covid-19-what-can-eu-do

[44] Pigman, A. (2020, July 1). *EU to open borders to 'safe' countries as pandemic accelerates.* Agence France-Presse. Retrieved April 26, 2023, from: https://ednh.news/eu-to-open-borders-to-safe-countries-as-pandemic-accelerates/

diverse border policies to help travelers has been limited by lack of MS participation. Indeed, though the Commission launched the "Re-open EU website" in order to provide an information hub for various travel restrictions, more than a year after it was launched, a third of MS had still not provided updated information to the website, limiting its usefulness (Settembri and Kumar, 2023).

With regards to the economic and health impact of these border restrictions, it is important to note that most initial restrictions to movement unilaterally implemented by MS allowed exceptions for the transport of goods or the movement of seasonal workers or healthcare professionals (Robin-Olivier, 2020). The EC further worked to standardize such exceptions and minimize disruptions from internal EU border closures. To that end, on March 23, 2020 they introduced guidelines and recommendations for 'green lanes' which would facilitate the free flow of movement with regards to the economy (goods, transports and essential workers)[45] as well as health care provision (e.g. healthcare professionals and patients)[46]. These recommendations were extended on October 28, 2020. The Commission further worked with the European Global Navigation Satellite Systems Agency on developing a "green lane" mobile app which helped both drivers and authorities track crossing times.[47] Because the Commission ultimately lacks enforcement power in this area (Settembri and Kumar, 2023), the implementation of these recommendations still need to be worked out bilaterally between MS, and there were initially large gaps in its practical implementation (Logar and Alessandro, 2021). The Commission has been able to help smooth out legislative hurdles that have impeded

[45] European Commission (2020, March 23). *Press release: Coronavirus: Commission presents practical guidance to ensure continuous flow of goods across EU via green lanes*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/%5Beuropa_tokens:europa_interface_language%5D/ip_20_510

[46] European Commission (2020, March 24). Communication from the Commission on the implementation of the Green Lanes under the Guidelines for border management measures to protect health and ensure the availability of goods and essential services. *OJ C 96 I/01*. Retrieved April 26, 2023, from: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ%3AC%3A2020%3A096I%3AFULL

[47] European Global Navigation Satellite Systems Agency (2020). *The Galileo Green Lane App: easing pressure at the EU's internal borders*. Retrieved April 26, 2023, from: https://www.euspa.europa.eu/sites/default/files/greenlane_backgrounder.pdf ; Galileo Green European Union Agency for the Space Programme (2020). *Green Lane proving a hit with drivers*. Retrieved April 26, 2023, from: https://www.gsc-europa.eu/news/galileo-green-lane-proving-a-hit-with-drivers

transport connectivity[48] and ultimately the establishment of green lanes has been lauded as a major achievement of the Commission (European Court of Auditors, 2022).

Overall, though during the initial pandemic response, MS took unilateral and uncoordinated action with regards to internal border policy, a policy area long seen as sacrosanct to the construction of the EU project, these initial responses proved to be neither permanent nor unnegotiable in nature. Within its limited remit, the European Commission was still able to orchestrate some flexibility in the internal border restrictions by recommending the use of green lanes to ensure the flow of goods. Moreover, it was also able to cajole coordination with regards to external border policies as well as the lifting of both internal and external border policies. While ultimately, individual MS states had final authority and responsibility over both internal and external border policy, the EU Commission was able to encourage some amount of coordination in this policy area, though its efforts fell far short of full coordination.

Procurement and Distribution of Medical Resources

The efficient distribution of medical supplies can theoretically lead to better collective health outcomes for all insofar as it can prevent hoarding and ensure that medical supplies are delivered to those in greatest need, thereby reducing overall mortality rates. As we explore further in the below, with regards to medical procurement, we can observe, similar to border policies, a pattern of initial uncoordinated national self-interest in response to the dawning realization of the seriousness of the health threat giving way to a more coordinated, collective response, both regards to non-vaccine and later, vaccine procurement. Moreover, due to the EU's greater remit and tools over medical procurement compared to border policies, EU institutions have arguably been able to orchestrate comparatively greater coordination in this field.

[48] European Commission (2022, May 23). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the regions: A contingency plan for transport*, 3-4. Retrieved April 26, 2023, from: https://www.astrid-online.it/static/upload/com_/com_2022_211_a_contingency_plan_for_transport.pdf

PPE

The CPM, the EU's main instrument for coordinating medical resources was first activated in January to repatriate EU citizens from Wuhan[49] and was also subsequently used for this purpose and to send aid to China in February 2020 (De Pooter, 2020). It was put to test in Europe for the first time however, when rising cases in Italy demonstrated that the virus could no longer be treated as an external problem but an internal one. On February 26, when the Italian government, faced with rising cases and deaths, requested more PPE through the CPM, their request was met with a collective silence from other EU states. As a spokesperson for the European Commission later stated,"[t]he fact that initially no member state responded to Italy's request for assistance in the form of personal protective equipment... at the end of February was a moment of bitter truth for the commission."[50]

This silence was accompanied by the imposition of export bans of medical equipment that further threatened to hamper effective medical response to the spread of the pandemic throughout March and early April. In early March, the European Commission failed to convince a number of EU nations, including France, Germany and the Czech Republic, to lift their export bans of medical supplies.[51] Such bans had real consequences, with Sweden accusing France of seizing millions of health masks intended for Spain and Italy under the guise of an export ban, though these masks were eventually released (Akin Ocak and Erhan, 2021).[52] In this period, France conversely found itself similarly outmaneuvered in its attempt to buy medical supplies, an experience shared by other European nations Germany, Italy, Switzerland, the Czech Republic and

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[49] European Commission (2020, January 28). *Press release: Coronavirus: EU Civil Protection Mechanism activated for the repatriation of EU citizens*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/it/IP_20_142

[50] Stockton, B., Schoen, C., & Margottini, L. (2020, July 15). *Crisis at the commission: Inside Europe's response to the coronavirus outbreak*. The Bureau of Investigative Journalism. Retrieved April 26, 2023, from: https://www.thebureauinvestigates.com/stories/2020-07-15/crisis-at-the-commission-inside-europes-response-to-the-coronavirus-outbreak

[51] D'Emilio, F. (2020, April 3). Scramble for virus supplies strains global solidarity. *Associated Press*. Retrieved April 26, 2023, from: https://www.abqjournal.com/1439863/scramble-for-virus-supplies-strains-global-solidarity.html ; Tsang, A. (2020, March 7). E.U. Seeks Solidarity as Nations Restrict Medical Exports. *New York Times*. Retrieved April 26, 2023, from: https://www.nytimes.com/2020/03/07/business/eu-exports-medical-equipment.html

[52] European Parliament (2020, April 3). *Parliamentary question: Masks intended for Italy blocked by France*. Retrieved April 26, 2023, from: https://www.europarl.europa.eu/doceo/document/P-9-2020-002075_EN.html ; European Parliament (2020, April 3). *Parliamentary question: French export restrictions on protective gear.* Retrieved April 26, 2023, from: https://www.europarl.europa.eu/doceo/document/P-9-2020-002072_EN.html

San Marino who either initiated or fell prey to similar blocks of flow of medical material.[53] These events did not go unremarked by non-EU countries, and some cited a lack of EU solidarity as an impetus to start looking toward other countries like China for aid.[54]

This demonstration of uncoordinated, self-interested behavior among EU states was perhaps in no small part due to scarce levels of PPE reserve stocks in the months and years before COVID-19 appeared on the scene in 2020. Many countries had strategic stocks of masks that were outdated, destroyed and never replaced. Though France, for instance, had 1.7 billion masks in 2011, by 2020 it had only 117 million. Meanwhile, MS also failed to appreciate the necessity for PPE before the rise in Italian cases in February. Before the outbreaks, no country had reported a need for PPE in the HSC meetings, with only 4 countries reporting they would need more if the situation got worse. Moreover, the rescEU instrument, which organizes resources for responding to emergency situations, was not designed to deal for a situation in which "all member states would require the same resources at the same time" (Brooks and Geyer, 2020). While the EU Commission launched a formal assessment of what PPE MS might need on February 5, it took two weeks and missed deadlines by governments before they received any information. When MS failed to respond to the Italian CPM request for more PPE stocks, the Commision realized that it did not have the full picture of the real PPE situation.[55]

Eventually however, the DG SANTE was able to coordinate a number of efforts with regards the distribution of medical supplies and resources (Forman and Mossiolos, 2021). Though the timing of their efforts were often too late to be anything but reactive and damage-minimizing, rather than preventative and damage-averting with regards to the first wave of the pandemic, they built a foundation on which future cooperative efforts could follow. For instance, with regards to medical stockpiles, on March 19, 2020, they "create[d] a specific rescEU medical stockpile as part of the existing rescEU reserve to support EU member states in response to the COVID-19 pandemic", which though welcomed, was also criticized as for its delay in timing (De Pooter, 2020). Similarly, on

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[53] D'Emilio, F. (2020, April 3). Scramble for virus supplies strains global solidarity. *Associated Press*. Retrieved April 26, 2023, from: https://www.abqjournal.com/1439863/scramble-for-virus-supplies-strains-global-solidarity.html

[54] Simić, J. (2020, March 18). Serbia turns to China due to 'lack of EU solidarity' on coronavirus. *Euractiv*. Retrieved April 26, 2023, from: https://www.euractiv.com/section/china/news/serbia-turns-to-china-due-to-lack-of-eu-solidarity-on-coronavirus/

[55] Stockton, B., Schoen, C., & Margottini, L. (2020, July 15). Crisis at the commission: Inside Europe's response to the coronavirus outbreak. *The Bureau of Investigative Journalism*. Retrieved April 26, 2023, from: https://www.thebureauinvestigates.com/stories/2020-07-15/crisis-at-the-commission-inside-europes-response-to-the-coronavirus-outbreak

April 7, the CPM deployed a team from the European Medical Corps[56] to aid Italy, though again too late except to help mitigate an already catastrophic situation. Finally, with regards to aid to third countries, the EU institutions and MS coordinated to create 'Team Europe', which as of September 2022 had delivered more than 47 billion EUR in aid to help third countries address the public health, social and economic effects of the pandemic. [57]

Meanwhile with regards to medical procurement, though the commission had suggested launching a joint procurement of PPE through the JPA as early as mid-January, they only initiated it for medical equipment in February and for ventilators in March, after global stocks were already severely depleted (Deruelle and Engeli, 2021). [58] Despite this delay in timing however, the JPA was eventually able to put 6 procurement bids through June 2020, with up to 26 MS participating in various successful bids of upwards of 2.8 billion EUR for medical equipment like ventilators, goggles, face masks, laboratory equipment and test kits (McEvoy and Ferri, 2020).

In general then, the early breakaway of MS states from EU solidarity turned out to be temporary. While MS reacted unilaterally and nationalistically with regards to medical procurement when the seriousness of the public health threat was made clear, the EU was able to coordinate a more collective response by relying on prior institutions like the rescEU system for coordinating and stockpiling medical supplies and the JPA for procuring additional medical supplies.

COVID-19 Vaccines

The most significant challenge to both medical procurement and distribution was still to come however in the form of the development and distribution of a new COVID-19 vaccine (Beke et al 2023). In contrast to their early missteps with medical procurement of PPE during the COVID-19 pandemic, the European Commission was able to organize

[56] European Commission (2023). *European Civil Protection Pool Fact Sheet*. Retrieved April 26, 2023, from: https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/european-civil-protection-pool_en

[57] European Commission (2022, September 13). *Press release: COVID-19: Team Europe has delivered €47.7 billion to help its partners address the pandemic and its consequences*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_5431

[58] Stockton, B., Schoen, C., & Margottini, L. (2020, July 15). Crisis at the commission: Inside Europe's response to the coronavirus outbreak. *The Bureau of Investigative Journalism*. Retrieved April 26, 2023, from: https://www.thebureauinvestigates.com/stories/2020-07-15/crisis-at-the-commission-inside-europes-response-to-the-coronavirus-outbreak

a much more coordinated response with regards to the procurement and distribution of COVID-19 vaccines, though not without stumbles along the way.

Vaccine Procurement

As early as January 2020, the EC was already issuing calls for and making investments in vaccine research while keeping vaccine development central to discussions with MS (Kassim, 2023).[59] However, its most significant effort to coordinate work on COVID-19 vaccines was realized on June 17 2020, when it revealed an EU vaccine strategy based (i) on securing the production and distribution of vaccines for EU MS through Advance Purchase Agreements (APA) (ii) adapting the EU's regulatory framework to ensure the safety and efficacy of vaccines and (iii) ensuring the equitable and affordable access to vaccines.[60] By proposing a mechanism for MS to pool resources, with MS ultimately being responsible for covering the costs, the Commission argued they could negotiate lower prices and secure vaccine supplies for all member states, an argument that proved to be persuasive given that all 27 MS signed on (Kassim, 2023).

This strategy moreover represented a substantive change insofar previously, the EU Commission's competencies extended only to collective purchase, not distribution of vaccines (Brooks and Geyer, 2020). Indeed, during the 2009 H1N viral outbreak, in large part due to the EU's limited remit for organizing vaccine distribution, inter-MS competition for vaccines resulted in some countries having more vaccines that they could use and others with fewer (van Schaik et al., 2020; Sciacchitano and Bartolazzi, 2021).

That the EU would coordinate vaccine distribution at all was not a foregone conclusion; indeed about two weeks before the announcement of their strategy, 4 MS (France, Germany, Italy and the Netherlands) had already signed a deal with a company from the United Kingdom (UK). Though the European Commission eventually took over this deal

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[59] European Commission (2020, March 6). *Press release: COVID-19: Commission steps up research funding and selects 17 projects in vaccine development, treatment and diagnostics*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_386 ; European Commission (2020, March 16). *Press release: Coronavirus: Commission offers financing to innovative vaccines company CureVac*. Retrieved April 26, 2023, from: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_474

[60] European Commission (2020, June 17). *Communication from the Commission to the European Parliament, the European Council, the Council and the European Investment Bank: EU Strategy for COVID-19 vaccines*. Retrieved April 26, 2023, from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0245&from=EN

in August 2020 (van Schaik et al., 2020), its negotiation of a collective procurement also demonstrated its relative inexperience in such matters. While the UK and US had already made their own vaccine agreements in May 2020, the EU was not able to do so until mid August in part because it opted to negotiate for lower prices over faster delivery (Forman and Mossialos, 2021, Kassim, 2023). That is, in contrast to the US and UK's more partner or investor-based approach to dealing with pharmaceutical companies, the EU acted more like a customer.[61] When production hang-ups stalled distribution later in 2021, deliveries to EU countries stalled while they continued for other countries that had prioritized speed (Forman and Mossialos, 2021).

Vaccine Distribution

Dynamics similar to the EU's experience with vaccine distribution characterized its experience with vaccine distribution.[62] Rollout of vaccines in the EU were significantly delayed compared to the US and UK in large part because the EMA opted for a more thorough but longer approval process.[63] As such, the EMA did not recommend the first conditional marketing authorization of a COVID-19 vaccine until December, which the Commission granted, on December 21, 2020 (Cavaleri et al., 2021), trailing the UK, which was the first country to do so by some weeks (Ledford et al., 2020).

Moreover, the EU itself, along with pharmaceutical companies, was also initially criticized for its slow rollout of vaccines, especially compared to the United Kingdom's relatively faster rollout (Watson, 2021). By March 15, 2021, three months after the initial CMA, 15 million vaccine doses remained unused, with Hungary, Czechia and Slovakia breaking away from the EU to purchase their vaccines from another source (Watson, 2021). Indeed, the WHO itself also felt compelled to criticize Europe's vaccination rollout as 'unacceptably slow'.[64] The Commission itself had already recognized these missteps as

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[61] Pietsch, B. & Ramzy, A. (2021, May 9). Vaccinations are rising in the European Union after a long, slow start. *New York Times*. Retrieved April 26, 2023, from: https://www.nytimes.com/2021/05/09/world/eu-covid-vaccine.html

[62] This issue is also explored in 'Spotlight 1: The European Union's vaccine procurement: solidarity in crisis or crisis in solidarity?' as part of PERISCOPE Deliverable 9.1 Best Practice in Multi-Level Governance During Pandemics: A Case Study Report.

[63] Henley, J. (2021, September 19). Slow but steady has seen the EU win out in the vaccine race. *The Guardian*. Retrieved April 26, 2023, from: https://www.theguardian.com/world/2021/sep/19/slow-but-steady-has-seen-the-eu-win-out-in-the-vaccine-race

[64] BBC (2021, April 1). *Covid: Europe's vaccine rollout 'unacceptably slow' - WHO.* Retrieved April 26, 2023, from: https://www.bbc.com/news/world-europe-56600660

early as February 2021, admitting that the EU was too late in granting authorization, too optimistic about mass production and too trusting that orders would be fulfilled (Hyde, 2021). However, they warned that while countries are free to give individual approval for vaccines without waiting for the EU, the governments would be then responsible for the vaccines as opposed to the manufacturer, as is the case with the EU scheme (Watson, 2021).

By the summer of 2021, however, the EC was able to recover from its early missteps. By pivoting toward a major rollout of Pfizer-based shots[65], not only had more than 70 percent of the adult population in the EU been fully vaccinated, the EU was also able to export more than half of its vaccines (700 million) to the rest of the world, which helped address issues around global vaccine access (Kassim, 2023). Indeed, by August 2021, the vaccination rate in the EU surpassed that of the US, with some attributing this success to the slower vaccination authorization process instilling more confidence in the vaccines and thus willingness to take them.[66]

These aggregate numbers still hid significant disparities in vaccine takeup among different MS (Franic, 2022).[67] Ultimately, the MS have the final say as to whether to employ vaccines, which led to differences across MS with regards to which vaccines were made available, who was prioritized or advised to receive them and when the time gap between the first and second jabs (Forman & Mossialos, 2021). Differences in vaccine hesitancy as well as messaging around the vaccine also led to differences in vaccine uptake (Martinelli and Veltri, 2022; Steinert et al., 2022). The EU Commission's limited remit over vaccine takeup is also evident given that most MS have ignored Commission President Ursula van de Leyen's suggestions to consider vaccine mandates for their countries (Burki, 2022).[68]

[65] Casert, R. & Marcel, P. (2021, August 8). Once lagging, Europe catches up to the US in vaccinations. *Associated Press*. Retrieved April 26, 2023, from: https://apnews.com/article/covid-19-vaccine-europe-surpasses-us-f58d8301dba700337d0998f16667e341

[66] Casert, R. & Marcel, P. (2021, August 8). Once lagging, Europe catches up to the US in vaccinations. *Associated Press*. Retrieved April 26, 2023, from: https://apnews.com/article/covid-19-vaccine-europe-surpasses-us-f58d8301dba700337d0998f16667e341

[67] Steinvorth, D. (2021, July 28). Vast differences between countries undermine EU's claims of vaccine success. *Neue Züricher Zeitung*. Retrieved April 26, 2023, from: https://www.nzz.ch/english/eu-vaccine-successes-hide-vast-disparities-ld.1637729

[68] An early exception was Austria, see: Chadwick, L. (2022). Which countries in Europe will follow Austria and make COVID vaccines mandatory? *Euronews*. Retrieved April 26, 2023, from: https://www.euronews.com/my-europe/2022/02/01/are-countries-in-europe-are-moving-

The Commission's initial ability to coordinate vaccine procurement and ultimate success in distributing them bookended a remarkable feat of EU unity and solidarity. As evidenced above however, the journey along the way was not always smooth. Significant stumbling blocks to getting shots into arms included EU inexperience with the procurement process, caution in its regulatory approach and naive faith in pharmaceutical companies to deliver shipments on time. To be fair however, a substantial number of factors were outside of the EU's prerogative or ability to address, including priority groups for vaccines as well as vaccine hesitancy. All these factors contributed to less than complete vaccination rates, with significant disparities across different countries and demographic groups. Given the inherent complexity of vaccine distribution for any country (Kluge and McKee, 2021), to say nothing of 27 however, it seems likely that the EU's overall success coordinating vaccine procurement and distribution led to higher vaccine uptake than otherwise, though future work should investigate this issue further.

Economic Support

Not only did the COVID-19 pandemic spare no EU economy from its impact, initial projections suggested that the EU could face its greatest economic slump since the Great Depression (Ladi and Tsarouhas, 2020), with some predicting that EU economies would on average suffer a loss of nearly 10 percent of its GDP (Sapir, 2020). In the midst of these dire projections, EU institutions sprung into action and implemented a series of increasingly supportive economic support programs.[69] Indeed, in its response to the economic fallout from the pandemic, EU institutions were able to go far beyond what it

towards-mandatory-vaccination and Greece which imposed a vaccine mandate for people over the age of 60, see: Associated Press (2022). In Greece, unvaccinated people ages 60 and up now face monthly fines. *NPR*. Retrieved April 26, 2023, from: https://www.npr.org/sections/coronavirus-live-updates/2022/01/17/1073623759/in-greece-unvaccinated-people-ages-60-and-up-now-face-monthly-fines . More than a year after COVID-19 vaccines were initially made available, Italy has also imposed vaccine mandates for people over the ages of 50, see: Amante, A., Fonte, G., & Jones, G. (2022, January 6). Italy extends COVID vaccine mandate to everyone over 50. *Reuters*. https://www.reuters.com/world/europe/italy-make-covid-jab-mandatory-over-50s-tighten-curbs-draft-2022-01-05/

[69] See section 'Post COVID-19 recovery strategies in Europe' in 'PERISCOPE Deliverable 1.3 Analytical report comparing recovery strategies at the national and regional levels' for a more in depth discussion of how effective such economic recovery plans actually were in addressing the shock to the economy the COVID-19 pandemic produced.

was able to do not only relative to other policy domains during the pandemic but arguably beyond its response to previous economic crises as well.

Indeed, in the initial months of the pandemic, the EU as a whole engaged in a flurry of activity in order to address various dimensions of the economic fallout of the pandemic starting in March 2020. The European Commission's initial step in this realm was to adopt a "Temporary Framework enabling Member States to use the full flexibility foreseen under state rules to support the economy and businesses" (Ladi and Tsarouhas, 2020). Meanwhile, the European Council anticipated the necessity for allowing MS to increase government spending to address the economic impact of the pandemic. As such following the playbook from the Eurocrisis, the European Council initiated a general escape clause of the Stability and Growth Pact (SGP)[70] , which generally seeks to prevent MS from spending beyond their means. This allowed MS to increase their national spending in response to the pandemic, which by and large, MS took advantage of.

Aside from allowing greater flexibility for domestic spending, the EU also provided its own substantial economic support to MS, with a plethora of different EU institutions stepping in to provide financing. In mid-March, a "pandemic Emergency Purchase Programme" was created as a temporary purchasing program of 750 billion euros of both government and private debt. Subsequently, the ECB decided on June 4, 2020 to increase the original 750 billion to 600 billion for a total of 1,350 billion euros. Meanwhile, on April 2, 2020, the EU Commission proposed the creation of the 100 billion euro Support mitigating Unemployment Risks in Emergency initiatives (SURE) fund in order to help MS address the negative economic and social consequences of the COVID-19 pandemic. Additionally the European Investment Bank created a 200 billion safety net for SMEs in May 2020. And on May 15, the ESM was made responsible for the "Pandemic Crisis Support" 240 billion euro fund which provides cheap loans to Euro member states of up to 2% of their GDP to support direct and indirect COVID-19 health care costs.

[70] "Statement of EU ministers of finance on the Stability and Growth Pact in light of the COVID-19 crisis". (2020, March 23). *Council of the EU.* Retrieved 27 April 2023, from: https://www.consilium.europa.eu/en/press/press-releases/2020/03/23/statement-of-eu-ministers-of-finance-on-the-stability-and-growth-pact-in-light-of-the-covid-19-crisis/

However, the EU's biggest economic support effort was yet to come. On July 21, 2020 the EU Commission helped coordinate an effort to set up the 750 billion EUR Recovery and Resilience fund (RRF) to help countries recover economically from the crisis, in what Truchelweski et al. (2021) characterize as "the mother of all EU compromises" (p. 1369) . The RRF was a historic agreement for not only its size but also because it was the first time that the Commission would be allowed to issue its own debt jointly with MS (Brookes et al., 2021; Ladi & Tsarouhas, 2020). As a temporary fund rather than a permanent one however, it remains to be seen whether it will represent a true paradigmatic shift for economic integration (Schmidt, 2020).

Regardless, the mere fact that it was achieved was not a foregone conclusion by any means. Indeed, before its resolution, both Merkel and Dutch Prime Minister Rutte had publicly sought to temper expectations about the likelihood of reaching an agreement on the RRF by declaring, respectively, that the talks were "will not be easy"[71] and that the chance of a successful conclusion would be less than 50%[72]. To reach this historic agreement, the so-called frugal four countries, Austria, Denmark the Netherlands and Sweden insisted that access to these funds be (i) conditional on preparing a national recovery a resilience plan to be evaluated by the EC and (ii) with payment dependent on satisfactory fulfillment of relevant milestones and targets (Sapir, 2020). Meanwhile, the agreement was also only in possible in part because of Germany's surprising turnaround on both advocating for grants to those MS affected most by the pandemic as well as relenting on its long-held opposition to allowing the Commission borrow on financial markets on behalf of the EU (Howarth and Schild, 2021). Indeed, a Franco-German proposal to distribute 500 billion grants to MS in need in May 2020 helped set the stage for the eventual RRF.

There are a number of reasons why the EU has been able to take such an active role in coordinating economic support for MS. For one, it seems likely that the EU has been able to coordinate efforts to address the economic fallout of the pandemic because of both its greater competencies as well as its ability to learn from and build on its experience reacting to previous economic crises to crises (Ladi & Tsarouhas, 2020).

[71]Reuters Staff (2020, May 27). "Eu fund talks will be tough but we'll get there - Merkel." Retrieved 27 April 2023 from: https://www.reuters.com/article/eu-budget-recovery-merkel-idUKS8N2CV051
[72] Reuters Staff. (2020, July 17). "Dutch PM Rutte says he sees less than 50% chance of EU fund deal." *Reuters.*. Retrieved 27 April 2023 from: https://www.reuters.com/article/uk-eu-summit-rutte-recovery-idUKKCN24I176

Moreover, unlike in previous economic crises where some MS were targeted as being responsible for their negative economic situations, the fact that the pandemic affected was clearly an exogenous shock that affected all MS arguably facilitated a swifter and stronger collective response compared to previous economic crises (Ladi & Tsarouhas, 2020).

Overall, EU institutions' relative success in coordinating an economic policy response to the COVID-19 pandemic can in no small part be attributed to the fact that they had far more experience and mechanisms for coordinating a collective response to the economic impact of the pandemic, compared to border restrictions and medical procurement and distribution. That is not to say that coordination was automatic nor easy. Individual MS and blocs of MS still had substantial agency to shape these packages. Nevertheless, the EU was ultimately able to reach a consensus that has likely helped the region as a whole avert collective economic disaster.

Discussion

The EU project was designed intentionally to balance MS policy discretion while also allowing for the possibility for coordination to reach policy outcomes for the collective good of the group. With regards to health policy in particular, as we have seen, the EU's role is purposely limited to coordination and supporting MS response. With this in mind, how should we evaluate the EU response to the pandemic? While initial assessments of the EU judged the EU response to be a case of 'failing forward' with patchwork solutions cobbled together by an EU constantly under siege from crisis to crisis (Brooks and Geyer 2021), later assessments judged the EU coordinative efforts to be largely successful despite early missteps. Throughout the three policy areas that we have examined, while the EU fulfilled its pro forma to provide MS states with a platform for coordination, a number of additional factors shaped the effectiveness of these efforts. Its sluggishness in recognizing the seriousness of the threat that COVID-19 posed to public health was in part due to the lack of resources invested in relevant EU institutions like the ECDC for doing so, as well as its own inexperience with dealing with pandemic-level public health threats.

Perhaps the greatest challenge that it faced however was the initial inclination of many MS states to act in their own national self-interest. The extent to which the EU was able to overcome these challenges to corral cooperative action was to a great extent a function of its previous experience or competencies in a given policy realm. Border policies, for instance, where EU competencies are relatively limited, have largely been implemented in a patchwork nature with some limited amount of coordination. Meanwhile, the EU was generally able to rely on previous institutions to distribute and procure medical supplies. Its greatest coup in medical procurement and distribution was convincing its 27 MS to agree to allow it to collectively negotiate the procurement and distribution of COVID-19 vaccines. Though its lack of experience in this, admittedly complicated policy area, initially resulted in a slow vaccine rollout, it was able to learn from its setbacks to much greater success in the summer of 2021. The EU was able to make its biggest mark however, with regards to economic support policies, with its crowning achievement being the RRF. Previous experience in navigating similar crises as well as greater competencies in this area helped its success.

None of the EU's successes in coordinating policy responses were a foregone conclusion however. A number of scholars have attempted to explain how the EU was able to overcome its early missteps and coordinate a relatively effective response within scope of its delineated competencies. Some argue the pandemic has helped shift the EU into 'permanent emergency mode' which has in turn, helped it organize adaptative policy responses (Wolff and Ladi, 2020). Other scholars credit the turnaround largely to EU MS leaders themselves, who were able to recognize and effectively communicate the need to engage in coordinated action for the sake of the EU polity to domestic publics (Ferrera et al., 2021). Schmidt meanwhile argues that setting up a dichotomy between supranational (EU institutions) or intergovernmental actors (MS) as the driving force for coordinated action in the EU can only get one so far. Rather, she makes the case that increased politicization of the EU governance process more generally may increase pressure on both sets of actors to cooperate (Schmidt, 2020).

Further research to untangle these dynamics and mechanisms will provide greater insight as to the ultimate success of the EU's current prevention and preparedness efforts for future health crises. While some observers are skeptical that the crisis will prompt changes to grant the EU greater powers to direct policy responses to future crises (Clemens and Brand, 2020), other scholars caution against discounting the dynamic interplay between written frameworks and real actors for creating and potentially institutionalizing adaptive responses to crises (Hervey & De Ruijter, 2020). Indeed, the EU has already been applying lessons learned from this pandemic and making important strides to preparing for future ones, including with the creation of a new DG Health Emergency Preparedness and Response Authority (HERA) as well as greater investment in the healthcare sector with the EU4Health fund, which is allocating 9.4 billion EUR to health from 2021 to 2027, an unprecedented sum (Brooks and Geyer, 2020). However, it remains to be seen how useful these institutions and resources will be to organizing coordinated and effective responses to future health crises. As we shall see below in the country reports on individual policy responses to the COVID-19 pandemic moreover, effective coordination does not necessarily mean the uniform application of policies. Rather, adaptability to individual contexts and conditions will likely play an important role in determining the success of further EU cooperation on health policy.

Whatever the outcome, there will likely be important implications not only for EU solidarity and health crisis response in the future but for global health more broadly. Indeed, more cooperation within the EU is likely associated with better collective health outcomes (Czypionka et al., 2022, Priesemann et al., 2021, Valdez et al., 2022). Meanwhile, as hinted at throughout this chapter, EU solidarity also influences the actions of third parties directly or indirectly. During the pandemic, Trump's threat to exit the WHO directly influenced the EU's support of the institution and likely also informed its commitment to global vaccine distribution. Other research suggests that the adoption of EU regulatory measures in the field of medicine also influences the adoption of medicines in low and middle income countries (Cavaleri et al., 2021). While this chapter and deliverable overall focuses its geographical scope on the EU and its member states, what is also clear from what we have written is that health crises recognize no borders. Examining the EU response to the COVID-19 pandemic in greater depth can hopefully help policymakers and researchers both inside and outside the EU draw lessons for forming more effective responses to health policy crises in the future.

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2. Chapter 2

Country Reports

Introduction

Evolving knowledge about the SARS CoV-2 virus quickly became a matter of public record once the Chinese government alerted the World Health Organization (WHO) of an outbreak of pneumonia in Wuhan, China with unknown origin on December 31, 2019.[73] However, though armed with the same base of knowledge, and faced with a public health threat which made no discrimination among borders or the individuals within them, governments in the European Union (EU) responded to the pandemic with an incredible deal of variation not only across countries but also across time. For instance, some governments implemented a coordinated response across the country (e.g. Hungary) while others implemented relatively decentralized ones (e.g. Germany). Meanwhile most governments implemented relatively strict measures in the first wave of the pandemic (e.g. Croatia, Italy), some did not (e.g. Sweden, the Netherlands), and virtually no governments implemented consistently stringent policy responses throughout the pandemic. To process this enormous amount of variation and lay a foundation of understanding the drivers and effects of COVID-19 public health and safety measures (PHSMs), this chapter presents a series of country reports, 19 in total from the beginning of the pandemic to October 1, 2020, which explores and describes both the variation around government PHSMs in the EU and the political discourse around.

The scale and variety of government policy responses in EU countries is to some extent surprising. For one, countries in the EU are relatively homogenous compared to states outside of the EU insofar as they are relatively wealthy, with relatively educated populations in possession of socialized health care systems. For another, their membership in the EU further means that, as a condition for joining the EU in the first place, member states (MS) must possess e.g. a stable democracy, adhere to the rule of law, have a functioning market economy and accept EU legislation.

To the extent it is possible to identify some commonalities in PHSM responses across EU countries however, they appear to have little to do with the characteristics identified

[73] WHO (2020, April 27). *Pneumonia of unknown cause – China*. Retrieved April 26, 2023, from: https://www.who.int/emergencies/disease-outbreak-news/item/2020-DON229; WHO (2020). *WHO Timeline - COVID-19.* Retrieved April 26, 2023, from: https://www.who.int/news/item/27-04-2020-who-timeline---covid-19

above. Indeed, something that EU countries largely share is that they initially underestimated the seriousness of the public health threat as well as overestimated the extent to which they were prepared for a public health crisis. A likely explanation for this behavior is their lack of previous experience with epidemics like SARS and MERS, which countries in regions like Asia and the Middle East had, which allowed them to more accurately identify the seriousness of the SARS CoV-2 threat and to respond accordingly (Capano, 2020). Indeed, Europe was not unique in this regard and other regions including in e.g., North America and Oceania also lacked this experience. These misperceptions may have been further reinforced by independent studies which suggested that they were among the best prepared for potential pandemics prior to 2020 (Baum et al., 2021).

Meanwhile, though EU countries did share some similarities with regards to their COVID-19 vaccine responses because of the EU's ability to shape coordination in this policy area, they exhibited substantial variation in areas EU institutions had no purview over. To the first point, as can be seen in Figure 2, EU countries in general converged on their peak vaccination levels around the Fall of 2021. This pattern is also consistent with the previous chapter's description of EU coordination around the procurement and distribution of COVID-19 vaccines.

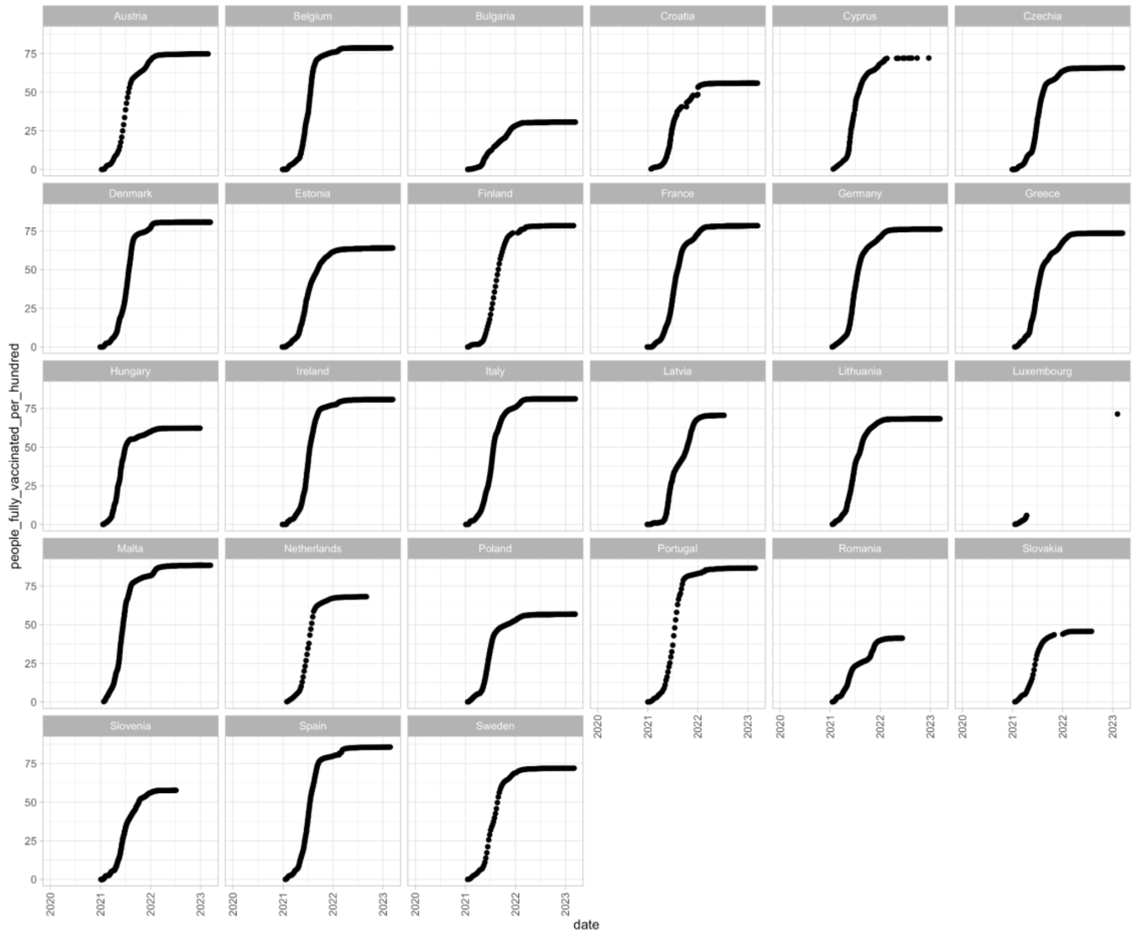

Figure 2: Percent of people fully vaccinated by country from December 31, 2019 to October 1, 2021 (Source: Our World in Data/WHO)

This similarity in timing aside however, vaccine takeup was generally characterized by a substantial degree of variation. Indeed, Figure 2 also reveals substantial variation in the overall levels of vaccination, with vaccine uptake especially low in Eastern European nations like Bulgaria, Romania and Slovakia. In contrast, vaccine uptake was relatively high in Southern Europe countries, like Spain, Portugal and Italy, which had incidentally also been among the first to experience COVID-19 outbreaks. Some factors that may explain differences in the level of vaccine takeup include differences in priority groups, public trust and vaccine hesitancy.[74]

[74] Please see PERISCOPE Deliverable 5.1 for a more in depth study of the issue of vaccine hesitancy in EU countries in particular and Spotlight 3 Vaccine hesitancy: A useful concept? in PERISCOPE Deliverable 9.1 for a discussion about how vaccine hesitancy can be understood conceptually.

More generally it is far more accurate to describe COVID-19 PHSM policy-making in EU countries as having taken place at different times, intensities and toward different target demographics and regions across different countries and different times of the pandemic. As Figure 3 shows, both the number and timing of COVID-19 waves, as measured by the number of COVID-19 cases per million people, varied substantially across both of these dimensions. While some countries, like Lithuania and Latvia managed to delay its first wave of COVID-19 cases until the fall of 2020 for instance, other countries like Italy and Germany faced its first waves early in the spring of 2020. The nature and scale of the waves also changed dramatically over time. Though first waves were often experienced as terrifying and larger than life, compared to subsequent waves that followed within any given country they were mere bumps in the road.

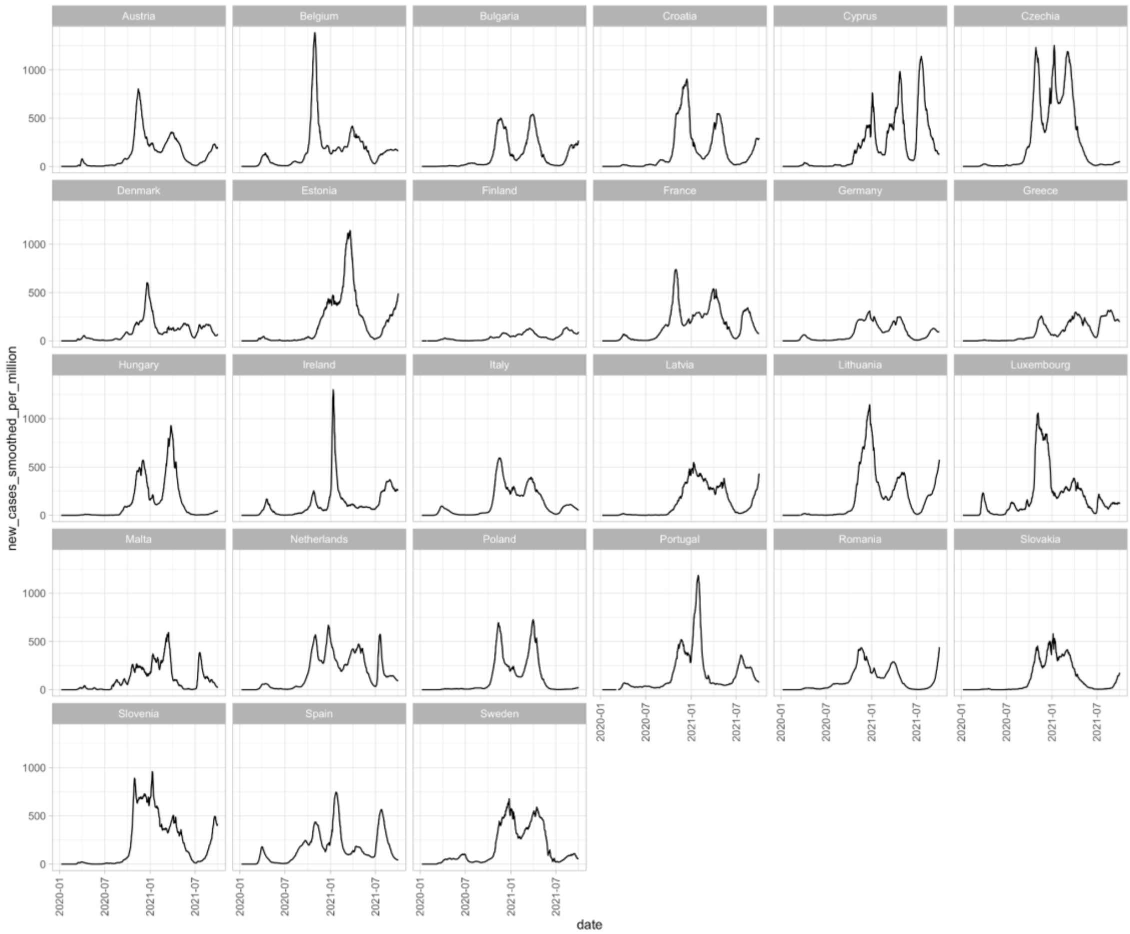

Figure 3: Number of new COVID-19 cases per million from December 31, 2019 to October 1, 2021 (source: Our World in Data/WHO)

Given that the virus itself was more or less uniform in virulence and transmissibility, to a large extent, these differences in COVID-19 waves have been a function of different policy responses to them. What then, explains differences in policy variation? As Plümper and Neumayer (2022) highlight, in researching this question, what is especially puzzling is that the pattern of variation in policy responses depart from what one might normally expect to see based on previous political science theory. That is, while there was variation in policy response in EU countries along a number of dimensions, including government structures and hierarchies (e.g., centralized vs. decentralized governments), political power (e.g.,. democratic vs. authoritarian tendencies), public trust in the government, to name a few, these relationships were not systematic, as will be evident from the subsequent country reports we conducted for the following countries: Austria, Belgium, Bulgaria, the Czech Republic, Croatia, Denmark, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Portugal, Spain, Slovakia, and Sweden, which demonstrate a balance among a variety of characteristics, including wealth, population size, and historic membership in the EU[75] or the Soviet Union. What an overview of these country reports suggests however is that while swift, coordinated responses appeared to be associated with lower case numbers overall, (i) there was neither one main pathway toward achieving this outcome and (ii) similarities in policy drivers themselves did not always lead to similarities in policy outcomes. A preview of the findings from each country report, which we provide in the below, makes clear that policy responses across countries were neither predetermined by previous political institutions and discourse, but neither were they free from them. In particular:

In some countries, existing political structures appeared to play an important role in shaping their government's slow response to the pandemic. As Booth argues, unclear division of power between the Italian central government and regional governments led to an inconsistent and slow policy response during its first wave. Though the central government was able to implement a more coordinated response starting in the Fall of 2020, with the implementation of relatively strict measures and general public support for them, tensions between regional and central governments as well between political powers continued. Similarly, Spain, despite having a relatively coordinated response to the pandemic during its first wave, also devolved largely to decentralized policy making in the later waves of the pandemic. As Ucar argues, this fragmented approach led to poor performance in case numbers.

[75] The original EU member states vs. new ones.

While some countries were mired by their historical political structures, other countries were nevertheless able to overcome them. As Brckic shows, despite historically possessing a highly decentralized government structure to govern its three autonomous regions, political parties in Belgium were able to coalesce around a central institution to coordinate a relatively successful response to the pandemic with regards to case numbers.

Germany, as Fochler shows, was to coordinate relatively effective government responses in times of severe disease outbreaks despite its relatively decentralized government structure in order to effectuate a coordinated response to the pandemic. However, while Belgium's governments kept its policy measures relatively strict through October 1, 2021, Germany's response to subsequent waves became more relaxed.

Straddling the middle between Belgium and Germany was the Netherlands, which Schönfeld shows was similarly able to overcome its historically decentralized style of policy-making to coordinate a relatively unified response to the pandemic, though in all countries there subnational governments still exerted considerable power. Austria, on the other hand, as Öksüz demonstrates, managed to work with its existing federal structure to strike a balance between broad-based and locally targeted policies. However, unlike Austria, Belgium and Germany, Dutch policies were relatively relaxed throughout the pandemic, with most policies being implemented on a voluntary nature, which was associated with relatively higher case counts.

Hussain also finds that coordination among different ministerial bodies in Luxembourg was also important to its relatively successful response to the pandemic. It also had additional advantages however, including a small population and relatively high levels of wealth, both of which undoubtedly also contributed to its ability to test its entire population for COVID-19 as well as a health care system well prepared for handling medical emergencies.

Meanwhile, though Sweden has historically also been characterized by decentralized policy making, due to historical restrictions in central government authority in Sweden, Sweden's Public Health Authority, its expert agency on public health, rather than the executive branch took the lead on pandemic response. The Swedish case also stands out insofar as it started out with relatively lenient measures early on followed by quite strict pandemic measures later in the pandemic as the early lenient measures were judged to have been ineffective at limiting the spread of the pandemic, leading to public dissatisfaction with government performance.

Far from every government had to deal with challenges of coordinating a previously decentralized policy making apparatus however. As Desai demonstrates, Finland's government structure, in contrast, was already characterized as not only being relatively unitary prior to the pandemic, but having high levels of public trust in the government. Because of this, the government was able to coordinate a united and swift response to the pandemic which generally received initial public support, though this public support also grew more divided with time and the implementation of stricter policies. Wesel shows that Denmark was similarly able to benefit from high levels of trust in order to orchestrate a fast and flexible pandemic response which, like FInland, allowed it to keep case numbers relatively low compared to other EU countries.

The ability to effectively coordinate PHSMs does not appear to be sufficient for orchestrating policy responses that can effectively limit the spread of the virus however. Indeed, the Croatian government's response to the pandemic was highly centralized, according to Bechler and Desai, resulting in swift and stringent policy response to the first wave of the pandemic. However, though central coordination continued, the policies the government made were nevertheless inconsistent across time as they struggled to balance public safety goals with economic ones, resulting in uneven performance with regards to COVID-19 case numbers.

Meanwhile, Hartmann argues that Orban was able to not only centralize policy responses to the pandemic in Hungary, but he was also able to further centralize his own power. Indeed, Orban has been relatively successful in his pandemic response insofar as public sentiment appears to support his policy measures, despite experiencing a case fatality rate that was only surpassed by Bulgaria in terms of its poor performance.

Orban's ability to not only hold on to power but increase it is all the more remarkable due to the inability of other governments to hold on to power. Indeed, for other countries, the pandemic proved to be a catalyst of irreversible political change. While, as Ucar points out, pandemic measures implemented in Bulgaria were initially judged to have been effective against the initial wave of the virus, public sentiment judged measures implemented in subsequent waves to be inconsistent, irrational and ineffective. Criticism about authoritarian overreach further contributed to general unrest and protests instigated pandemic measures led to the resignation of the Bulgarian Prime Minister in

April 2021. Conversely, Kahraman shows that while, similar to Hungary and Bulgaria, the Czech government also experienced early success followed by later catastrophe in terms of COVID-19 cases, democratic institutions remained relatively robust to potential authoritarian overreach there.

Meanwhile, democratic institutions themselves also injected various amounts of uncertainty into the pandemic policies. For instance, Lithuania's regularly scheduled elections in October 2020 likely negatively affected the government's ability to implement effective policy response as politicization around the measures themselves intensified with the coming elections. Indeed, the prime minister was voted out of office as a result. Ye finds evidence of even more political turmoil in Slovakia, which underwent not one but two transitions of power through October 1, 2021. While the first transition occurred relatively early on with seemingly little negative effect on pandemic management, the second transition was precipitated by controversy around the vaccine rollout.

Indeed, government policy-making was often led not only by a desire to keep case numbers low but was influenced by political factors like public support as well. For instance, the economic impact of pandemic measures became an increasing case for concern over time. In Portugal in particular, Fochler finds that pandemic restrictions became more business-friendly as the pandemic went on. Similarly, as Kahraman argues, pandemic measures in Greece, proved a heavy burden for the Greek economy to bear given its high reliance on tourism and ongoing debt crisis. An important factor which affected both public support around pandemic measures as well as support for the government was the role that were foreign and domestic disinformation campaigns played in shaping political discourse. Rizvi finds, for instance, that in Latvia, high case numbers in the third wave of the pandemic may also have been a function of effective disinformation campaigns which nudged Latvians into comparative reluctance to receive COVID-19 vaccines.

The short summary of the country reports provided in this chapter demonstrate that untangling the drivers and effects of government responses to the pandemic is no simple affair. We hope that the full country reports presented in the below however, will help make headway on this issue.

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Country Reports

Austria: Country Report of COVID-19 Government Responses by Samet Berk Öksüz

Introduction

Numerous factors have shaped the Austrian government's response to the COVID-19 pandemic, ranging from the state's organizational structure and civil society to the country's health infrastructure. With the state's federal structure and the government's tradition to form coalitions across the political spectrum, Austria's governmental institutions generally foster consensual policy-making. By the beginning of 2020, a new coalition of the conservatives (specifically, the Austrian People's Party) and the greens (specifically, the Green Alternative) had just come into power, confronted with the task of responding to a global health crisis in a timely and efficient manner.

As demonstrated in this country report, the consensus culture of the Austrian democracy facilitated a well-coordinated, quick and effective COVID-19 response at the beginning of the pandemic. Despite being a federal state, Austria employed far-reaching policies such as bans on social gatherings and business closures in a highly centralized and unilateral manner (Hegele and Schnabel, 2021). This prevented the country's healthcare system from breaking down even in times of rising case and death rates (Mätzke, 2021), which Austria experienced later in the pandemic. Though Austria's overall management of COVID-19 cases until October 1, 2021 placed it more or less in the middle of the pack relative to other EU counterparts, the report also shows that the adverse socio-economic impacts of the pandemic restrictions catalyzed public discontent and unrest in the form of protests against the government as well as a rise in distrust in governmental institutions and sources of information.

To do so, the following starts with an overview of the epidemiological waves and junctures of the COVID-19 pandemic in Austria and describes the policies put in place by the Austrian government until October 1, 2021. In the remaining chapters, the country report highlights the impact of the restrictions put in place in the fight against COVID-19 on public opinion and policy-making dynamics between different levels of government.

The COVID-19 Pandemic in Austria: Waves and Junctures

This chapter gives an overview of the epidemiological and political developments during the COVID-19 pandemic in Austria. To do so, it draws from the CoronaNet Research Project's data on the Austrian COVID-19 policy response (Cheng et al., 2020).

On February 25, 2020, Austria witnessed its first positive COVID-19 case in Tyrol, a state known for its winter tourism and ski resorts, likely due to its geographical proximity to Italy, the first European country with confirmed COVID-19 cases of the virus. After the detection of its first COVID-19 case, the Austrian government undertook a number of different actions in response. For instance, it immediately provided health resources such as masks and disinfection kits to public officials. Meanwhile, a few days later on February 28, 2020, the government passed the 'Epidemic Act' to mobilize further resources to contain the spread of COVID-19. On the same day, the Ministry of the Interior launched a public information campaign which introduced a hotline that provided information about the virus.

Aside from these broad-based policies, the Austrian government also took a region-based approach to contain the spread of the virus during the first wave of the COVID-19 pandemic. In March 2020, the country implemented a traffic light system which stressed the regional spread of COVID-19 case numbers per 10,000 inhabitants. For instance, the government of Austria both implemented the strictest level policies and allocated a greater proportion of resources to red, high risk regions such as Tyrol to efficiently contain the spread of the virus. However, local administrations often struggled to enforce local restrictions. As Mätzke noted, the "new government had taken over bureaucracies that were still busy processing a lot of organizational dislocation caused by the preceding government's attempts at consolidating its power in the country's public administration" (Mätzke, 2021, p. 283). As will be discussed in further detail below, the perceived bureaucratic inefficiency arguably contributed to a loss of credibility in the Austrian government and caused many Austrian citizens to turn away from mainstream media and seek alternative news sources instead.

Although the Austrian government lifted most restrictions in the beginning of May 2020, the new virus variants resulted in rising case numbers from around 80 to 800 per million people by November 2020 (Figure 4). Consequently, the Austrian government reenacted many of the previous measures taken in response to the COVID-19 pandemic, such as a mandatory mask-wearing policy in public indoor spaces, and strengthened its policy response in other areas. To prevent the possibility of a double infection with COVID-19 and other respiratory diseases, it introduced a comprehensive flu vaccine campaign. Moreover, the government of Austria heavily focused on COVID-19 testing capacities, providing free COVID-19 testing to the Austrian population and implementing a nationwide testing campaign. In December 2020, there was also a strict curfew between 8 pm to 6 am, a closure of all non-essential businesses, and a ban of cultural and leisure activities.

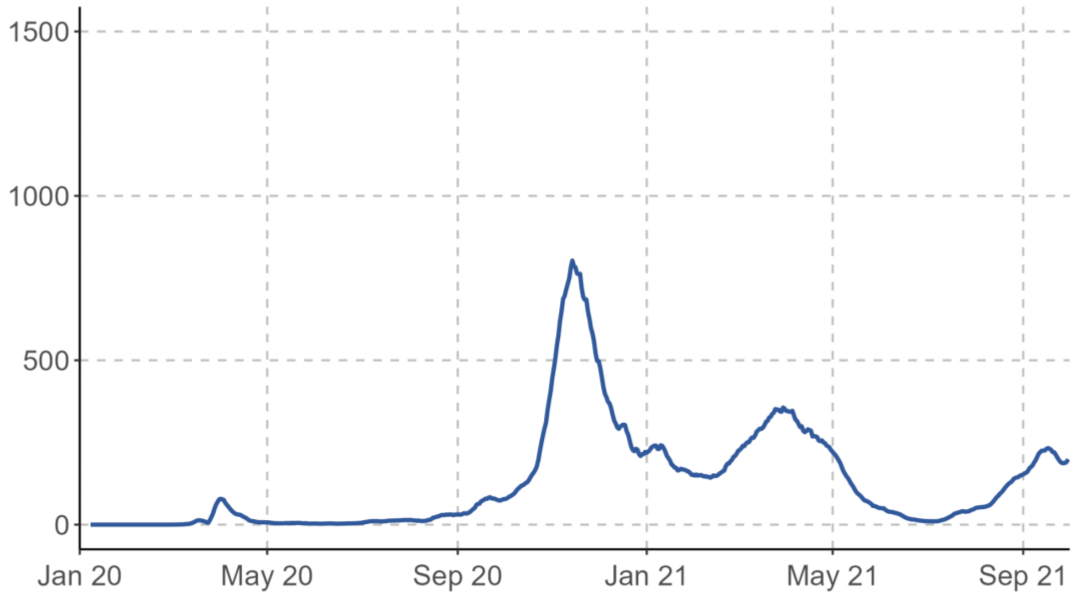

Figure 4: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Austria.[76]

By late 2020, the introduction of vaccines to the policy toolbox drastically changed Austrian policy making strategy. Instead of aiming to contain the spread of the virus, the Austrian government started to focus on reducing mortality and hospitalization rates, especially with the approval of the BioNTech vaccine in early 2021. In January 2021, employees working in environments highly exposed to COVID-19 were obliged to get tested for the virus every three days. Furthermore, to prevent bottlenecks in the healthcare system, the government of Austria sought to implement a compulsory vaccination policy which, however, the Bundestag rejected on April 7, 2021[77]. By May

[76] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer
[77] Oltermann, P. (2022, June 23). Austria scraps compulsory Covid jabs despite rising infections. *The Guardian*. Retrieved April 25, 2023, from: https://www.theguardian.com/world/2022/jun/23/austria-scraps-compulsory-covid-vaccine-mandate

2021, the so-called 3-G-rule became the norm in almost all areas of everyday life, allowing for restrictions to gradually come to an end. The 3-G-rule stipulated for example, to go to the cinema, one had to fulfill one of the three following criteria: either be recovered from a COVID-19 infection, test negative in the previous 2-days, or vaccinated. With 74.7% of the population vaccinated at least twice by November 7, 2022, Austria today places slightly above European standards in terms of immunization coverage[78]. Despite these measures however, COVID-19 cases in the winter and spring of 2021 continued to be high relative to the summer of 2020 through to the summer of 2021.

Altogether, as a federal state, the Austrian government not only implemented policies which applied across the country more broadly, but also took a localized approach to contain the spread of the virus in high-risk regions such as Tyrol at the beginning of the pandemic. In the following waves, it rolled out a strong vaccination campaign resulting in a comparatively high national immunization coverage. While the Austrian government was able to contain case numbers relatively effectively during the first wave, its performance faltered in the subsequent wave. Overall, it performed around average with regards to case numbers and deaths through October 1, 2021 relative to other EU states.

Disinformation and Public Discontent

From February 2020 onwards, the World Health Organization (WHO) continuously reminded governments of the need to fight misinformation about COVID-19 by keeping the public informed and being transparent about the reasoning behind the implemented measures. (Hegele and Schnabel, 2021) The following chapter discusses to what extent the Austrian government managed to put these guidelines into practice.

At the beginning of the COVID-19 pandemic, there was widespread public approval and compliance with the implemented policy measures. In particular, “the longer a measure had been in effect, the higher approval remained for the respective measure” (Kittel et al., 2021, p. 335). However, as the Austrian government announced many policies

[78] European Centre for Disease Prevention and Control. (2023, January 3). *COVID-19 Vaccine Tracker | European Centre for Disease Prevention and Control*. European Centre for Disease Prevention and Control COVID-19 Vaccine Tracker. Retrieved April 24, 2023 from: https://vaccinetracker.ecdc.europa.eu/public/extensions/COVID-19/vaccine-tracker.html#uptake-tab

without an end date, criticisms over these policies began to surface. As noted by Kittel et al. (2021), “the approval of all individual measures has been constantly decreasing since they were introduced.” (Kittel et al., 2021, p. 335). When the Austrian government announced its intention to introduce compulsory vaccination, public discontent and distrust continued to grow. By late 2020, Schernhammer et al, (2021) found that only 46.2% of the respondents believed that the government of Austria was trusted enough to provide safe vaccines. This discontent was expressed not only privately but had real political force. For example, on December 10, 2021, about 44,000 people protested against mandatory COVID-19 vaccines in Austria’s capital Vienna[79].

Right-wing politicians instrumentalized this growing public unrest to not only foster an anti-vaccine agenda, but also to criticize the newly elected conservative-green government (Mätzke, 2021). In response to this criticism, the Austrian government showed two different approaches. On the one hand, it established reliable and transparent information streams such as a COVID-19 hotline to strengthen public trust. On the other hand, it launched a variety of financial aid programs to alleviate the socio-economic burden on society resulting from the measures taken in response to the COVID-19 pandemic. Moreover, the government of Austria allowed exceptions to strict lockdown policies if social distancing rules were followed. Despite the general success of these relief measures, civil society organizations and the media also criticized these packages for their unequal distribution of costs and reliefs among different population groups. (Mätzke, 2021).

To summarize, while the population was generally supportive of COVID-19 restrictions, the Austrian government’s intention to introduce mandatory vaccination resulted in a rise in public discontent and distrust, which in turn created space for right-wing anti-vaccine and anti-government discourses.

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[79] Agence France-Presse. (2021, December 11). Tens of thousands protest against compulsory Covid jabs in Austria. *The Guardian.* Retrieved April 24, 2023, from: https://www.theguardian.com/world/2021/dec/11/tens-of-thousands-protest-against-compulsory-covid-jabs-in-austria

Austria's Policy Response at the Administrative Level

As mentioned above, although Austria mainly responded to the outbreak of COVID-19 at the federal level, the government took a more local traffic light approach for some policy areas such as external border restrictions. The following chapter sheds light on policy making dynamics at the administrative level during the COVID-19 pandemic.

Overall, despite some criticism that the government of Austria overreached its power in decision-making during the COVID-19 pandemic, federal and state-level administrative units worked closely together to contain the spread of the virus. For example, the decision to implement border restrictions based on local infection rates would not have been possible without the capacity of federal states and their administrative units to closely monitor the spread of COVID-19 in their region. Furthermore, at the level of discourse, many policy announcements of local authorities frequently referred to the 'advice' of the Ministry of Health (Mätzke, 2021).

Austria not only demonstrated a harmonized policy response between the federal and state level, but also among different states (Czypionka and Reiss, 2021). By and large, if a federal state implemented a new policy, such as the restriction of hospital visits, other states mostly followed such a decision within a couple of days. Although local authorities were mainly responsible for the implementation and support of governmental decisions made at the national level, they showed initiative for some types of policies that required their local knowledge of the epidemiological situation and administrative capacities.

While healthcare capacities varied from region to region, Austria was able to utilize the country's nationwide digital infrastructure in the fight against COVID-19. Aside from informing the public, advanced tools such as COVID-19 smartphone applications made it possible to trace contact persons as well as to forecast the epidemic using artificial intelligence. Given the dynamic pace in which the pandemic unfolded in Austria, the country's digital infrastructure thus enabled policymakers to not only disseminate real-time information, but also to adapt policy responses to the rapidly changing environment.

Altogether, Austria showed a harmonized response to the COVID-19 pandemic between the federal and state level as well as across the different states. The effectiveness of this strategy was as much dependent on federal leadership as it was on local expertise and cooperation. To that end, local governments were in charge of initiating policies that required strong knowledge of the local epidemiological and infrastructural conditions, allowing for a tailored risk-based approach.

Conclusion

In late February 2020, Austria witnessed its first confirmed COVID-19 case in Tyrol. With a regional spike in infections in this state, the Austrian government not only began implementing strict policies to combat the spread of the virus early on, but also realized the importance of a well-coordinated response to the emerging global health crisis between the federal and state-level governments and administrative units. Accordingly, whereas the federal government remained in charge of far-reaching measures such as lockdown or curfew policies, regional governments initiated policies based on the epidemiological and infrastructural situation in their region, such as bans on visits in nursing homes.

Nevertheless, far-reaching measures implemented by the Austrian government, often implemented without specifying their duration, received strong criticism by the public. This was especially true of the government's attempt to introduce compulsory vaccination. Moreover, right-wing politicians utilized this emerging public discontent to strengthen their anti-vaccination and anti-governmental discourses.

All in all, despite a rise in public unrest around December 2021, the high level of coordination and information exchange between local and federal governments allowed for a tailored, risk-based approach in response to the COVID-19 pandemic. Nevertheless, Austria's ability to contain the pandemic has been only average compared to other EU counterparts and Austrian society still carries the economic and social burden of the pandemic.

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Belgium: Country Report of COVID-19 Government Responses by Milica Brkic

Introduction

In early February 2020, Belgium witnessed its first cases of COVID-19. As the number of cases grew rapidly in the following weeks, policymakers acted swiftly and enacted the country's first lockdown in March 2020.

This country report will argue that Belgium represents an interesting case of crisis management because of the organizational peculiarities of its political system. With a high level of decentralization, the division of decision-making powers between the central and regional governments is unclear in many policy areas which posed one of the biggest challenges in responding to the COVID-19 pandemic. While Belgium was able to overcome these administrative challenges early on, unfortunately this was not enough to prevent it from performing relatively poorly compared to other EU countries for the first year and a half of the pandemic.
In what follows, this country report will first describe Belgium's political landscape in the beginning of the COVID-19 pandemic and how the country adapted its decision-making processes to enable a timely crisis response to contain the spread of the virus. Then, it will explain how the central and regional governments jointly managed the three epidemiological waves that lasted from March 2020 to June 2021. Finally, it will discuss the variation in public opinion on the measures taken during the COVID-19 pandemic.

The Political Context in Belgium

Belgium is a federal parliamentary democracy under a constitutional monarchy consisting of three highly autonomous regions – the Flemish, Walloon, and Brussels Capital Region – and four language communities – French-, Dutch-, German-, and bilingual French- and Flemish-speaking. The political system in Belgium gives substantial power to its regional governments. In recent years, this dual federalism is characterized by ideological heterogeneity since the Flemish government is composed of right-wing and the Walloon government of left-wing political parties (Popelier, 2020a). Before the outbreak of COVID-19, this had already created problems in the formation of majorities at the federal level under the minority government of Prime Minister Sophie Wilmès. Faced with an emerging global health crisis, the executive soon realized that this shortage of parliamentary support would hinder and slow down the country's policy response.

In response, the government of Belgium formed a temporary minority government with the Parliament's full support under the condition that the Parliament takes a vote of confidence every six months. In the first vote of confidence on March 17, 2020, only three out of nine parties refused to give their support (the Flemish-nationalist party N-VA, the Flemish extreme right party Vlaams Belang and the extreme left PVDA-PTB). (Popelier, 2020a). Consequently, during the first wave, the government led by Wilmès ruled with emergency decree powers from March to September 2020 (Van Overbeke and Stadig, 2020).

Although the formation of a temporary minority government with majority support in Parliament helped to speed up decision-making procedures at the federal level, the coordination of policies between the federal and regional governments remained challenging, especially in the early stages of the pandemic. Even technical decisions, such as which facility should be in charge of COVID-19 testing, were time-consuming (Van Overbeke and Stadig, 2020). This resulted in criticism from media and government officials. For example, Belgium's Federal Minister for Health, Maggie De Block called this "playing Wimbledon in slow-motion" (Van Overbeke and Stadig, 2020, p. 311).

In the beginning of March 2020, Belgium's National Security Council (NSC) to some extent managed to provide a solution. The NSC, consisting of the Prime Minister, federal ministers and advisory and monitoring bodies, coordinates governmental actions in times of crisis. Due to the complexity of the COVID-19 pandemic, the Council extended its membership to the regional Minister Presidents (Popelier, 2020b). Together, the newly composed NSC decided to enter a federal phase of crisis management with centralized decision-making, paving the way to implement comprehensive measures across the country to contain the spread of the virus.

Policy types

In practice, this temporary centralized structure clarified the level of responsibility for five different policy types. On the one hand, the federal government had the decision-making power over the most drastic measures with regard to their interference in people's social and economic life and fundamental rights and freedoms (Popelier, 2020b). Followingly, it was in charge of the regulation of schools, residential care facilities, and cultural institutions, policy areas that would normally fall under the jurisdiction of regional governments. On the other hand, regional governments were responsible for measures aimed at mitigating the social and economic impacts of the pandemic. However, on some issues, such as who is responsible for contact tracing apps, competencies remained flexible. This allowed for the possibility to transfer some responsibilities from the federal to the regional level if the proposed measures were too complicated to enforce nationwide. Although this division of authority led to increased intergovernmental cooperation, the federal government remained the initiator of the majority of COVID-19 policies.

Altogether, the Belgian government, historically decentralized, succeeded in centralizing decision-making processes in the fight against the COVID-19 pandemic. However, as will be demonstrated in the following overview of the three waves of COVID-19 infections in Belgium between March 2020 to June 2021, this centralized approach to crisis management had its flaws due to misjudgments of the epidemiological situation.

The trajectory of COVID-19 waves and the policy response

The first case of COVID-19 in Belgium was detected among Belgian nationals who returned from Wuhan, China in early February 2020. At the time, the federal government disregarded COVID-19 as a relevant policy issue and government officials stressed that there was no need to take measures to prevent the spread of the virus. However, with the first indigenous case detected on March 3, 2020 and the number of cases increasing from under 10 to around 350-400 a day[80], the Belgian government quickly abandoned the wait-and-see approach. According to the Government Response Confinement Index (GRCI) which measures the strictness of governments' response to COVID-19, Belgium was one of the EU countries that adopted the strictest measures during the early stages of the crisis, together with Italy, Spain, and Portugal (Aristodemou et al., 2021).

Until mid-2021, Belgium witnessed three distinct COVID-19 waves. As shown in Figure 5, all three waves followed a similar pattern: An increase in COVID-19 case numbers coincides with the beginning of the waves, while the flattening of the curve tends to happen at the same time as the relaxation of measures.

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[80] According to the Worldometer (n.d.) *COVID-19 Coronavirus Pandemic*. Retrieved April 26, 2023, from: https://www.worldometers.info/coronavirus/country/belgium/

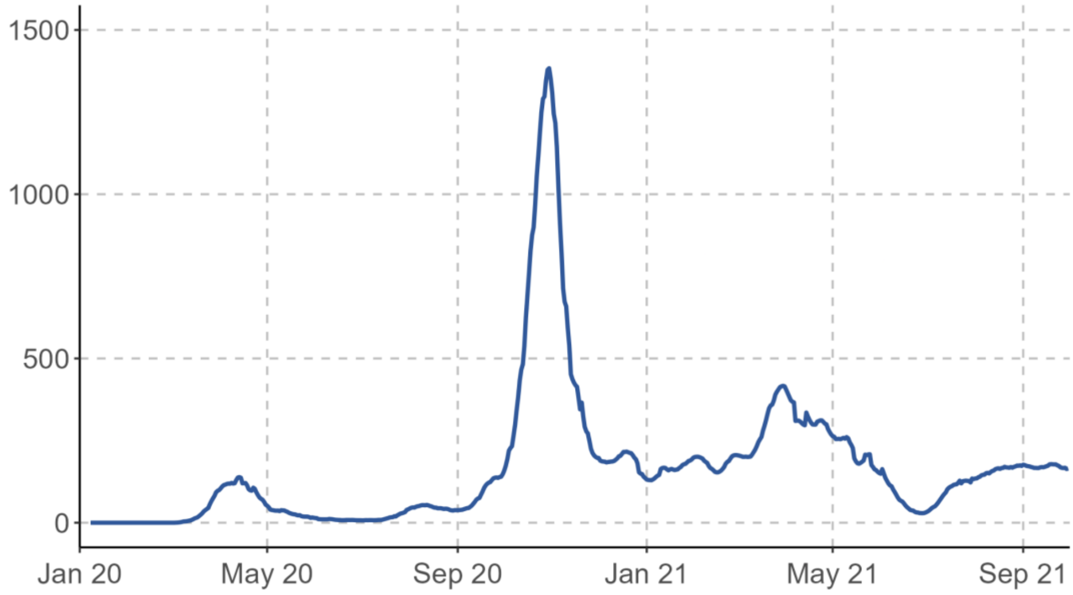

Figure 5: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Belgium.[81]

The first wave

During the first wave between March and June 2020, the government of Belgium implemented its most restrictive policies. Most prominently, the NSC put in place a 'phase-in' lockdown in four stages (He et al., 2020). First, this lockdown closed down schools, restaurants, and cafes and banned public gatherings. Since the number of COVID-19 cases still nearly tripled from March 13, 2020, to March 17, 2020, the NSC decided on a new set of confinement and social distancing measures followed by the closure of non-essential businesses and the restriction of international travel, marking the beginning of the second stage of the lockdown (He et al., 2020). However, faced with continuously growing COVID-19 case numbers, the federal government expanded the lockdown for the third time and closed the Belgian borders. Originally set to last until mid-April 2020, the NSC extended its lockdown strategy until May 3, 2020, on April 15, 2020, corresponding to the beginning of the measures' fourth stage.

Although the government of Belgium put in place such strict lockdown measures, Luyten and Schokkaert (2021) argue that Belgium failed to contain the spread of the virus in other policy areas. On the one hand, the country was facing a major shortage of face

[81] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

masks and hence lacked preparedness in terms of health resources. On the other hand, the federal government did not impose restrictions in nursing homes in the early stages of the COVID-19 pandemic, failing to protect one of the most vulnerable population groups. Despite these shortcomings, Luyten and Schokkaert still conclude that “the response of Belgian policy makers [to the first wave] was rational and not panicked.” (2021, p. 9).

Finally, the Belgian government gradually lifted the lockdown measures from early May 2020 until mid-summer. At first, however, the Walloon and Flemish regional government parties did not agree on how to implement the exit strategy: Flanders were in favor of quickly reopening schools and businesses to limit the negative socio-economic consequences of COVID-19, while Walloon region representatives preferred a gradual reopening to not risk another peak in case numbers (Pornschlegel, 2020). To solve this conflict, the NSC established a new expert group called the “Group of Experts in charge of the Exit Strategy” to draft a gradual de-confinement (He et al., 2020). Starting with the reopening of non-essential businesses and schools, the agreed upon exit strategy next reopened the borders to EU and EEA countries and reallowed public events for up to 10 people (He et al., 2020). In addition, the expert group’s strategy included the upbuilding of health management capacities such as through a “Covid-19 Smart Patch” which enabled doctors to remotely monitor the respiration, heart rate, and temperature of COVID-19 patients (Desson et al., 2020).

The second wave

Despite the measures described above, the number of cases started to rise again in September 2020, signaling the beginning of a second wave and the reintroduction of many restrictive measures. The second wave of the COVID-19 pandemic in Belgium lasted from September until the beginning of December 2020. At the time, the minority government was reluctant to implement stricter measures to contain the spread of the virus which arguably contributed to a larger second wave than necessary (Takefuji, 2022).

Despite these measures, cases rose to an all time high during this second wave, which dragged down Belgium’s overall pandemic performance with regards to cases and deaths compared to its fellow EU member states. Indeed, at the time, Belgium’s infection rate was the worst in Europe. The temporary minority government, though initially able to take action in response to the pandemic, was increasingly mired by regional divisions as time went on. During this time, there were 9 ministers tasked with running the health system which hurt political accountability and were reflective of internal divisions among different government officials, all of which hurt the government's ability to effectively respond to the pandemic.[82]

However, on October 1, 2020, a new majority government came into office and worked more closely together with experts in the NSC to shape policy responses according to the epidemiological situation. Jointly, the NSC and regional governments began to reintroduce stricter measures. At the regional level, governments heavily focused on improving the country's testing strategy. Since most COVID-19-related deaths occurred in long-term facilities under the supervision of regional authorities, they first added so-called resident collectives to the list of testing priorities and by November 2020, had built up sufficient testing capacities to allow for the testing of asymptomatic persons (Van Loenhout et al., 2022). At the federal level, the NSC put in place a new lockdown strategy and by the end of October 2020, had closed the majority of non-essential businesses and limited social contact (Van Loenhout et al., 2022). This second lockdown lasted until April 2021, overlapping with the onset of the third wave in March 2021.

The third wave

The third COVID-19 wave started in early March 2021 and lasted until June 2021. Like during previous peaks in COVID-19 infection rates, the federal government strengthened the measures in place to limit the spread of the virus. For example, it again closed schools, allowed non-essential businesses to stay open only by appointment and lowered the number of people who could meet in public from 10 to 4 (Slautsky, 2021). In addition to these policy responses, Belgium started the vaccine rollout with essential workers and high-risk groups, including people over the age of 65, people over the age of 45 with a known risk factor, and pregnant women. From June 2021 onwards, the general population was able to get vaccinated against COVID-19. Together, strict preventive policies and the immunization of the country's population with the vaccine rollout contributed to the gradual fall in the number of cases. As a result, the government

[82] Baker, J. (2020, November 2). Belgium has Europe's worst Covid-19 infection rate. What did it get so wrong?. *NBC News*. Retrieved April 26, 2023, from: https://www.nbcnews.com/news/world/belgium-has-europe-s-worst-covid-19-infection-rate-what-n1245738

relaxed the lockdown measures and by June 2021, the third wave officially came to an end and cases finally fell to a level not seen since the previous summer. In the following months, the federal and regional governments continued to closely monitor the health situation.

The public acceptance of the government measures

Throughout the three epidemiological waves, public acceptance of government measures varied. During the early stages of the COVID-19 pandemic, the majority of the Belgian population, even the traditionally anti-governmental Flemish community, was supportive of the policy measures implemented by the federal government. Accordingly, a survey conducted in April 2020 finds that trust in government among Flemish citizens was significantly higher than in other countries and just as high as for the French-speaking communities of Belgium (Popelier, 2020a).

However, by mid-April 2020, discontent with the federal government's COVID-19 response began to rise among citizens all over the country which, by the end of April 2020, resulted in a decrease in trust in the government (Popelier, 2020b). There are multiple possible explanations for this shift in public opinion. One of the most polarizing issues was the shortage of personal protective equipment, especially face masks and COVID-19 testing kits. For example, representatives of the healthcare sector strongly criticized this lack of health resources with regard to the federal government's proposal to allow one visitor in residential care centers (Popelier, 2020a). Because of this public backlash, the federal government had to suspend the disputed measure. Another proposed measure that was strongly contested and resulted in widespread public discontent was the decision of the Minister of Home Affairs to allow the police to check people's homes without a search warrant upon suspicion of private parties despite the lockdown (Popelier, 2020a). With the following third wave, Belgian citizens became more and more dissatisfied with the government's stricter measures aimed at controlling the spread of the virus. In November 2021, these negative public sentiments culminated into a mass demonstration in Brussels.[83]

[83] Levaux, C., Cotton, J., & Siebold, S. (2021, November 21). Clashes break out in Brussels in protests over coronavirus restrictions. *Reuters*. Retrieved April 27, 2023, from: https://www.reuters.com/world/europe/around-35000-protest-against-covid-restrictions-brussels-police-say-2021-11-21/

All in all, public discontent was highest during the rule of the minority government until October 2020 whereas the centralized measures implemented by the federal government to contain the spread of the virus received the least criticism. COVID-19, thus, revived a debate about the usefulness and efficacy of the dual federal system of government in Belgium, a recurring theme in public discourse over the years (Van Overbeke et al., 2020).

Conclusion

By way of conclusion, Belgium stands out as a unique case among federally organized states in its fight against COVID-19 as the country managed to reconcile its complex governmental structures to be capable of making decisions. During the three COVID-19 waves, the majority of policy decisions hence were made at the national level and applied across the country. As demonstrated above, with the help of the NSC, the federal government not only enhanced its legitimacy by incorporating regional governments in the decision-making process, but also centralized policymaking in many areas, allowing for a timely response to the COVID-19 pandemic.

However, in the midst of the COVID-19 pandemic by the beginning of June 2020, Belgium had the highest case-fatality ratio (16.3%) and mortality rate per 100 000 (80.65) people (Desson et al, 2020), leading the international press to name Belgium the 'champion of coronavirus' and many scholars to conclude that the country failed at managing the pandemic (e.g. Luyten and Schokkaert, 2021). When evaluating Belgium's response to the pandemic based on such statistics, it is important to take into consideration that Belgium was the only country to include both suspected and confirmed COVID-19-related deaths in its reported numbers. Nonetheless, Luyten and Schokkaert (2021) reveal that, although less drastic, Belgium's death toll remains high after correcting for suspected COVID-19-related deaths in comparison to other European countries like Germany and Denmark. As argued above, this, to some extent, can be attributed to the lack of measures taken in nursing homes to contain the spread of the virus during the first lockdown as well as a rather late reintroduction of restrictions in the fall of 2020 which led to an all time high in cases.

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Bulgaria: Country Report of COVID-19 Government Responses by Ömer Ucar

Introduction

This report explores how Bulgaria, a Balkan country bordering the Black Sea, dealt with the various public health and political challenges caused by the COVID-19 pandemic. To do so, it provides a comprehensive analysis of the political and social dynamics of the pandemic in Bulgaria from its onset until October 1, 2021. Specifically, it not only describes the COVID-19 public health and safety measures the Bulgarian government made in response to the pandemic but also explores how these measures impacted Bulgarian politics and political discourse. Additionally, it also gives a brief overview of Bulgaria's performance in terms of infection and mortality rates, as well as the strengths and weaknesses of its response.

Overall, no other EU country experienced worse health outcomes than Bulgaria with regards to COVID-19 deaths through October 1, 2021. Such an outcome would have been difficult to predict in the first months of the pandemic given that, similar to other European countries, Bulgaria did not identify its first cases of COVID-19 until the beginning of March 2020 and the Bulgarian government implemented a first round of measures which managed to keep the infection and mortality rates relatively low compared to other European countries (Džakula et al., 2022). However, despite this solid initial start, Bulgaria's health trajectory took a drastic turn for the worse once the autumn 2020 months arrived. During these months, daily confirmed case numbers in Bulgaria reached their first peak and were tenfold compared to that of the previous spring. This was followed by the second and third waves, in which numbers hit as high as 705 confirmed cases per million people by October 30, 2021[84].

Bulgarian domestic politics did not survive unscathed from these public health challenges. Complaints about how COVID-19 PHSM's infringed on civil liberties and were implemented with poor communication and poor policy design plagued the government. Meanwhile, grievances about the government's autocratic tendencies more

[84] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 28, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

generally led to government protests as early as June 2020, ultimately leading to the resignation of the Bulgarian Prime Minister in April 2021[85] [86].

The main text of this country report explores these two main issues: Bulgaria's policy response and poor pandemic performance on the one hand and its effect on Bulgarian political discourse and politics on the other hand, in turn.

Policy measures made in response to the COVID-19 pandemic

To foreground this discussion of policy measures made in response to the COVID-19 pandemic in Bulgaria, this report relies on data provided by the CoronaNet Research Project (Cheng et al., 2020) to give an overview of Bulgaria. The dataset shows that the country largely took a centralized policy making approach to dealing with the pandemic, though some subnational policy making did take place.[87] Meanwhile, the dataset shows that the Bulgarian government was most likely to make policies that dealt with 'restriction and regulation of businesses' and 'restrictions of mass gatherings.' The next most common policies were external border restrictions, COVID-19 vaccines, and social distancing.

However, this aggregate summary can only offer a partial picture of the Bulgarian government's COVID-19 policy response. In what follows is an overview of not only what policies were implemented, but when the Bulgarian government implemented and what the associated repercussions there were for the COVID-19 case numbers and deaths.

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[85] Nikolov, K. (2021, April 16). Borissov resigns, takes immediate paid leave. *Euractiv*. Retrieved April 23, 2023, from: https://www.euractiv.com/section/politics/short_news/borissov-resigns-takes-immediate-paid-leave/

[86] Beswick, E. (2020, July 14). Bulgaria's anti-government protests keep pressure on PM Boyko Borissov. *Euronews*. Retrieved April 24, 2023, from: https://www.euronews.com/2020/07/14/bulgaria-s-anti-government-protests-keep-pressure-on-pm-boyko-borissov

[87] Note that the CoronaNet dataset documents 598 policies made at the national level in Bulgaria and 142 policies made at the subnational level. However, these numbers themselves do not provide an accurate reflection of the relative level of national vs. subnational policy making in Bulgaria given that the CoronaNet dataset only made a systematic make an effort to document policies at national level, not the subnational level, for Bulgaria (see Chapter 4: CoronaNet Research Project database of EU PHSMs in this deliverable for more information). However, the content and substance of the policies captured reflects Bulgaria's centralized policy-making approach.

Epidemiological waves and political developments

As seen in Figure 6, Bulgaria had four phases of infection through October 1 2021 and in what follows I discuss policy responses during the first months of the pandemic, as well as the waves leading up to October 1, 2021.

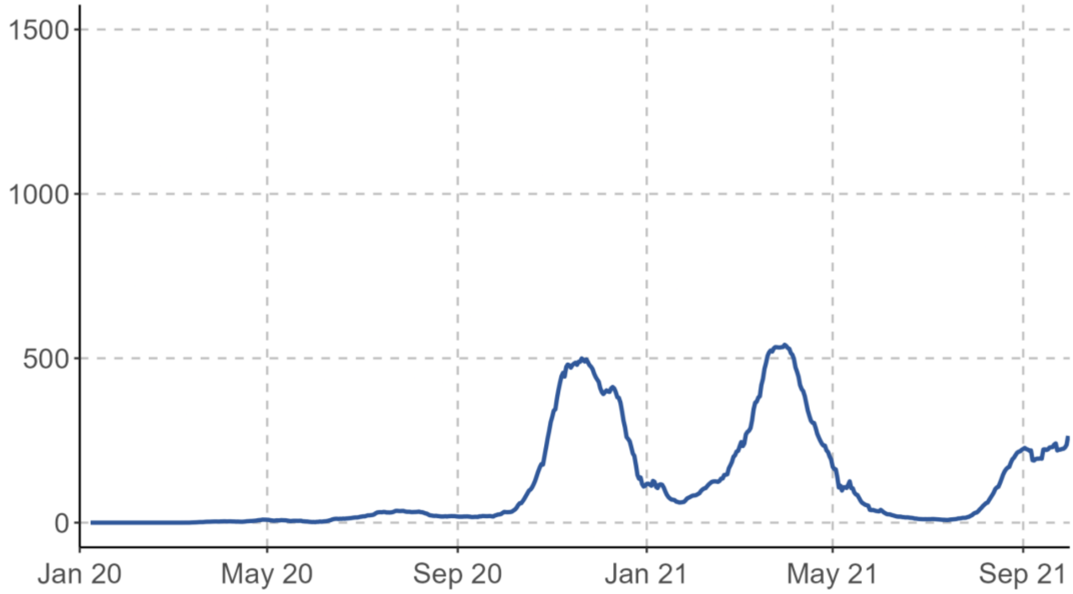

Figure 6: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Bulgaria.[88]

The initial phase:

The Bulgarian government started implementing policies to attempt to circumvent the negative impacts of the virus shortly after the country had its first confirmed cases in early March 2020. Bulgaria's policy response to the pandemic had a highly centralized character, wherein the parliament of Bulgaria played an instrumental role in the decision-making processes and enforcement of the policies set out. In the first three months of the pandemic, Bulgaria enjoyed a steady state with mild case numbers, with a very mild wave of cases, both on an absolute level as well as relative to future waves, as well as as shown in Figure 1 (Džakula et al., 2022).

[88] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

The country reported its first confirmed cases on March 8, 2020, when two men from Pleven and two women in Gabrovo tested positive[89]. The virus' transmission across the country followed a slow, steady growth until May 2020, and did not reach threat-posing levels and enjoyed moderately low case numbers (Džakula et al., 2022).

One reason for the unthreatening case numbers was the country's coincidental geographic advantage, being farther away from the countries that were hit the hardest such as Italy and Spain. However, the primary underlying reasons behind the successful containment of the virus initially were the promptly announced State of Emergency and the ensuing lockdown imposed on March 13, 2020 (Džakula et al., 2022). The lockdown brought strict measures, including disallowing cross-country movement, banning visits to public parks, limiting grocery store and pharmacy visit times for specific age groups, suspending classes in schools, and many more[90].

By May 13, 2020, the government withdrew from the State of Emergency and adopted a "Sanitary Emergency" to facilitate a gradual return to normalcy and ease the restrictive measures on citizens[91]. Although this new regulation was intended to be effective for only one month, the government extended it multiple times throughout the pandemic's lifetime. Starting in mid-May, restrictions began to lift in some areas of life, with e.g. hotels, fitness centers and gyms, large shopping centers and kindergartens being allowed to reopen. Indoor events, including e.g. sports and entertainment events, conferences and exhibitions were also allowed with limited attendees during this time. In the first half of June, restaurants and cafes and nightclubs were further allowed to reopen. With the exception of a week in June, masks remained mandatory in public spaces however[92].

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[89] Crisis24 (2020, March 8). Bulgaria: Government confirms first cases of COVID-19 March 8. *Crisis24*. Retrieved April 23, 2023, from: https://crisis24.garda.com/alerts/2020/03/bulgaria-government-confirms-first-cases-of-covid-19-march-8

[90] United Nations Human Rights Office of the High Commissioner (OHCHR) (2020). *Information by the Republic of Bulgaria. Contribution to the letter and a questionnaire addressed by several mandate holders of the Special Procedures on Protecting human rights during and after the COVID-19*. Retrieved April 28, 2023, from: https://www.ohchr.org/sites/default/files/Documents/HRBodies/SP/COVID/States/Bulgaria.docx

[91] ibid.

[92] Koleva-Kolarova, R.(2020, April 6). Bulgaria's Response to the Coronavirus - Now Updated. *Cambridge Core Blog*. Retrieved April 25, 2023 https://www.cambridge.org/core/blog/2020/04/06/bulgarias-response-to-the-coronavirus-pandemic/

The first wave:

While case number stayed relatively low during the summer months, this was associated with having relatively stringent measures in place. As measures began to ease in severity, case numbers slowly began to rise and by the autumn of 2020, the case count began to look grim[93]. Indeed, from mid-October 2020, infection numbers rose tremendously, eventually reaching a peak of approximately 3350 new daily confirmed cases in mid-November (Mathieu et al., 2020). In light of relentlessly increasing cases, the Bulgarian government introduced a second – this time 'partial'- lockdown to be in effect as of November 27, 2020. The lockdown - slated to stay until December 22, 2020 – once again entailed rigorous measures for the country's fight against the virus[94]. These preventive measures required children from kindergartens and nurseries, as well as students at schools and universities to remain at home.

On top of these restrictions, all extracurricular activities, conferences, and cultural and entertainment events in cinemas, museums, and galleries were again suspended. Shopping malls, bars, and restaurants were only allowed to offer takeaway services to customers[95]. In addition to these policies, the government extended its Sanitary Emergency until January 2021. Given that preventive policies proved to be inadequate in lowering the number of cases, the government declared an extension for this partial lockdown until the following year. Many analysts believed the decision to impose the lockdown was long overdue due to the severe pressure on the nation's health system, preventing many individuals from accessing proper medical care[96]. While these policies were in place, Bulgaria received its first batch of COVID-19 vaccines at the end of December 2020, and vaccination campaigns took off[97].

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93 Ibid.

94 Economic.bg (2020, December 18). The partial lockdown is officially extended until January 31. Retrieved April 25, 2023 from: https://www.economic.bg/bg/a/view/chastichnijat-lokdaun-oficialno-se-udyljava-do-31-januari

95 *Novinite* (2020, November 11). Bulgaria under Partial Lockdown from Tonight, 27 November. Retrieved April 25, 2023 from: https://www.novinite.com/articles/206757/Bulgaria+under+Partial+Lockdown+from+Tonight%2C+27+November

96 Marinov, G., & Rangachev, A. (2020, December 21). *C*OVID-19 in Bulgaria—Crisis control or a new national catastrophe?. *Capital.Bg*. Retrieved April 24, 2023 from: https://www.capital.bg/politika_i_ikonomika/redakcionni_komentari/2020/11/21/4155405_covid-19_v_bulgariia_-_kontrol_vurhu_krizata_ili_nova/

97 Hadjiyski, V. (2020, December 27). The coronavirus in Bulgaria: The health minister gave the start of the vaccination (chronology). *Dnevnik*. Retrieved April 24, 2023 from: https://www.dnevnik.bg/bulgaria/2020/12/27/4157498_koronavirusut_v_bulgariia_zdravniiat_ministur_dade/

The following waves:

Although a downward trend could be seen in daily new infections in the winter of 2021, the case numbers steadily increased at the end of February and ultimately hit a new record with approximately 5,100 daily confirmed cases in March[98]. As a direct result of this, the government declared its third lockdown for ten days, closing down many areas of leisure such as bars, restaurants, cinemas, and casinos[99]. After the lockdown, toward the end of April 2021, the Health Minister of Bulgaria publicly declared that the country had gotten past the second wave[100].

During the summer of 2021, the infection rate slowed down again, though the country found itself in the middle of another wave in October 2021. This can be ascribed to the vaccination rate, despite the fact that it was the lowest in the European Union when the country entered its third wave. Misinformation, poorly run immunization programs, and inconsistent messages from politicians and health officials precipitated only 26,4% of the population choosing to be fully inoculated[101]. In a nationwide study, a sizable number of Bulgarians made dismissive claims about the virus, saying that COVID-19 was formulated in a laboratory or as a means for pharmaceutical corporations to make profits[102].

Overall, this section has shown that during the first months of the pandemic, a time in which most countries in Europe were suffering from a staggering number of cases, Bulgaria's government managed to keep the health crisis remarkably under control. Their luck would run out however, and by the fall of 2020, Bulgaria was hit by a severe wave of COVID-19 cases. Pandemic response during Bulgaria's subsequent waves was

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[98] According to the Worldometer (n.d.) *COVID-19 Coronavirus Pandemic*. Retrieved April 28, 2023, from: https://www.worldometers.info/coronavirus/country/bulgaria/

[99] Bozukova, M. (2021, March 18). Bulgaria enters a 10-day lockdown from Monday. Mediapool.bg. Retrieved April 24, 2023 from: https://www.mediapool.bg/bulgaria-vliza-v-10-dneven-lokdaun-ot-ponedelnik-news319515.html

[100] *Novinite* (2020, November 11). Bulgaria under Partial Lockdown from Tonight, 27 November. Retrieved April 25, 2023 from: https://www.novinite.com/articles/206757/Bulgaria+under+Partial+Lockdown+from+Tonight%2C+27+November

[101] Gomez, J. (2021, December 10). *Bulgaria's vaccination rate is the lowest in the EU*. Euronews. Retrieved April 25, 2023 from: https://www.euronews.com/2021/12/10/covid-in-europe-bulgaria-s-vaccination-rate-is-the-lowest-in-the-eu

[102] Petkova, M. (2021, November 1). Why does Bulgaria have the EU's lowest vaccination rates? *Aljazeera.* Retrieved April 25, 2023 from: https://www.aljazeera.com/features/2021/11/1/why-is-bulgaria-struggling-with-covid-19-vaccination

characterized by poor timing and communication, both of which helped lead to its poor pandemic performance in later months.

Political Discourse during the COVID-19 Pandemic

In this section, I will explore the interplay between this pandemic experience with political discourse and politics in Bulgaria. As we will see, ultimately, the COVID-19 pandemic coincided with a time of severe political unrest in Bulgaria, eventually leading to the resignation of its prime minister. While the issues surrounding the prime minister's removal ultimately were rooted in issues that long predated the pandemic, neither was it completely independent of the pandemic either.

As previously mentioned, while the Bulgarian government implemented a 'centralized governance model' to enact COVID-19 PHSMs (Džakula et al., 2022) to much success in the first months of the pandemic, this centralized model also offered citizens a focal point for their discontents with regards to pandemic policies. Indeed, from the beginning of the Bulgarian government's implementation COVID-19 PHSMs, some accused it of in fact using the pandemic as an excuse to further indulge in its autocratic tendencies. The initial State of Emergency in particular was criticized as being a flimsy pretext for the Bulgarian government to curtail human rights and solidify autocratic power (Vassileva, 2021). According to Vassileva (2021), while Bulgarian law offers no particular guidance as to when they may be used, states of emergency in Bulgaria are generally invoked in the context of impending war and militarization. And indeed, consistent with bolstering the regime's autocratic power, invoking a state of emergency in response to the pandemic paved the way for other laws to be permanently amended. One of the most striking examples is the "Law on Measures and Actions", which proscribes non-essential movement within the country and also abroad. In a further infringement of civil rights, based on the enactment of this law, in November 2020, the Bulgarian Constitutional Court drew up amendments to the „Law on Electronic Communication", which permitted authorities to gain instant access to the data traffic of citizens without any legal oversight (Vassileva, 2021).

In addition to these infractions to civil liberties, the government faced further backlash with respect to the practicality and viability of the implemented COVID-19 measures themselves. Indeed, the public found many such policies to be confusing and inconsistently implemented. For example, the Bulgarian parliament released an ordinance restricting nightlife and celebratory events in June 2020. The following day, the parliament published yet another order, which annulled the ordinance and the rules dictated which led to general public confusion. Further criticism arose because the presentation of these rules to the public had a highly unclear and technical character. In that regard, citizens had trouble interpreting what the rules were suggesting and how they were supposed to act on them. The degree of the carelessness by which these policies were implemented was made painfully clear when the government announced on its official website in November 2020 that it would extend the state of Sanitary Emergency to 31 January 2020 instead of the actual date of 31 January 2021.

The public also condemned Bulgarian policymakers for implementing irrational or unreasonable policies. In particular, the public found that fines subjected to individuals not complying with the COVID-19 regulations were exceptionally high. A person who breached the anti-COVID-19 rules for the first time received a fine between 300 and 100 leva, which equaled 150 and 500 EUR, respectively, in September 2020 (Vassileva, 2021). Given that the gross median income was roughly 700 EUR at the time, setting unreasonable fine amounts further undermined public support for COVID-19 policies.

Contemporaneous to grievances around COVID-19 policies, were broader and more deep seated unhappiness with the government overall and included accusations of decades long corruption[103] and decline in press freedom.[104] These sentiments first began to bubble in July 2020 with mass protests erupted in Bulgaria, calling for the resignation of Prime Minister Borisov and early elections. The ongoing protests accusing Borissov and his allies of corruption continued for several months and ultimately came to an end in April 2021. Borissov's government lost a vote of no confidence in parliament, which subsequently led to his resignation as Prime Minister. Though the pandemic cannot be said to be the main reason triggering this dramatic turn in political fortunes for Prime Minister Borisov, whose party had been in power more or less continuously since 2009 except for 2013, to the extent that systemic corruption had led to insufficient resources for the healthcare sector[105] and general mistrust of government officials on the one hand and abuse of the COVID-19 pandemic prompted autocratic overreach on the other hand, the COVID-19 pandemic likely only added more fuel to the flame.

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[103] Oliver, C. (2020, September 9). How Bulgaria became the EU's mafia state. *POLITICO*. Retrieved April 24, 2023 from: https://www.politico.eu/article/bulgaria-how-it-became-mafia-state-of-eu/

[104] *Reporters Without Borders* (2019, October 17). RSF asks President Radev to defuse Bulgaria's press freedom "crisis". Retrieved April 24, 2023 from: https://rsf.org/en/rsf-asks-president-radev-defuse-bulgaria-s-press-freedom-crisis

[105] Subev, V. (2018, February 27). Bulgarian hospitals on the brink of financial collapse. *Radio Bulgaria*. Retrieved April 24, 2023 from: https://bnr.bg/en/post/100938750/bulgarian-hospitals-on-the-brink-of-financial-collapse

Conclusion & Discussion

When the pandemic first hit Europe, unlike its European counterparts, Bulgaria performed well in controlling the spreading of the virus. The lengths the Bulgarian parliament took to limit the spread of the virus, however, were met with criticism by some and gave the impression that the Prime Minister utilized the tools in his arsenal to back his autocratic style of government, owing to the fact that some laws were modified on the grounds of the state of emergency. Although the country could weather the storm by using these measures, case numbers surged in the next waves and the government was accused of not being timely enough with its precautionary practices. Another decisive factor that caused the spiking waves and led Bulgaria to fail to capitalize on its initial success was the low vaccination rates, which were the lowest in the European Union. This report showed that Bulgaria's response to COVID-19 was a mixed bag of achievements and challenges. While the country managed to contain the first wave of the pandemic with strict measures, it faced difficulties in maintaining its success in the subsequent waves due to political controversies, public dissatisfaction and vaccine hesitancy, ultimately leading its status as the last in the pack in terms of COVID-19 deaths among EU countries.

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Džakula, A., Banadinović, M., Lovrenčić, I. L., Vajagić, M., Dimova, A., Rohova, M., Minev, M., Scintee, S. G., Vladescu, C., Farcasanu, D., Robinson, S., Spranger, A., Sagan, A., & Rechel, B. (2022). A comparison of health system responses to COVID-19 in Bulgaria, Croatia and Romania in 2020. Health Policy, 126(5), 456–464. https://doi.org/10.1016/j.healthpol.2022.02.003

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Croatia: Country Report of COVID-19 Government Responses Melody Bechler and Avirat Desai

Introduction: The Covid-19 Crisis in Croatia

This report provides a brief introduction to the public and political discourse in Croatia during the COVID-19 pandemic from its beginning through October 1, 2021.

In particular, we focus on two facets of Croatia's public policy response that stand out as being particularly notable. First is the degree to which Croatia centralized its policy decision-making capacities, which invited concerns of autocratic overreach. To that end, the Croatian central government established the Civil Protection Headquarters (CPH), a committee responsible for expert recommendations and the coordination of all institutions and emergency services in the event COVID-19 appeared within the nation's borders. This organization received its original power from the central government, but quickly acquired additional policy-making capabilities independent of the central government. Second, while the health of the nation remained a priority, the government also prioritized economic interests in decision making. This power centralization as well as the Civil Protection Headquarters policy-making priorities are pivotal in understanding Croatia's COVID-19 management plan.

Throughout our overview of how the Croatian government dealt with different phases of the pandemic and our analysis of the Croatian government's COVID-19 response, we show how the central government has concentrated its power in a single, separate government entity during the pandemic. Furthermore, we show the implications this concentration of power may have had on the Croatian economy and the inconsistency of policy goals. In doing so, we also provide further detail as to the COVID-19 policies that the Croatian government implemented as well as the public and political discourse around them.

Evolution of the Croatian COVID-19 Pandemic

In our review of the government's COVID-19 PHSM response over time, the government's policy focus was not always consistently centered on mitigating the effects of the virus and as such, was not always dependent on the case and death numbers. An example of this inconsistency can be seen in the policy goals of the country, where the idea of keeping the public safe vs. keeping the economy going resulted in several unusual measures like heavy restrictions during low case rates in the start of the pandemic and light restrictions and reopenings during high case rates in the summer months.

Meanwhile, when the tradeoff was between other policy goals, including earthquake management and political freedom, with COVID-19 measures, the Croatian government appeared to be much more willing to sacrifice the former in favor of the latter. These tendencies, coupled with the centralized nature of Croatia's policy response invited concerns about authoritarian overreach.

We explore these trends in 4 main phases of Croatia's policy responses concerning the COVID-19 pandemic using the CoronaNet Research project's data (Cheng et al., 2020), which are herein described in further detail.

The Pre-Crisis Phase (emergence of the virus - February 2020):

The pre-crisis phase began in January 2020 and lasted until the end of February 2020. At the beginning of the pandemic, when the virus was concentrated largely in China, COVID-19 was not viewed as a public health threat. However, Croatia became concerned about the threat COVID-19 posed as a result of the Chinese workers working on the Pelješac Bridge in Croatia. Many of these individuals were to return from China after the Chinese New Year in late January[106]. Partly in response, the country began to monitor border crossings and airports. Moreover, the Croatian Ministry of Health also prophylactically published health recommendations for those traveling to or from China. They specifically warned travelers to China to avoid sick individuals, meat markets, and consuming raw or semi-raw meat[107]. Croatia encountered its first COVID-19 cases later than other European nations, due in part to the early government efforts in preventing

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[106] Tatić, I. (2020, January 25). What is Croatia Doing to Prevent the Spreading of the New Coronavirus? *Total Croatia News*. Retrieved April 24, 2023 from: https://www.total-croatia-news.com/lifestyle/41056-coronavirus-croatia

[107] Ibid.

COVID-19 from reaching its borders. The first case of COVID-19 in Croatia was not until the end of February 2020, confirmed in a patient hospitalized in Zagreb[108].

In February 2020, the Croatian government also created the Civil Protection Headquarters to provide policy recommendations and coordinate emergency services in the event of a COVID-19 outbreak. This marks the shift in COVID-19 responsibility and decision-making away from the central government towards a separate government body. At the end of February, the Croatian Ministry of Health raised the national alert level due to the risk of COVID-19. Croatian citizens, on the other hand, were not very concerned about the virus as scientists stated it appeared less severe than the seasonal flu[109].

The Rapid-Action Phase (early March until the end of April 2020):

Following a steady increase in COVID-19 infections within Croatian borders, the Civil Protection Headquarters rapidly closed the border to the rest of the world in March 2020. The CPH banned transit through all border crossings for 30 days with the exception of Croatian citizens, foreign nationals returning home, and EU and Schengen zone residents. They also locked down the nation internally with the closure of businesses, a ban on social gatherings, and a strict requirement to remain in one's home. These lockdown measures prevented people from leaving their homes except for groceries, medical needs, etc, while also requiring individuals to possess passes verifying their travel approval. Korajlija and Jokic-Begic (2020) found a tremendous increase in virus concern and safety behaviors among residents of Croatia over the 3 weeks between the first identified COVID-19 case and the first fatality. This survey based study shows the sudden increase in concern amongst the population during the start of the first wave. However, Croatian citizens also appeared to have a favorable outlook towards their government and the decisions from the new Civil Protection Headquarters.

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[108] Ilic, I. (2020, February 25). Croatia confirms its first case of coronavirus infection. *Reuters*. Retrieved April 24, 2023 from: https://www.reuters.com/article/us-croatia-coronavirus-idUSKBN20J1OB

[109] Tatić, I. (2020, January 25). What is Croatia Doing to Prevent the Spreading of the New Coronavirus? *Total Croatia News*. Retrieved April 24, 2023 from: https://www.total-croatia-news.com/lifestyle/41056-coronavirus-croatia

Amidst these rapid changes, Croatia was hit with a 5.5 magnitude earthquake at the end of March that caused structural damage and fires and left many without power. This earthquake further tested Croatia's response to the pandemic, as many first responders and resources were diverted towards earthquake relief. The Minister of the Interior advised citizens to social distance at 2-3 meters when outside and to stay away from buildings in case they collapse, while reminding citizens COVID-19 doesn't care about the earthquake[110]. The Health Minister stated, "Earthquakes are dangerous, but coronavirus is even more so," a statement not well received by some citizens[111]. One citizen commented that earthquakes are more important and you save yourself first and mask later[112]. The combination of an earthquake in addition to COVID-19 made policy-making difficult since earthquake measures and virus restrictions contradicted each other. The Croatian Ministry of Health finally declared an epidemic in Croatia, but stopped short of declaring a state of emergency, which would have expanded pre-existing governmental powers, but would have also required a two-thirds majority for regulations restricting constitutional freedoms and rights. As seen in the shift of public perception of the Civil Protection Headquarters after April 2020, simply declaring a state of emergency, or rather a state of natural disaster per the Croatian Constitution, would have prevented some public criticism and future legal problems on the matter.

March restrictions seemed to help slow down the spread of the virus across the country, with the highest number of infections per day reaching just 96, on April 1, 2020. To the public, the Civil Protection Headquarters successfully controlled infection rates, even amidst an earthquake. The Civil Protection Headquarters seemingly displayed its expertise, without being political, through regularly held media conferences, which made the CPH appear transparent to citizens (Selanec, 2020). It is within the Civil Protection Headquarters however, that one finds instances of particularly worrisome levels of power given to a single body without the proper legal basis. The question quickly became whether a single body, within the confines of the Croatian constitution, had the ability to declare and enforce severe epidemiologic limitations of constitutional rights upon

[110] jutarnji (2020, March 22). Jutarnji list—BOŽINOVIĆ NAKON POTRESA U ZAGREBU "Sada se nosimo s dvije ozbiljne krize. Pazite na udaljenost, za koronavirus potres nije važan, on se i dalje širi." *Retrieved April 24, 2023 from:* https://www.jutarnji.hr/vijesti/hrvatska/bozinovic-nakon-potresa-u-zagrebu-sada-se-nosimo-s-dvije-ozbiljne-krize-pazite-na-udaljenost-za-koronavirus-potres-nije-vazan-on-se-i-dalje-siri-10120783

[111] Bandic, D. (2020, March 22). Croatia quake injures 17 amid partial coronavirus lockdown. *PBS NewsHour*. Retrieved April 24, 2023 from: https://www.pbs.org/newshour/world/croatia-quake-injures-17-amid-partial-coronavirus-lockdown

[112] Ibid.

citizens. According to the language of the Law on the Protection of the Population from Infectious Diseases, only the Minister of Health had the authority to make such health restrictions, not the Civil Protection Headquarters[113]. The legitimacy of the Civil Protection Headquarters was questioned when the media revealed two expert spokesmen were not appointed members of the headquarters at the outset (Selanec, 2020). Until this point, citizens did not question the legality of the restrictions as they believed the Minister of Health was a member of the Civil Protection Headquarters, making all decisions legal. Citizens began to intensely criticize the headquarters' actions and its legality, since the central government avoided pre-existing procedures for disease and instead passed an amendment to the pre-existing Civil Protection System Act to give the Civil Protection Headquarters the ability to implement decisions independent of the established procedural framework[114]. This amendment to the Law on the Protection of the Population from Infectious Diseases was their attempt to correct their errors and retroactively legalize all previous Civil Protection Headquarters decisions.

The Summer Reopening Phase (end of April until mid-August 2020):

With the decrease in COVID-19 infections, the central government announced a three-phase relaxing of COVID-19 restrictions. Lockdown measures remained in place, but the Civil Protection Headquarters permitted counties to request permission from them if they wished to revoke existing lockdown measures. Most counties chose to request permission, allowing citizens the freedom of movement, a small victory towards reopening. This created confusion as citizens could travel freely between specific provinces while other provinces had only subregions that remained in lockdown. A few weeks later, the head of the Civil Protection Headquarters and Interior Minister Davor Bozinovic revoked the lockdown and e-passes mandate for all counties but retained the capability of reactivating the order for a county if COVID-19 infection rates justified a lockdown. While the CPH seemingly attempted to give counties autonomy, it is evident

[113] Despot, S. (2020, April 15). Dosadašnje odluke Stožera RH bile su nelegalne, što se izmjenom zakona retroaktivno ispravlja. *Faktograf.hr*. Retrieved April 24, 2023 from: https://faktograf.hr/2020/04/15/dosadasnje-odluke-stozera-rh-bile-su-nelegalne-sto-se-izmjenom-zakona-retroaktivno-ispravlja/

[114] Ibid.

the CPH had the final decision-making capability given their decisions could cancel out subnational decisions.

The Civil Protection Headquarters reopened the nation's border to Croatian citizens and other nationals in May 2020, with a goal of continuing to restrict entry to the nation. Yet, EU citizens and other nationals were permitted to enter, provided they had proof of business or economic interests. The term "economic interests" included providing proof of hotel accommodations, therefore tourism was technically permitted under these rules. This cast a wide net to allow many individuals to enter Croatia, a contradictory approach given these restrictions existed to keep people out. In the middle of the summer, the Civil Protection Headquarters implemented testing requirements for individuals from specific countries, which showed more concern for protecting Croatian citizens. This varying approach attracted more criticism from the media, as the CPH showed less concern for the health emergency and more concern for the economy (Selanec, 2021).

Simultaneously, the summer elections were a point of contention within the country. The State Electoral Commission of the Republic of Croatia (DIP) advocated for voting restrictions based on whether an individual was infected with COVID-19 (Keršić, 2020). DIP proposed those with temperatures greater than 37.2 Celsius and those who tested positive for COVID-19 would not be permitted to vote (Keršić, 2020). Those who knew they would be in self-isolation would need to pre-register to vote with an official inside their residence (Keršić, 2020). Members of parliament and constitutional law experts argued this decision as unconstitutional, but DIP continued to argue it fell under "the protection of health and common sense," and therefore infected individuals should not be permitted to vote. These actions resulted in voter outrage and continued pressure from other government officials. Citizens, supported by GONG, requested the Croatian court's involvement to determine constitutionality (Keršić, 2020). The courts determined, regardless of infection, citizens cannot be barred from exercising their constitutional right to vote. A compromise was found via proxies, who would vote in place of an infected individual, to simultaneously uphold constitutional rights and protect the health of all individuals (Keršić, 2020). Amidst citizen's pressure to uphold their constitutional rights, there was a very low turnout for the election with 46.9% of eligible voters participating (Keršić, 2020). Clearly, COVID-19 concerns and fear of infection were still very prevalent, even with lower infection rates.

The Winter Restrictions Phase (mid-August 2020 through June 2021):

After the reopening of the country in the summer for tourism and business, Croatia saw an increase in new infections starting August 2020, giving rise to a 2nd wave. The nation also began updating their entry requirements for PCR testing and quarantines biweekly. As the peak of summer went by, restrictions were reintroduced in August, and operating restrictions on various businesses were imposed. This was again regarded as unfair to the public and local businesses, as one of the reasons for this sudden increase in infections may have been connected to the reopening during summer (Selanec, 2020). However, public concerns and outrage were overshadowed by the very high daily new infections in November and December, putting a question mark to the partial reopening during the Christmas holiday season.

The Civil Protection Headquarters slowly began to reopen parts of the Croatian economy in February, much later than expected given the continuous decline in COVID-19 infection rates since mid-January 2021. The Civil Protection Headquarters was very slow to make policy decisions, with policy adjustments occurring every 15 days. Even though some restrictions were lifted in February, many businesses were completely closed until the beginning of March 2021. Politically, Croatian counties also lost some autonomy following directives from the Civil Protection Headquarters. The CPH directive emphasized that if a local or regional self-government implemented milder epidemiological measures than those mandated by the Civil Protection Headquarters, the CPH decisions will override local or regional decisions. In other words, decisions made by the CPH every 15 days had the potential to dramatically impact and negate county implemented policies.

Following nearly 4 months of complete closure, businesses like bars and restaurants were finally allowed to reopen. These are some examples of CPH decisions that did not appear to utilize infection rates and community spread to the fullest extent. Based on continuous declining infection rates in January 2021, one might have expected the CPH to consider reopening establishments instead of pushing reopening to mid-February. Beginning April 2021, travelers who provided a vaccination certificate or confirmation of COVID-19 recovery with the second dose greater than 14 days prior to arrival could bypass the entry testing requirement. The green list from the European Centre for Disease Prevention and Control did not disappear either, as travelers from green nations could still enter Croatia without restrictions. Croatia also implemented a vaccine validity expiration date for entering the country, indicating inoculations may have a physiological expiration date. These later entry restrictions effectively made Croatia much more difficult to visit and added increased strain on both the citizens and economy.

COVID-19 Policy Response in Croatia:

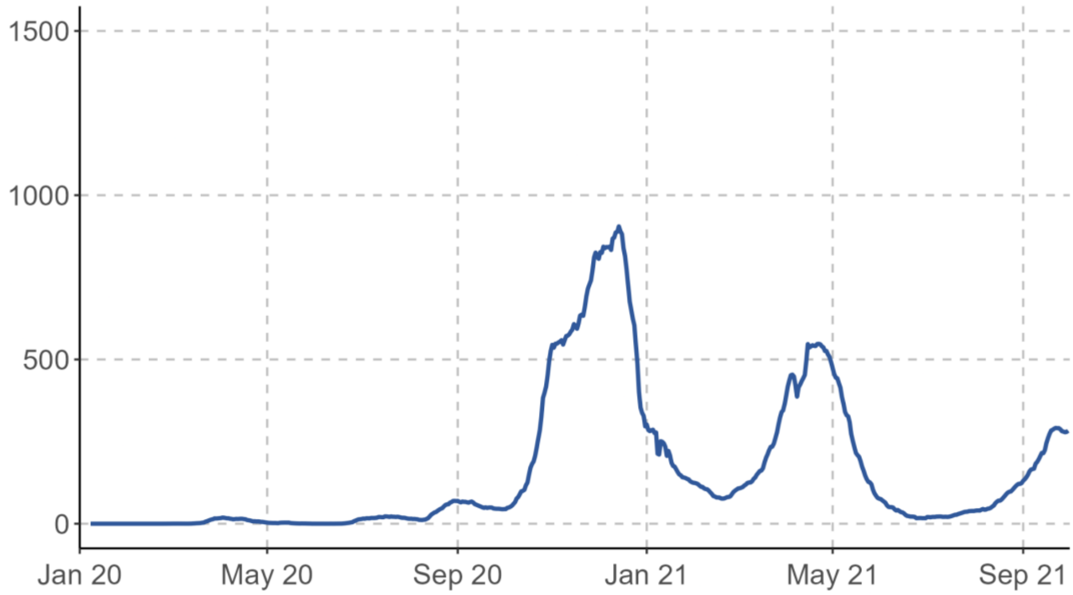

Figure 7: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Croatia.[115]

The timeline in Figure 7 demonstrates the rise in case numbers. Here, we will analyze the COVID-19 policy data for Croatia from the CoronaNet Research Project. The majority of policies proposed and implemented by the Civil Protection Headquarters were restriction and regulation of businesses and restriction of mass gatherings, followed by external border restrictions and quarantines. These top policy types are reflective of the government's political position towards the pandemic. During the rapid response phase, numerous business and gathering restrictions were implemented to combat infection spread. Following the holiday 2020 season, these policy types coincide with CPH's reluctance to reopen its economy amidst lower infection rates. Additionally, it is unsurprising there is a high volume of external border restriction policies. CPH's focus on monitoring border crossings and limiting access was paramount to their pandemic

[115] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

approach. Upon the winter restrictions and subsequent reopening alongside the arrival vaccines, Croatia's COVID-19 vaccine expiration entry mandate became one of the strictest entry requirements in the world, an abrupt redirection from entry requirements merely a year prior. Overall, these policies align with quintessential political concerns and actions throughout the pandemic.

Conclusion and Discussion:

Our analysis of Croatia's COVID-19 response has found the government's response to be inconsistent. Evidence of this inconsistency can be found in the restrictions and reopenings across the country during specific time periods. For example, the CPH and central government's response in the initial phase of the pandemic was amongst the quickest and the most stringent possible, whereas, during the summer when case numbers were higher, tourists were allowed in the country and most restrictions were lifted. This is also evident in post-holiday policies in early 2021, when infection rates were lower yet many restrictions on businesses and gatherings remained. This shows that public health was not always at the top of the government's agenda, even during the COVID-19 pandemic, and other factors, mainly economic and political, were prioritized.

Although the government has been successful in keeping the case numbers down, especially at the start of the pandemic, the executive management of the pandemic signals to more of a majoritarian governance. In the case of Croatia, this means that the central government possessed extraordinary power to implement any type of policy they deemed necessary, including those infringing on civil liberties, with only a simple majority rather than a two-thirds majority. Examples of this include mandatory quarantines and lockdowns, which infringe on citizen's rights and liberties. The lack of a formal declaration of emergency, which would have wholy aided the nation, reflects the centralization of power concern, as the public health decision-making power became concentrated in the Civil Protection Headquarters. This was especially problematic given the Constitution states only the Minister of Health can make such decisions, which led to criticism from the public and media.

Our study of Croatia's governmental response towards COVID-19 highlights an important recommendation that countries and institutions should consider for policy making. During a crisis, the consequences of a crisis can overpower the basic constitutional rights of the citizens. Hence, for any democracy facing a crisis, especially a constitutional democracy, it is imperative to align policy responses in a way that minimizes consequences but also preserves the constitutional rights of their citizens. In conclusion, although many political and social concerns have been found across Croatia's policy response, they have been able to stop the spread of virus at critical times, and have been able to keep the death rate low, even when case numbers were at their peak.

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Czech Republic: Country Report of COVID-19 Government Responses by Ali Kahraman

Introduction

This report will examine the COVID-19 policy timeline of the Czech Republic and the discourses that prevailed in the country from the beginning of the pandemic until October 2021.

The first section of this report will analyze the COVID-19 case and mortality rates as well as the government policies implemented in response to the COVID-19 pandemic from its start in early 2020 until October 2021. This section will show that despite its early success in pandemic response, delayed response to subsequent waves helped lead Czechia into one of the worst pandemic performers of the EU. As part of this section, the country report will also discuss how policy-making led by politicians rather than by epidemiological experts helped shape the government's pandemic response, and subsequently pandemic performance.

Discourse around the pandemic meanwhile evolved over time and moved away from a pure discussion of health concerns to include discussion of the economic and democratic implications of the pandemic and pandemic measures over time. As will be discussed in the second section of this report, discourses in both the public and political spheres also influenced the measures and policies implemented.

Policy Responses to COVID-19

This section will use the CoronaNet Project (Cheng et al., 2020) database to analyze the Czech Republic government's policy responses to COVID-19. Policies implemented in the Czech Republic had two distinctive features. That is, on the one hand, the Czech government initially undertook quite stringent responses to the pandemic, its overall inconsistent approach to implement pandemic measures ultimately proved to be ineffective in containing the virus. Meanwhile, though their initially stringent policy response has also provoked fears of democratic backsliding, though as will later be discussed, Czech institutions managed to provide a check against these potential abuses, but in doing so perhaps also introduced additional inconsistency and haphazardness to the policy making process.

First Wave

The diagnosis of the first COVID-19 case on March 1, 2020 in the Czech Republic officially marked the start of the outbreak in the country. Prior to this time, the Czech government focused mainly on restricting travel into the country and did very little in the way of taking preparatory measures to respond to the virus threat. They only began implementing domestic restrictions once the first positive COVID-19 case was identified, unlike countries like Portugal that prepared for the pandemic before the first detected case in the country (see Country Report Portugal).

With the surge in infections that followed the first case and the WHO's declaration of COVID-19 as a pandemic on March 11, 2020, the government declared a state of emergency on March 12, 2020. In the days that followed, the Czech Republic was both one of the first European countries to implement a nationwide lockdown (on March 16, 2020), and the first EU country to mandate the use of masks in public areas (on March 18, 2020). In response, citizens took to sewing their own masks and the Czech Prison Service distributed sewing machines to prisoners to sew their own masks.[116] The Czech government meanwhile, desperate for masks, seized a shipment meant for Italy from China and also likely paid a sizable sum to China to procure its own supply as well.[117]

Moreover, the government not only implemented a number of additional domestic policies in response to the pandemic, such as closure of schools and restrictions of businesses but also ramped up its existing travel restrictions. Indeed, as Löblová et al. (2021) note, perhaps one of its most controversial citizens was banning its citizens and residents from leaving the country on March 16, 2020, a restriction that was last imposed in 1989. Likely due to these early and strict responses, relatively low numbers of cases and deaths were observed in the Czech Republic, especially between February 2020 and May 2020.

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[116] Hutt, D. (2020, March 24). Czechs facing up to coronavirus crisis by making masks mandatory. *Euronews*. Retrieved April 25, 2023 from: https://www.euronews.com/2020/03/24/coronavirus-czechs-facing-up-to-covid-19-crisis-by-making-masks-mandatory

[117] Ibid.

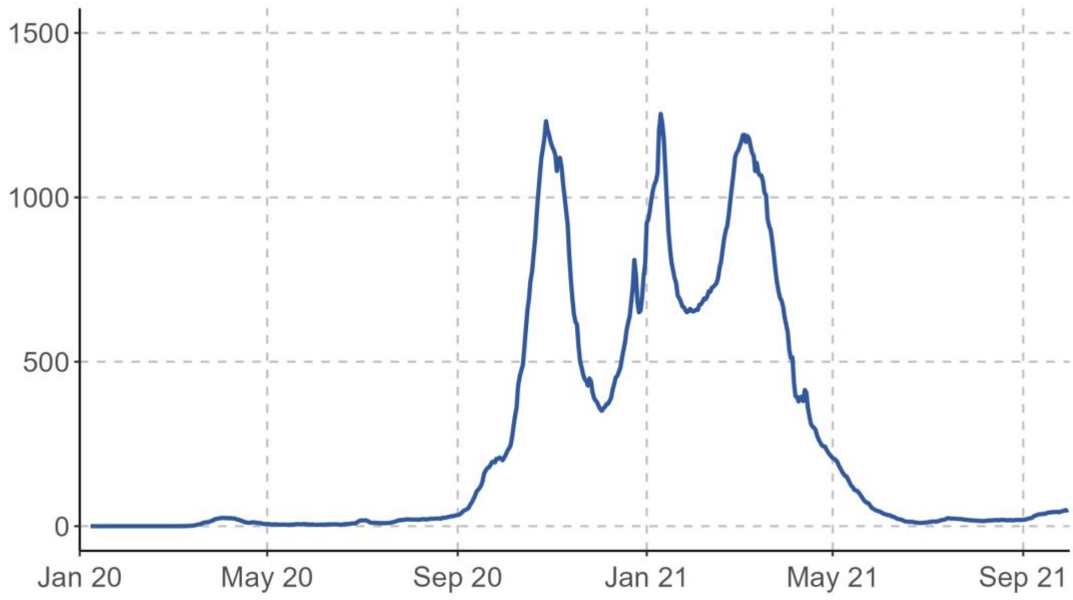

Figure 8: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Czech Republic.[118]

Subsequent Czech policymaking was much more haphazard compared to the government's initial response to the first wave. Though, given Czechia's history, some feared that politicians would take advantage of the chaotic nature of pandemic response to further their own political agendas (Löblová et al., 2021), ultimately Czech institutions were able to provide a check against this type of abuse. Indeed, in contrast, the grinding wheels of democracy itself arguably led to inconsistent policy making with detrimental effects for pandemic management. For instance, though the Czech government had outlined a plan to gradually lift pandemic restrictions starting in April 2020 and eventually stretching until June 8[119], ultimately the timing of many of these lifts in restrictions were accelerated and many done simultaneously on May 11 (Löblová et al., 2021). The reason for this change in plans is either a testament to Czech republic's democratic resilience

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[118] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

[119] Pirodsky, J. (2020, April 14). Breaking: Czech government outlines five-step plan for re-opening shops, restaurants. *Expats.cz*. Retrieved April 26, 2023 from: https://www.expats.cz/czech-news/article/breaking-czech-government-outlines-five-step-plan-for-re-opening-shops-restaurants
Harmongram UVOLNĚNÍ PODNIKATELSKÝCH A DALŠÍCH ČINNOSTÍ https://www.vlada.cz/assets/epidemie-koronaviru/dulezite-informace/uvolneni_schema_podnikatele_zivnostnici_14042020.pdf

or an outcome of political jockeying in a democratic system, depending on one's perspective.

Indeed, to argue for the former, the easing of the lockdown was a direct result of a ruling by Prague's Municipal Court that the lockdown and restrictions on businesses were an overreach of the Public Health Protection Act, the legal basis on which they were initially made, and instead would need to be reissued based on the Crisis Management Act[120] . This legal ruling followed a previous bid by the government to delay a by-election in order to reduce the spread of the virus was declared illegal by Czechia's Supreme Administrative Court.[121]

However, to make a case for the latter, these democratic interventions into the policy making process arguably made it more difficult to keep case numbers down. Following this ruling, the Czech government sought to extend the state of emergency until May 25, 2020,[122] though ultimately the Chamber of Deputies granted the extension only through May 17, 2020.[123] As part of this, the original plan to gradually lift restrictions was accelerated and shifted, as previously mentioned to May 11, 2020. Though restrictions were not completely lifted during the summer months of 2020, they were either substantially relaxed or became more targeted. For instance, mass gatherings were allowed up to 500 people and restaurant terraces were allowed to remain open after 11pm as of June 8 Meanwhile, by the end of July, the Czech government introduced a traffic light system in order to differentiate between the severity of COVID-19 cases in different regions in the country and apply different levels of restrictions accordingly.[124] As

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[120] Pirodsky, J. (2020, April 23). Breaking: Prague court cancels Czech anti-coronavirus measures on free movement, retail sales. *Expats.cz*. Retrieved April 26, 2023 from: https://www.expats.cz/czech-news/article/breaking-prague-court-cancels-czech-anti-coronavirus-measures-on-free-movement-retail-sales

[121] *iROZHLAS* (2020, April 1). Nejvyšší správní soud: Rozhodnutí vlády o odložení senátních voleb v Teplicích bylo mimo její pravomoc. Retrieved April 26, 2023 from: https://www.irozhlas.cz/zpravy-domov/nejvyssi-spravni-soud-doplnovaci-volby-do-senatu-jaroslav-kubera-teplice_2004011559_aur

[122] *Reuters* (2020, April 23). Czech government seeks state of emergency extension until May 25—CTK news agency. Retrieved April 26, 2023 from: https://www.reuters.com/article/uk-health-coronavirus-czech-emergency-idUKKCN2253EB

[123] *Government of the Czech Republic* (2020, April 30). Government approves the rules for relaxing emergency measures from 11 May, state of emergency remains in force until 17 May. Retrieved April 26, 2023 from: https://www.vlada.cz/en/media-centrum/aktualne/government-approves-the-rules-for-relaxing-emergency-measures-from-11-may--state-of-emergency-remains-in-force-until-17-may-181311/

[124] *Prague Morning* (2020, July 28). Czech Govt Introduces "COVID-19 Traffic Light System" for Czech Regions. *Retrieved April 26, 2023 from:* https://www.praguemorning.cz/czech-govt-introduces-covid-19-traffic-light-system-for-czech-regions/

will be described in more detail in the next section, these measures arguably led to a drastic increase in numbers during the second wave of the pandemic.

Overall then, while in the first wave the Czech government took early and decisive action which helped keep case numbers low, the legal bases for their work was also subsequently called into question. Democratic institutions other than the executive branch like the Chamber of Deputies and the Czech courts played a bigger role in influencing the lifting and relaxing of these initial restrictions. As we will see in the below, while the increased injection of politics into the policy making process helped address democratic accountability, they also negatively affected the government's ability to continue to keep case numbers low.

Second and Third Waves

Though pandemic numbers remained relatively low through the summer of 2020[125], policy relaxations in the summer of 2020 arguably led to an increase in the number of cases in the fall. Though in response, Czechia introduced new restrictions in September 2020, including its mask mandate for indoor premises[126] as well as restrictions on indoor events[127], by October 2020, as shown in Figure 8 above, the number of confirmed COVID-19 cases per million people increased rapidly. At this time, the country ranked second in the world in the number of cases per day and was forced to turn gyms into hospitals[128].

As was the case during the relaxation of policies during the end of the first wave, ultimately, policy-making was driven by politicians rather than experts, and as such political rather than epidemiological logic was being used to drive policymaking.[129]

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[125] Tatro, S. (2020, July 20). Czech Republic coronavirus updates, July 20: 90 new cases marks new high, increase in cases in Prague. *Expats.cz*. Retrieved April 26, 2023 from: https://www.expats.cz/czech-news/article/czech-republic-coronavirus-updates-july-20-90-new-cases-increase-in-cases-in-prague

[126] Ferianc, Z., & Kreysa, V. (2020, September 9). Czech Republic: Face masks reintroduced in the Czech Republic. *Lexology*. Retrieved April 26, 2023 from: https://www.lexology.com/library/detail.aspx?g=d65db864-eb99-4f03-8b2d-4aa6024f1f1a

[127] Ministry of Health. (2020, September 9). Ministry of Health to Tighten Rules for Holding Mass Indoor Events with Standing Room Only. *Ministry of Health of the Czech Republic.* Retrieved April 28, 2023 from https://tummgmt.eu.qualtrics.com/Q/File.php?F=F_cSngbvmLmaBk8rc

[128] Cameron, R. (2020, October 26). Covid-19: How the Czech Republic's response went wrong. *BBC News*. Retrieved April 28, 2023, from: https://www.bbc.com/news/world-europe-54639351

[129] Kottasová, I. (2021, March 1). How the Czech Republic slipped into a Covid disaster, one misstep at a time. *CNN*. Retrieved April 26, 2023 from: https://www.cnn.com/2021/02/28/europe/czech-republic-coronavirus-disaster-intl/index.html

Indeed, some speculated that its upcoming Senate election in October 2020 influenced the government's decision to delay implementing harsher pandemic measures earlier.[130] On top of this, subsequent studies of the role of Senate elections suggest that the elections themselves likely contributed to the spread of the virus among voting constituencies (Palguta et al., 2022), though drive-in voting options had been made available to protect against this outcome.[131]

Though on December 27, 2020, the nationwide vaccine rollout started, the Czech Republic continued to experience high case counts through the spring of 2021. Some went so far as to characterize the COVID situation as 'a tiny island of doom and gloom' given that while case numbers were dropping globally at the time, the Czech Republic was experiencing record numbers of cases. Though the government had reinstated a state of emergency on October 5, 2020[132], part of the reason for this rise in cases was that the government decided to lift policy measures around Christmas time due to perceived pressure to lift policies for the holiday season despite epidemiological data that suggested that it would be too early to do so.[133]

As a result of the worsening pandemic situation, the government imposed a strict new lockdown in February 2021, which included a curfew, mandatory mask wearing, closure of schools and businesses as well as the banning of public and private events,[134] and numbers did not fall until the summer of 2021. In a deja vu of 2020, while case numbers remained low in the summer of 2021, they began to rise again in the fall of 2021 as new elections were again being held in the fall and the government again, declined to take stronger pandemic measures ahead of time.[135]

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[130] Kottasová, I. (2021, March 1). How the Czech Republic slipped into a Covid disaster, one misstep at a time. *CNN*. Retrieved April 26, 2023 from: https://www.cnn.com/2021/02/28/europe/czech-republic-coronavirus-disaster-intl/index.html

[131] Reuters (2020, October 3). Czech PM Babis' party wins wide support in regional elections. Retrieved April 26, 2023 from: https://www.reuters.com/article/uk-czech-vote-idUKKBN26O0T

[132] Prague Morning (2020, October 5). Today Starts the State of Emergency. What You Need to Know. Retrieved April 26, 2023 from: https://www.praguemorning.cz/today-starts-the-state-of-emergency-what-you-need-to-know/

[133] Kottasová, I. (2021, March 1). How the Czech Republic slipped into a Covid disaster, one misstep at a time. *CNN*. Retrieved April 26, 2023 from: https://www.cnn.com/2021/02/28/europe/czech-republic-coronavirus-disaster-intl/index.htm

[134] Czech Universities (2021, March 14). Covid-19 epidemic in the Czech Republic: Measures in March 2021. Retrieved April 26, 2023 from: https://www.czechuniversities.com/article/covid-19-epidemic-in-the-czech-republic-measures-in-march-2021

[135] Muller, R. (2021, November 10). Czechs, Slovaks report surge in COVID-19 cases, hospitals stretched. *Reuters*. Retrieved April 26, 2023 from:

Additional factors which help explain the Czech Republic's relatively poor experience with the pandemic include the fact that vaccination rates have remained low. As of March 2023, approximately 65% of the population has at least one dose vaccinated, well below the EU average (Mathieu et al., 2021). Though most EU nations experienced a second wave in the fall of 2020, the Czech case was additionally hampered by its low capacity to trace new infections.[136]

Overall, however, by looking at the relationship between measures and mortality, it appears that the short-term nature of the measures and inconsistent policies have led to high mortality rates in the Czech Republic. With 2900 cumulative deaths per million inhabitants as of October 31, 2021, the Czech Republic not only ranks high in Europe but is also one of the countries most affected by COVID-19 worldwide[137]. The policies and measures implemented by the government of the Czech Republic were arguably unsuccessful in keeping the mortality rates low both in an absolute sense as well as relative to other EU countries.

Public and Political Discourses on COVID-19

From March 2020 until the summer of 2020, uncertainty about the public health threat the virus posed likely explains the relatively weak pushback the Czech public gave with regards to the implementation of restrictions (Löblová, 2020). During this time, there were also no protests and no mass anti-measure rhetoric on social media. Additionally, a survey conducted in April 2020 found that the support for government measures taken in the fight against COVID-19 was as high as 76% (Löblová, 2020).

Nevertheless, some counter-narratives did emerge during this period and focused especially on the poor state of the Czech Republic's existing health infrastructure and the lack of testing centers. Opposition parties suggested changing existing government policies and introducing new tools such as creating a 'national strategic emergency communication system' to make crisis management more effective (Špaček, 2020). However, not only were the opposition parties unable to affect their changes, the government increased the powers of the incumbents through e.g. a mandate to

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https://www.reuters.com/world/europe/czechs-record-highest-daily-tally-covid-19-cases-since-march-2021-11-10/

[136] ČTK (2020, September 4). Situace je tristní, přiznala Jágrová. Pražská hygiena stíhá trasovat kontakty nakažených jen obtížně | Domov. *Lidovky*. Retrieved April 26, 2023 from: https://www.lidovky.cz/domov/prazska-hygiena-stiha-trasovat-jen-obtizne-pozitivne-testovane-zada-o-shovivavost.A200904_153419_ln_domov_ele

[137] Source: WHO (2023). *WHO COVID-19 Dashboard.* Retrieved April 28, 2023, from: https://ourworldindata.org/covid-deaths

implement financial measures without consulting the National Fiscal Council and the suspension of the use of trust funds according to European directives. Moreover, the Ministry of Defense proposed a law to monitor citizens' activities on the internet in January 2020 to prevent disinformation (Špaček, 2020). These institutional adaptations illustrate the trade off between swift responses and democratic norms in emergencies.

Beginning in summer of 2020, the dominant discourse on the COVID-19 pandemic in politics and society about prioritizing health was gradually replaced by economic concerns. According to Statista, the industrial sector accounted for around 32% of the Czech Republic's GDP in 2019.[138] As such, supply shortages and shutdowns caused by the COVID-19 pandemic were one of the main challenges for the Czech government to overcome. In sectors such as the automotive industry, these economic concerns became more pronounced as the pandemic reduced and suspended production due to shutdowns and supply chain crises (Andoh, 2020). For example, before COVID-19, the financial risk for Small Medium Enterprises (SMEs) in the Czech Republic was 35%, but with COVID-19, this rate increased to about 54% (Cepel et al., 2020).

Accordingly, sector representatives and the press began to talk about the damage that curfews and business regulations caused to the automotive sector and SMEs. In the early phase of the pandemic from February 2020 till May 2020, the country also provided financial aid packages to individuals and companies to protect them from the economic impact of COVID-19 (Mora and Galuščák, 2022). However, some industry bodies have argued they have been inadequate and the lack of meaningful financial support has meant that people sometimes do not comply with rules because they simply cannot afford to. For instance, those asked to quarantine are only entitled to 60% of their salary, which is not not tenable economically for many.[139]

Meanwhile, both the Czech government's relative success in suppressing the worst of the virus during the first wave of the pandemic and its failure to properly communicate it helped foment resistance to future pandemic restrictions. According to Jan Kulveit, a senior researcher at the University of Oxford, "people saw the cost of the measures but not the virus, so there was a huge spike in the voices doubting the seriousness of the

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[138] O'Neill, A. (2023). Share of economic sectors in the GDP of Czechia 2021. *Statista*. Retrieved April 28, 2023, from: https://www.statista.com/statistics/369830/share-of-economic-sectors-in-the-gdp-czech-republic/

[139] Kottasová, I. (2021, March 1). How the Czech Republic slipped into a Covid disaster, one misstep at a time. *CNN*. Retrieved April 26, 2023 from: https://www.cnn.com/2021/02/28/europe/czech-republic-coronavirus-disaster-intl/index.html

disease and of the situation and that is not something you would see in a country that has experienced thousands of deaths."[140]

One of the most debated events during the pandemic that sparked criticism against the government was the local elections held in the Czech Republic on October 2-3, 2020 (Palguta et al., 2022). By then, COVID-19 case numbers had begun to rise but there was no declaration of emergency in place. Given that the COVID-19 vaccine was not yet available at this time, some argued that the Czech Republic failed to take adequate precautionary actions to prevent yet another COVID-19 wave by allowing the election to take place (Klimovsky et al., 2021).

With the introduction of vaccines as a policy tool in December 2020, the change in narrative orientation accelerated towards post COVID-19. In the capital city, there were large-scale protests against the negative effects on the Czech economy, possibly caused by measures such as lockdowns, curfews and business regulations implemented by the government.[141] Meanwhile, low vaccine take-up was likely also not helped by theCzech government's decision to procure Russian Sputnik vaccines, though it had not been authorized by the EU at the time and while Czech's have had a history of distrusting Soviet goods as low-quality.[142]

On May 17, 2021, the 4th health minister of the pandemic period resigned, while the previous health minister was fired for being spotted in a restaurant despite restaurants being supposedly shut down at the time. Health ministers were either fired or resigned due to inadequacy and failure to achieve the desired results in the fight against COVID-19[143]. In addition to the instability created by numerous changes of politicians, and although there were many expert advisory committees, the government rarely gave thorough scientific arguments for its decisions, which occasionally did not reflect popular opinion and were condemned for lack of transparency by both academics and

[140] Kottasová, I. (2021, March 1). How the Czech Republic slipped into a Covid disaster, one misstep at a time. *CNN*. Retrieved April 26, 2023 from: https://www.cnn.com/2021/02/28/europe/czech-republic-coronavirus-disaster-intl/index.html

[141] Johnston, R. (2021, January 11). Two protests, one message: Thousands rally against Czech COVID-19 restrictions through the weekend. *Expats.cz*. Retrieved April 26, 2023 from: https://www.expats.cz/czech-news/article/two-protests-held-to-oppose-covid-19-restrictions-in-the-czech-republic

[142] Aljazeera (2021, February 28). *Czech Republic turns to Russian vaccine amid soaring COVID cases*. Retrieved April 26, 2023 from: https://www.aljazeera.com/news/2021/2/28/czech-places-order-for-russias-sputnik-amid-covid-soaring-cases

[143] Euronews (2021, May 14). *Fourth Czech health minister since pandemic began sparks controversy*. Retrieved April 26, 2023 from: https://www.euronews.com/2021/05/14/fourth-czech-health-minister-since-pandemic-began-sparks-controversy

politicians[144]. Indeed, one protest in July 2020 drew a crowd of more than 2000 who protested that government communication about pandemic measures were confusing, chaotic and post-hoc[145].

One could argue that these ministerial changes in a very short time prevented the Ministry of Health, one of the most important stakeholders in the fight against COVID-19 from enacting a consistent plan and recommending comprehensive policies in the fight against COVID-19. Parliamentary opposition, watchdogs from civil society, and the judiciary all scrutinized government actions; these institutions proved to be effective checks and balances to authoritarian overreach. (Löblová et al., 2021).

Conclusion

The government of the Czech Republic started its fight against the COVID-19 pandemic very decisively, implementing early and strict measures. While more effective and faster measures could have been taken with the implementation of centralized policies, the government's initial stringent pandemic responses caused discomfort in the public, opposition and civil society and led to pushback on many of its policies. Besides this, revisions and cuts in policy strategies due to the change of four health ministers weakened the fight against COVID-19. In addition, the increasing number of cases greatly reduced the effect of the measures taken. Finally, public and political discourses shifted priorities between finance, health and democracy in accordance with the happenings of the pandemic in the Czech Republic.

[144] Bidrmanová, M. (2020, April 28). Vláda řídí epidemii podle intuice. Stylem brzda plyn, říká Münich. *Seznam Zprávy*. Retrieved April 26, 2023 from: https://www.seznamzpravy.cz/clanek/munich-vlada-ridi-epidemii-podle-intuice-s-koronavirem-bojuje-ode-zdi-ke-zdi-102900

[145] ČTK. (2020, July 21). Thousands of people protest against tightened lockdown measures in Ostrava. *Expats.cz*. Retrieved April 26, 2023 from: https://www.expats.cz/czech-news/article/rally-protesting-against-lockdown-measures-in-ostrava

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Palguta, J., Levínský, R., & Škoda, S. (2022). Do elections accelerate the COVID-19 pandemic?: Evidence from a natural experiment. Journal of Population Economics, 35(1), 197–240. https://doi.org/10.1007/s00148-021-00870-1

Špaček, D. (2020). COVID-19 – National Government Approach in the Czech Republic. In P. Joyce, F. Maron, & P. S. Reddy (Eds.), COVID-19 – National Government Approach in the Czech Republic (1st ed., pp. 259–269). The International Institute of Administrative Sciences. https://doi.org/10.46996/pgs.v1e1

Denmark: Country Report of COVID-19 Government Responses by Antonia Wesel

Introduction

Denmark was one of the first countries in Europe to introduce a nationwide lockdown in March 2020 and one of the first countries to re-open society in April 2020. By July 2020, Denmark was a global leader in mass testing. These are some striking examples of how Denmark has implemented quick and bold policy changes regarding COVID-19 responses.

This country report will first give an overview of Denmark's governance response to COVID-19 for policies made until October 1, 2021. The following section will then describe and analyze the Danish governance arrangement and network conditions with regards to the COVID-19 policies. The last section of this country report will explore how political trust has changed throughout the pandemic and its role in implementing pandemic measures.

The Danish Government's Policy Response and political trust

As shown in Figure 9, Denmark experienced multiple different waves of the COVID-19

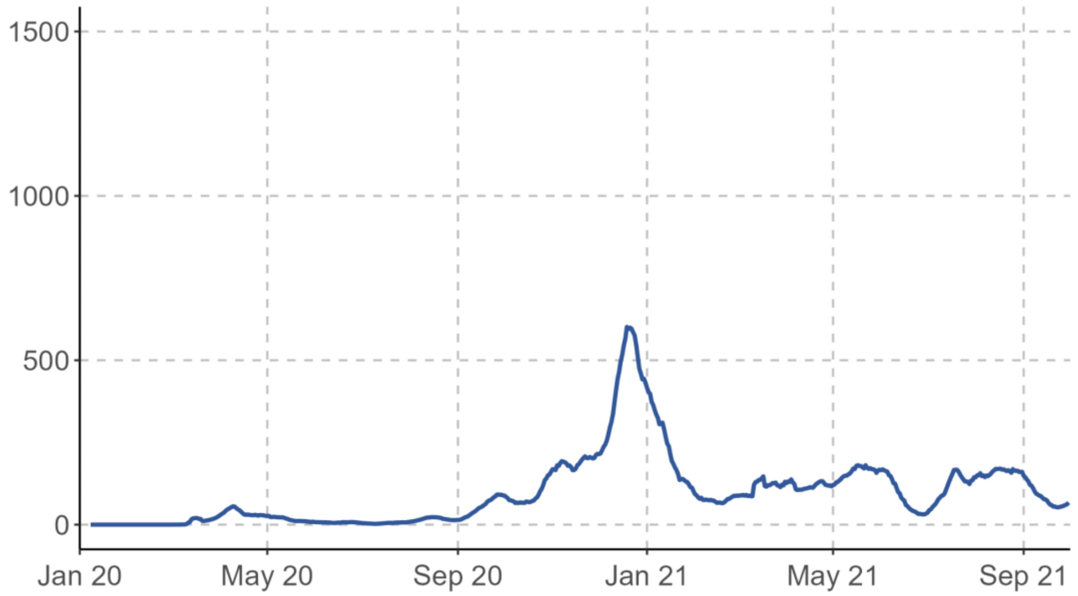

Figure 9: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Denmark.[146]

pandemic, including from March to May 2020 (the first wave), September to December 2020 (the second wave), and around September 2021 (the third wave). In what follows, we discuss policy responses using the CoronaNet Research Project's data (Cheng et al., 2020) and political trust during these waves in turn.

The first wave

The first wave of the COVID-19 pandemic lasted from March 2020 to May 2020 (Bracke and Grams, 2021, p 3). When case numbers continued to increase, the Danish government decided to implement a suppression strategy that contained a number of strict regulations (Laage-Thomsen, 2022) on March 13, 2020. Denmark was one of the very first countries in Europe to close all non-essential businesses and schools as well as to close its borders to international travel, in order to flatten the curve and save lives (Ornston, 2021).

Although Denmark's restrictions have been characterized as being a 'lockdown', the measures implemented under this label must however be considered relative to those in other countries. Comparatively speaking, Denmark's 'lockdown' was relatively unrestrictive given that no curfews were ever introduced, nor were public parks closed nor was internal travel forbidden (Ornston, 2021). Restriction measures were focused on closing institutions, including the closure of kindergartens, educational institutions, restaurants, and malls (Laage-Thomsen et al., 2022), rather than restricting people's movements explicitly. Perhaps because of their relatively unrestricted nature, compliance with the associated measures were relatively high, especially during the first wave. For example, already four days before the closure of these institutions officially went into effect, Danes were already complying with government restrictions (Olagnier, 2020). This is why daycares and schools were relatively empty before the lockdown.

Despite its suppression strategy in March 2020, the government started reopening the society in mid-April as one of the first countries in Europe. Interestingly, this reopening cannot be explained through a low degree of infection rates, nor through a lack of political or societal support for a lockdown (Ornston, 2021). Regardless, Denmark decided on a

[146] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

strategy which followed mass testing, self-quarantines, and contact tracing. Due to a partnership between the government and the largest Danish pharmaceutical company (Novo Nordisk) at the end of April, the Danish government decided to pursue a strategy of mass testing. In May 2020, testing capacities were able to cover all citizens with mild symptoms as well as all their close contacts (Ornston, 2021). By July, Denmark became a global leader in COVID-19 tests per capita (Ornston, 2021). Furthermore, from April 23, the Danish Government fully implemented contact tracing of all infection cases (Ornston, 2021). Contact tracing and building test capacities were realized with cooperation between the government and the private sector. Contact tracing could be achieved through a private software developer Netcompany in April 2020 (Ornston, 2021).

Following waves

While cases remained low through the summer of 2020, the second wave lasted from September to December 2020 (Bracke and Grams, 2021). As infection cases increased to a critical level, the Danish Health Authority (DHA), Denmark's main body for guiding and coordinating health emergencies[147], changed its position from a containment strategy, which it had promoted during the first wave to a suppression strategy, leading to more restrictive COVID-19 measures (Laage-Thomsen et a.l, 2022).

Beginning in August 2020 social distancing measures like wearing masks were gradually reintroduced as cases began to climb. A ban on gatherings of more than 10 people followed. The second lockdown started on December 16, 2020 (Laage-Thomsen et al., 2022) as cases began to peak to an all time high (Figure 9).

As cases began to fall in the spring of 2021, the government's re-opening strategy in April 2021 represented a major change from its previous suppression strategy, with contact tracing, building high test capacities, and quarantines taking the forefront (Ornston, 2021). As shown in Figure 10, testing capacities started rising around this time and continued to rise rapidly through to 2022. These COVID-19 regulations were implemented also due to partnerships between the government and the private sector,

[147] Danish Health Authority (2013). *Pandemic Influenza Preparedness, Part ll: Guidance for regions and municipalities*. Retrieved April 28, 2023, from: https://www.sst.dk/-/media/Udgivelser/2013/Publ2013/Beredskab-for-pandemisk-influenza-del-2,-d-,-National-strategi-og-fagligt-grunndlag.ashx?la=da&hash=3C71CA640F768CFF503A68265200C220826B20CB

such as the software developer Netcompany supporting contact tracing. The partnership between the government and the private firm Novo Nordisk enabled mass testing. In particular it used contact tracing measures through the ‘Coronapas’ app, which included information about the users vaccination status and whether they tested negative against COVID-19[148]. The use of both mass testing and contract tracing allowed the government to trace new outbreaks and target restrictions accordingly while allowing the rest of the country to remain open[149].

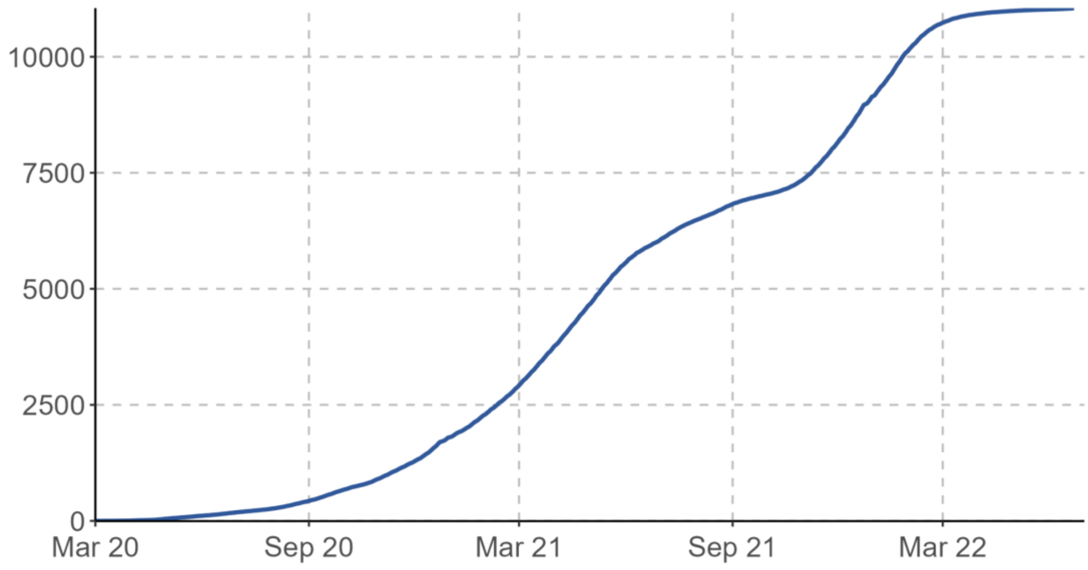

Figure 10: Total COVID-19 tests per 1,000 people in Denmark (Source: Mathieu et al., 2021)

The contact tracing app supported the reopening of small businesses through the “Coronapas” app by proving the person is either fully vaccinated, has already recovered from COVID-19, or has tested negative within the last 72 hours[150]. According to the State

[148] Reuters (2021, November 9). Denmark revisits its “corona pass” as third wave of epidemic looms. Retrieved April 24, 2023 from: https://www.reuters.com/business/healthcare-pharmaceuticals/denmark-reinstate-corona-passport-after-rise-infections-tv-2-2021-11-08/

[149] Reuters (2021, April 16). *Denmark speeds up reopening of economy as new virus cases ease*. Retrieved April 24, 2023 from: https://www.reuters.com/world/europe/denmark-speeds-up-reopening-epidemic-stabilises-2021-04-16/

[150] Euronews. (2021, April 14). *Belgium, Switzerland and Denmark announce easing of COVID restrictions*. Retrieved April 24, 2023, from: https://www.euronews.com/2021/04/14/belgium-switzerland-and-denmark-announce-easing-of-covid-restrictions

Serum Institute[151], an expert organization responsible for epidemiological surveillance (Laage-Thomsen et al., 2022), Denmark had the lowest death and infection rate at that time, so the re-opening began earlier than planned in April 2021[152]. On April 21 outside gatherings were allowed again for up to 50 people. Museums, shopping malls, libraries, indoor activities in restaurants and cafes, indoor sports activities under the age of 18, and classes were opened again. Additionally, roughly 6% of the population were tested daily.

The third wave began in September 2021. Interestingly, in August 2021 Denmark announced that the COVID-19 pandemic would enter the post-pandemic era and all restrictions would be dropped in August. The political reasoning was the high vaccination rate and position that vaccination should be the dominant strategy in dealing with the pandemic[153]. German newspapers like the Süddeutsche Zeitung criticized Denmark's liberal position as too risky. As the Omicron variant of the virus became dominant in December 2021[154], the government decided to implement COVID-19 measures again to suppress infection cases: Outdoor gatherings were restricted, wearing of masks was recommended, and restaurants had to close at 11pm[155].

Relatedly and in parallel to these restrictive policies, the Danish government adopted a compensation program to address its potential economic consequences. This compensation program was successfully implemented through mediation between industry and labor. For these actors, it was possible to impose temporary wage compensation within 24 hours. Moreover, this compensation program was generously adopted, with a total sum of over 300 billion DKK, which accounted for approximately 5% of the Danish GDP in 2019. The adoption of the compensation program is described as atypical for Denmark, as it was unclear if the design would be successfully implemented in the Danish institutional design. Traditionally Denmark rather invests in worker

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[151] Reuters. (2021, April 16). *Denmark speeds up reopening of economy as new virus cases ease*. Retrieved April 24, 2023, from: https://www.reuters.com/world/europe/denmark-speeds-up-reopening-epidemic-stabilises-2021-04-16/
[152] Ibid.
[153] Strittmatter, K. (2021, August 31). Die Wette der Dänen. *Süddeutsche*. Retrieved April 24, 2023, from: https://www.sueddeutsche.de/meinung/daenemark-corona-impfungen-corona-restriktionen-1.5396273
[154] Belousova, K. (2021, December 16). Omikron-Hotspot und Impfvorbild: So reagiert Dänemark. *ZDF*. Retrieved April 24, 2023, from: https://www.zdf.de/uri/22d1e346-ff79-4566-80d7-70fa111c05cb
[155] Kruse, H. (2021, December 24). Dänemarks Corona-Politik: Prinzip "Eigenverantwortlichkeit." *ZDF*. Retrieved April 24, 2023, from: https://www.zdf.de/uri/a83b3b33-92a5-4aa5-92f6-e36b6384d3d9

retraining and has few restrictions on firing workers, thus the design of the compensation program represents a new political strategy (Ornston, 2021).

Overall then, this section shows that the Danish government undertook a varied and flexible approach to responding to COVID-19. The Danish government experimented with both broad suppression measures that focused on restricting access to institutions like schools and workplaces as well as strategies more focused on tracking and tracing cases in order to engage in more regionally targeted measures depending on the severity of the pandemic. Overall, its efforts were largely successful and by October 1, 2021, helped Denmark achieve one of the best pandemic performances in the EU.

The Danish government's handling of health experts and other actors in the decision-making process during the COVID-19 waves

The following section provides more detail on the Danish government's handling of health experts and other actors in the decision-making process of COVID-19 policies and regulations.

We first consider how the Danish government decided for a given pandemic strategy over another. Generally speaking, the government's decisions to impose or relax COVID-19 restrictions were made by primarily drawing from expertise from three different institutional bodies, the DHA, the SSI, which reports to the DHA (Laage-Thomsen et al., 2022) and university-based experts (Christensen et al., 2022). The DHA generally made more liberal recommendations than the SSI with regards to pandemic measures. For instance, in January 2020, the DHA assessed the danger of COVID-19 entering Denmark as being low. Therefore, they recommended a mitigation strategy to deal with the pandemic and recommended no travel restrictions or school closures. One month later, the DHA changed its position regarding handling the pandemic as infection rates increased rapidly to focus on containment and travel restrictions as well as voluntary self-isolation.

Despite the intense involvement of experts in the COVID-19 decision-making process, not all expert groups' involvement was equal. The Danish government favored some experts over others. In particular, it favored a more restrictive position, held by the SSI over the more relaxed one held by the DHA (Christensen et al., 2022). Moreover, the government was able to ignore its own health agency which was in favor of a mitigation strategy and in contrast decided on following a suppression strategy in response to increasing COVID-19 cases. This shows that although health politics is a decentralized task, the preparedness system is in fact centralized and the responsibility of the government (Laage-Thomsen et al., 2022). Especially at that time of the pandemic, the main spokespersons about the COVID-19 narrative were politicians (Nielsen and Lindvall, 2021). This is why politicians, mainly the government, affected the politicization of the COVID-19 response.

It is also possible to evaluate drivers of government response not on the ultimate strategy pursued, but on the actors involved. Ornston describes the Danish network system as participatory, meaning it facilitates "gathering information, persuading skeptics, compensating adversely affected actors, and coordinating state and societal action" (Ornston 2021, p. 257). Participatory networks are characterized by the integration of actors in widely distributed high-trust networks which cut across regional, sectoral, and political cleavages. This network design facilitates the distribution of new ideas and helps convince actors about risky or new policies due to an ongoing interaction. In this regard, the first wave of COVID-19 involved cross-partisan influence and support in the decision-making process. Moreover, the government included the private and public sectors as well as labor and industry in the design of policies (Ornston, 2021).

From this perspective, some argue that the selective involvement of experts, although intensely used however, represents a limitation to the participatory network in the Danish decision-making process (Christensen et al., 2022). Christensen concludes that the government arrangement was hierarchical due to selective access to expertise which is linked to more politicization regarding COVID-19 (Christensen 2022), but also stresses the involvement of the parliament in terms of compensation measures (Christensen et al., 2022). In contrast, according to others however, these partnerships and cross-sector mediation highlight that Denmark selectively used the advantages of a participatory network approach in the design of policies. This links to flexibility and support of early and risky policies strategy (Ornston, 2021).

In general then, many institutions and actors helped influence which pandemic strategies were considered, and ultimately pursued. To the extent a given institution had independent influence on government decision-making or conversely, were expressly selected by the government to support policies that they would have imposed anyway however is subject to further research.

Public support and trust of pandemic policies

The last section of this report considers how public support and political trust for pandemic policies changed over the course of the pandemic and how this affected the effectiveness of these measures during the different pandemic waves.

First wave

During the first wave of COVID-19, the support for the Danish government's policies was strikingly broad (Christensen et al., 2022). Widespread societal and political support for these measures also likely explain these high rates of compliance. Indeed, support was so broad that even opposition parties also supported the lockdown (Christensen et al., 2022). Meanwhile, more than 80% between March and June 2020 stated they approve the governance response (Ornston, 2021). Additionally, a survey seeking to measure overall willingness to adhere to pandemic related distancing measures found that most Danes stated they fully support social distancing measures[156], such as limiting physical contact with others and keeping a distance to the elderly/chronically ill (Böhm et al., 2020).

More generally, political trust of the Danish people has also been historically quite high. Nielsen and Lindvall (2021) differentiate two sources of political trust in Denmark. First, they note that countries with strong state capacity, including e.g. universal welfare state, free health care, and education, as well as corporatist traditions and a multi-party system, like Denmark does, are more likely to implement policies effectively, and correspondingly are likely to have higher levels of political trust. Second, they also note that Denmark is linked with high levels of political trust for psychological and behavioral reasons. That is, Danes have high levels of voter turnout, generalized trust in strangers as well as high levels of social capital, all of which are linked to higher levels of political trust. This arguably translated into high levels of trust during the pandemic, especially during its first months (Ornston 2021, p. 250). Indeed, during the wave, there was broad trust in health authorities (Nielsen and Lindvall, 2021), and there was a low degree of politicization (Christensen et al. 2022). Nevertheless, some trust and support can also be explained by a rally-around-the-flag effect (Nielsen and Lindvall, 2021). The rally-around-the-flag

[156] Ornston (2021) states that this number may be exaggerated.

effect refers to the positive effect of crisis and emergency on political trust and political support for institutions (Nielsen and Lindvall, 2021).

Second wave

During the second wave of COVID-19 right-wing parties distanced themselves from the broad support of the government, promoting more liberal positions regarding the economy (Christensen et al., 2022). Cross-party support and involvement of opposition parties in the decision-making process were limited after the first period of COVID-19. This also represents a limitation to the participatory approach (Ornston 2021).

Christensen et al. (2022) highlight that this wave did not have a significant impact on trust, although support for these measures was still broad (Christensen et al., 2022). After a scandal known as the "Mink scandal" occurred a debate arose about whether decisions should be made after scientific evaluations and if politicians should be able to decide against these recommendations. The scandal referred to the execution of an entire mink population due to concerns about COVID-19 mutations (Laage-Thomsen, 2022). Christensen et al. (2022) link this scandal with a rising politicization. This shows that the strong position of the government as the main spokesperson about COVID-19 was questioned (Laage-Thomsen et al., 2022). In addition, the strong position of the government as the main spokesperson about COVID-19 was questioned.

Third wave

The third wave of COVID-19 was characterized by high trust in health agencies and followed the principle of individual responsibility[157]. This shows that responsibility was drifting away from the Danish government. This represents a contrast to the first wave of the pandemic. The responsibility for handling COVID-19 during the first wave was quite centralized, as the government decided, against the recommendations of the DHA, on restrictive policies such as the lockdown. On December 24, 2021 Denmark had a vaccination rate of 80% of people having at least one dose of vaccine[158].

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[157] Kruse, H. (2021, December 24). Dänemarks Corona-Politik: Prinzip "Eigenverantwortlichkeit." *ZDF*. Retrieved April 24, 2023 from: https://www.zdf.de/uri/a83b3b33-92a5-4aa5-92f6-e36b6384d3d9

[158] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer.

On August 19, 2021, Denmark already had a vaccination rate of 73%, with 67% of the population being fully vaccinated and ~6% of people having received one dose of the vaccine. The literature explains the high vaccination rate with the high trust of Danes regarding health agency experts[159]. Conspiracy theories or protests against COVID-19 policies were very rare and did not play a role in Danish policymaking (Olagnier and Mogensen, 2020). Moreover, Denmark stopped vaccinating with AstraZeneca as one of the first countries due to health concerns[160], which perhaps further served to boost the government's credibility over vaccines.

Conclusion

Denmark showed flexibility in early and fast responses to COVID-19. The country imposed nationwide restrictions, as one of the first European countries, and decided on, at the time, untested strategies such as mass testing and contact tracing. This strategy was successful in terms of quantitative implementation (Ornston, 2021). Risky policies such as phases of liberal handling of the pandemic as in the reopenings of April 2020 /2021 and the declaration of the COVID-19 virus as not socially threatening in August 2021 could be realized.

The beginning of a post-epidemic era of COVID-19 in September 2021 could have been risky, especially because of the following Omicron wave[161]. Nevertheless, one could argue that the Danish government was able to react quickly and was able to change strategy fast, because of very interactive network systems. Ornston (2021) explains the Danish implementation of bold policies through the advantageous use of participatory networks (Ornston, 2021). Confidence in the COVID-19 strategy changes, efficient networking systems, and cooperation between stakeholders lead to Denmark quickly reaching testing and contact tracing capacities.

[159] ZDFHeute. (2021, November 28). Experte zu dänischem Corona-Erfolg: Vertrauen ist wichtig - ZDFheute. Retrieved April 24, 2023, from: https://web.archive.org/web/20211128050455/https://www.zdf.de/nachrichten/politik/corona-daenemark-vertrauen-100.html

[160] Reuters. (2021, April 16). Denmark speeds up reopening of economy as new virus cases ease. Retrieved April 24, 2023 from: https://www.reuters.com/world/europe/denmark-speeds-up-reopening-epidemic-stabilises-2021-04-16/

[161] Strittmatter, K. (2021, August 31). Die Wette der Dänen. *Süddeutsche*. Retrieved April 24, 2023, from: https://www.sueddeutsche.de/meinung/daenemark-corona-impfungen-corona-restriktionen-1.5396273

Of course, the participatory network approach and the hierarchical structure of governance response of Denmark is just one part of an explanation for Denmark's ability to react fast and efficiently. Important to stress is that efficiency is also very dependent on societal support for instruments as well as on the efficiency of the health care system. Denmark is a positive example of trusting citizens and support of democracy. Therefore, regulations were implemented without high polarization and increased efficiency. It is important to stress that the high political trust of Danes in vaccines and thus the high vaccination rate enabled the more liberal handling regarding COVID-19. All of these factors helped Denmark manage the pandemic exceptionally well compared to other EU countries.

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Finland: Country Report of COVID-19 Government Responses by Avirat Desai

Introduction

This country report provides a brief introduction to the public and political discourse of the COVID-19 pandemic in Finland until 1st October, 2021. In fleshing out the specifics of Finnish policy-making, this country report pays close attention to the early timeline of Finland's COVID-19 related policy making and the extent to which such measures helped curb COVID-19 case and death rates. In particular, it stresses two main factors influencing the Finnish case: its unitary system of government and relatively high public support for COVID-19 policies.

Indeed, because Finland possesses a unitary government, its central government and judiciary nominally holds all the decision-making power for the country. That being said, its representative parliamentary system distributes this power amongst different parties, usually by forming a coalition. This form of government fostered an unanimous, relatively quick response to the virus, especially at the start of the pandemic in comparison to many federal countries like Germany or the United States. By delaying the peak of infection rates, the Finnish government's policy reaction arguably gave the public and institutions time to adapt to the socio-economic challenges posed by COVID-19.

Meanwhile, Finland is also unique in enjoying relatively high public trust from its citizens. Moreover, at least in part due to its relative success in addressing the public health effects of the pandemic, the Finnish government also enjoyed relatively high public support for its policies.

The rest of this report will explore these dimensions of the Finnish pandemic experience in more detail. In doing so, it will also cover the policy responses the country employed to mitigate the spread and effects of the virus.

COVID-19 Policy Responses

In what follows, I explore how Finland's unitary structure and legal basis for reacting to crisis situations helped it react quickly and adaptively to the COVID-19 pandemic during three succeeding phases of the pandemic. To do so, this country report uses data on policy responses from the CoronaNet Research Project (Cheng et al., 2020).

The Pre-Crisis Phase (December 2019 - February 2020):

The basis of Finland's capacity to react to crisis situations can be found in a number of its policies and laws including policies such as the National Preparedness Plan for an Influenza Pandemic and laws like the Communicable Diseases Act and legislation on emergency powers, in particular Section 23 of the Constitution[162] and the Emergency Powers Act[163]. Of particular note is Finland's preparedness for a crisis and national emergency, with the National Emergency Supply Agency being responsible for stockpiling of emergency equipment like masks and resources such as food as well as maintaining a permanent stockpile of the same at all times.[164]

Meanwhile, the main institutional actor of note during the pandemic was the Finnish Institute for Health and Welfare (THL). Operating under the Ministry of Social Affairs and Health, the THL is Finland's main organization responsible for the research and prevention of diseases, including COVID-19. The THL has shaped the public and political discourse since the pandemic's start with information, guidelines, and recommendations. Decisions on COVID-19 measures did not only follow the recommendations of medical and constitutional experts, but were also inspired by other countries' responses or the heeding advice from the WHO. This is why the literature often describes Finland as a case of policy isomorphism (Christensen et al., 2022).

During the early months of the pandemic, the government and THL acted swiftly in transparently addressing the evolving situation, with Finnair suspending its flights to China and health authorities placing suspected contact persons in quarantine. Until March 2020, Finland's policies mainly focused on public awareness measures and health monitoring of positive cases and contact persons. These measures ranged from common hygiene to social distancing recommendations.

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[162] The Constitution of Finland (1999). *The Constitution of Finland 11 June 1999 (731/1999, amendments up to 817/2018 included)*. Retrieved April 27, 2023, from: https://www.finlex.fi/en/laki/kaannokset/1999/en19990731.pdf

[163] Government of Finland (2011). *The Emergency Powers Act*. Retrieved April 27, 2023, from: https://finlex.fi/fi/laki/ajantasa/2011/20111552

[164] NESA. (n.d.). The National Emergency Supply Agency. *Huoltovarmuuskeskus Försörjningsberedskapscentralen*. Retrieved April 25, 2023, from https://www.huoltovarmuuskeskus.fi/en/organisation/the-national-emergency-supply-agency/

The Initial Crisis Phase (Early March until the mid May)

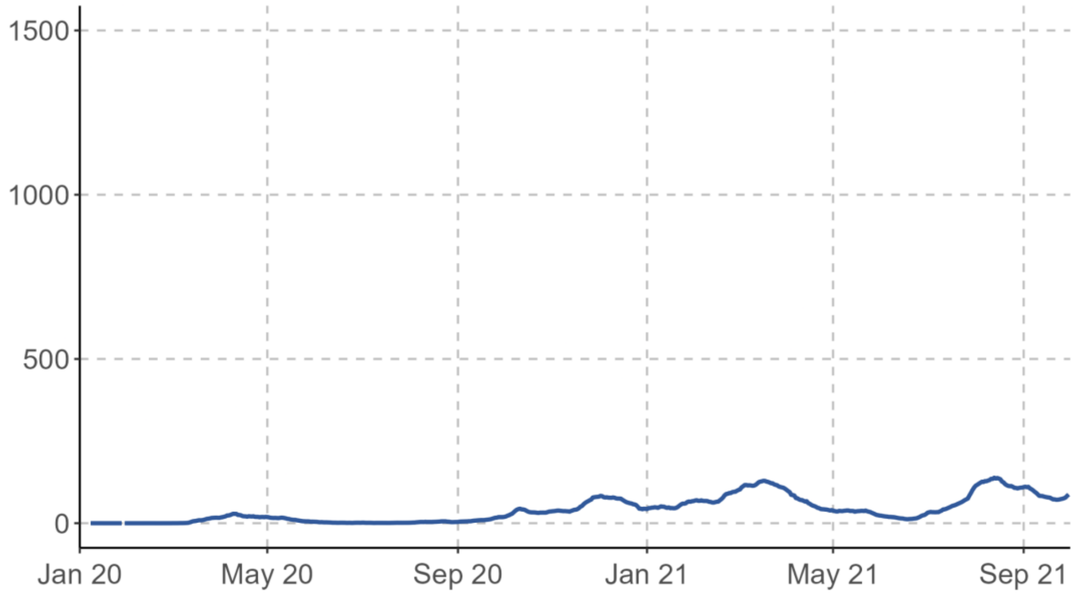

Figure 11: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Finland.[165]

Like most European countries, Finland's first serious encounter with the pandemic did not occur until early March 2020 when it experienced its first wave of cases (see Figure 11). With continuously rising infection numbers in Finland from early March onwards, the Finnish government declared a state of emergency on 16th March 2020, allowing it to use its emergency powers and giving rise to several other restrictions and a partial lockdown, which after further revisions lasted until 15th June 2020[166].

During the initial phase of the pandemic, the Finnish government along with the THL were able to quickly put in place many restrictions and closures across the country, with various advisories recommending employees to work from home and participation limits to mass gatherings like conferences, events or concerts. Moreover, the country's government decided to close public institutions like museums, theaters, cultural centers, club and recreational facilities, swimming pools and other sporting venues until 13th May,

[165] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer
[166] Milne, R. (2020, September 25). How Finland kept Covid-19 in check and protected its economy. *The Irish Times*. Retrieved April 28, 2023, from: https://www.irishtimes.com/news/world/europe/how-finland-kept-covid-19-in-check-and-protected-its-economy-1.4364512

2020. Interestingly, Finland never bindingly closed private businesses. Consequently, all businesses, by abiding to the current restrictions on social distancing and gatherings, could remain open, hence decreasing the burden on individuals and the economy. Furthermore, neither curfews nor complete lockdowns existed throughout the course of the pandemic.

Meanwhile, the country relied highly on temporary and partial measures to decrease the negative effects on the economy, and thus on the people. Indeed, on 20th March 2020, the government announced a €15 billion support package to aid businesses and individuals suffering from the economic slowdown resulting from the virus. These financial support measures came into effect comparatively early, a week or two earlier than other Nordic countries, helping to slow down the long-term socio-economic effects of the pandemic (Tiirinki et al., 2020).

Note that though Finland's government is relatively centralized, Finland's healthcare system is on the contrary relatively decentralized. As such, municipalities are mainly responsible for funding and implementing healthcare policies in their regions. This remained unchanged during the COVID-19 pandemic and led to regional financial deficits. In support of the municipalities, the central government put forward special provisions for funding and staff management.

The Preparation Phase (end of May until the mid September)

As summer approached and infection rates decreased, Finland started preparing for a second wave by building up economic, social, and technical infrastructures along with loosening some restrictions. In doing so, it proved itself to be adaptive along a number of dimensions, including towards, citizen's needs and opinions, using existing institutional and social resources to its advantage in combating the disease as well as new knowledge about the virus.

With regards to citizen needs, the Ministry of Social Affairs and Health appointed three different task forces to tackle its multifold consequences: A task force (1) to strengthen the well-being and equality of Fins in the aftermath of the COVID-19 crisis; (2) to ensure the cooperation between authorities in combating COVID-19 at border crossing points; and (3) to look at the decisions that were made in line with protecting the population from the pandemic and to improve public safety and security. The highlight of these task forces and what makes them unique is their establishment for resident's well-being, equality and safety.

Meanwhile, the government was also not shy about both creating new technological infrastructures or building on older ones to help Finns adapt to the evolving pandemic environment. To that end, the Finnish government implemented several health technology measures which helped both the government and Finnish citizens track the progression of the virus. In particular, Finland successfully launched new digital tools like the contact tracing app "Corona Flash" in August 2020 with almost one in two Finns downloading the app, making it easier for authorities to track contact persons. In addition, the country put in place a Covid-19 digital self-assessment tool "Omaolo", a digital form to be filled out if a person suspects that they have Covid-19. In addition to these tools, it was also likely much easier for Finns to transit to home office and home schooling structures thanks to the country's advanced digitized infrastructure[167].

The government also continuously adapted its pandemic policies to new knowledge about the virus and existing resource constraints. Indeed, by August 2020, the THL had further acquired deeper knowledge about the transmission of the virus and hence recommended various social distancing and hygiene measures such as the use of face masks or to keep a distance of 1-2 meters from other people in public spaces. Subsequently, face masks were made mandatory in all indoor spaces, including businesses and stores. In contrast to health experts however, on 18th April 2020, Finland's Ministry of Social Affairs and Health initially announced that it would not recommend the general population to use medical face masks or fabric masks, but only to avoid crowded places. This arguably reflects the government's challenge to cope with the scarcity of health resources for frontline workers during the early days of the pandemic when the demand was high and the supply faced a global crunch.

From the second half of 2020 onwards, the Finnish strategy also shifted from a restrictions-dominant approach to one that allowed leeway for economic considerations. Although the government relaxed restrictions on public gatherings and reopened various public institutions, restaurants, bars, and cafes still faced many limitations with regard to their opening hours and the number of customers allowed. Given that these businesses could offer take-away and delivery options, such measures allowed Finns to take

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[167] Höppner, S. (2020, November 19). *Finland: A role model in dealing with the coronavirus?*. Retrieved April 28, 2023, from: https://www.dw.com/en/coronavirus-finland-sweden-role-model/a-55664117

measures against the virus while minimizing the negative impact of these measures on the Finnish economy.

The Hybrid Phase (mid of September 2020 until October 2021)

During this phase, Finland's strategy of dealing with the COVID-19 pandemic shifted to what the government called 'the hybrid strategy'. This referred to a move from extensive restrictive measures to enhanced management of the pandemic: focusing highly on testing, tracing, isolating and treating (Tiirinki et al., 2020)[168]. The new focus of this strategy was to protect at-risk groups while minimizing societal and economic costs and the impact on citizen rights.

With the second wave of the virus starting from mid-September 2020, case rates increased steadily. However, both since information about the transmission of the virus was clearer and because of its new hybrid strategy, only a few restrictions were put in place across the country avoiding curfews or complete lockdowns. Starting early October 2020, the central government decided to implement measures regionally based on the incidence rate, which has been adopted by a number of countries across the EU like Italy and Greece. For example, depending on the case rate, public gatherings were restricted to a maximum of 10/20/50 people and schools in many regions went back to distance learning. To maintain social distancing in high-risk areas, the government issued bans on visiting sensitive places like hospitals, health centers, clinics, etc.

With the development of a COVID-19 vaccine, on 10th December 2020, Finland's pandemic response strategy shifted yet again. It decided to implement a vaccination strategy which put priority on vaccinating healthcare and social welfare workers first. Because Finland, like all other EU countries, was a participant in the EU joint vaccine procurement scheme, it received 1.23% of the procured vaccines, based on its population. The number of doses procured exceeded the number of needed doses because there was the possibility that vaccines under development would not be ready in time or might not be approved[169]. By the end of the third wave, the widespread distribution of vaccines and awareness about the pandemic contributed to normalizing

[168] Tynkkynen, L.-K., Atkins, S., Keskimäki, I., Koivusalo, M., Sinervo, T. (2020, April). Finland's response to the Coronavirus Pandemic. *Cambridge Core Blog*. Retrieved April 28, 2023, from: https://www.cambridge.org/core/blog/2020/04/06/finlands-response-to-the-coronavirus-pandemic/#anchor-original-post

[169] Finnish institute for health and welfare (2022, September 27). *Arranging COVID-19 vaccinations in Finland*. Retrieved April 28, 2023, from: https://thl.fi/en/web/infectious-diseases-and-vaccinations/what-s-new/coronavirus-covid-19-latest-updates/vaccines-and-coronavirus/arranging-covid-19-vaccinations-in-finland

people's lives across the country and the recovery of Finland's social and economic structure.

Overall, when summer came to an end in 2020, Finland faced a 2nd and 3rd wave of Covid-19 with stricter restrictions and a higher level of preparedness with respect to the country's infrastructure and the Finns' knowledge about the virus. Amongst other factors, the measures implemented by the government increased the recovery rate significantly, leading to a constant increase in the recovery and a significant drop in the death rate[170].

Public Support and Perception of the pandemic and pandemic measures:

Along with the nature of the COVID-19 disease itself, public trust in public institutions and public sentiments have also played an important role in Finland's pandemic response, an issue that I explore more fully in this section.

Unlike in most European countries in which the public resistance towards strict governmental measures was prominent, Finland's trust in the government was comparatively high. In a survey conducted by the European Parliament (2021) during the second quarter of 2020, 73 percent of Finns said they were coping well with the measures. The Finnish Green Party politician Rosa Meriläinen supported this by stating that the public tries to stick to what the government prescribes and she also points towards the possibility that the high trust in government is rooted in the strong welfare state of the country.[171]

Additionally, Finland provides an example for how social norms impact the public's perception of Covid-19 measures with social distancing being a common social practice in Finns' everyday lives. According to the same survey by the European Parliament in summer 2020, 23 percent of people in Finland said that their lives had improved as a result of the lockdown in the spring. The social psychologist Nelli Hankonen of the University of Helsinki reasoned that this may have to do with the fact that Finns are not very sociable and like to be alone. Furthermore, the personal space defined as how close

[170] According to data from the Worldometer (n.d.) *COVID-19 Coronavirus Pandemic*. Retrieved April 26, 2023, from: https://www.worldometers.info/coronavirus/country/finland/

[171] Höppner, S. (2020, November 19). *Finland: A role model in dealing with the coronavirus?*. Retrieved April 28, 2023, from: https://www.dw.com/en/coronavirus-finland-sweden-role-model/a-55664117

a person would like to get to someone is already wider than average for Finns which could also support the obedience to social distancing measures.[172]

However, the first year of the pandemic experienced a shift from a public consensus supporting restrictions to a more outraged and divided nation. Lockdown measures were the main reason for criticism, with businesses, cultural and trade unions becoming increasingly vocal. Since the government and especially the Prime Minister’s office mostly had the upper hand over medical experts in decision making, academics and policy experts characterize the Finnish policy making on Covid-19 measures as moderately politicized. On the one hand, there were some ambiguous situations where constitutional experts challenged the legality of certain lockdown measures, whereas medical experts called for stricter restrictions. On the other hand, for most of the restrictions, the government referred to the recommendations of the THL signaling that Covid-19 was less political in character. (Christensen et al., 2022).

In general however, nation-wide protests were comparatively few and small in numbers of protestors, and those held were mostly to raise voice against some excessive business restrictions.

Conclusion and Discussion:

The above conducted analysis of the policy responses to COVID-19 in Finland has highlighted that the country’s political and societal structures strongly influenced how measures to condemn the spread of the virus were perceived by the public and to what extent the Finns were accepting of restrictions imposed on their everyday lives.

With its unitary system of government, decision-making and implementation was rather rapid and decisive in Finland compared to a federal state like Germany. With negligible resistance to government policies and an already developed digital infrastructure, the transition to a digital economy and education was relatively quickly and widely accepted.

The pandemic hit the Finnish economy hard due to the excess expenditure on Covid-19 measures, a decrease in global trade, and less buying capacity of Finnish citizens. However, Finland’s road to recovery has been less complicated than most industrious and highly populated nations, as due to their hybrid approach and no complete lockdowns and curfews, most private businesses could function in a hybrid

[172] ibid.

(online+offline) or normal manner, and businesses like restaurants and bars could make use of the take-out and delivery options. Indeed, its economy was resilient enough to allow Finland to take part in international cooperation efforts helping other nations with health resources to fight the pandemic, mainly within the EU, but also to worse-struck countries like India[173].

Although no country's Covid-19 response was perfect, crisis management and traditionally high trust in government by the public are the things Finland used well to avoid the worst in the initial days. Later, with more knowledge about the pandemic, and the inflow of vaccines, even with high infections, they were able to keep deaths at a low. This overall positive outcome was likely only possible in Finland because of a number of factors, including its unitary government which allowed it to act quickly, its general adaptivity to the changing pandemic situation and high levels of public trust.

[173] Finnish Government, Ministry of Foreign Affairs (2022, April 29). *Partner countries benefited from Finland's support in their COVID-19 response*. Retrieved April 28, 2023, from: https://valtioneuvosto.fi/en/-/partner-countries-benefited-from-finland-s-support-in-their-covid-19-response

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Christensen, T., Jensen, M. D., Kluth, M., Kristinsson, G. H., Lynggaard, K., Lægreid, P., ... & Skúlason, G. A. (2022). The Nordic governments' responses to the Covid-19 pandemic: A comparative study of variation in governance arrangements and regulatory instruments. *Regulation & Governance*. https://doi.org/10.1111/rego.12497

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Germany: Country Report of COVID-19 Government Responses by Clara Fochler

Introduction: The COVID-19 Crisis in Germany

Although Germany was one of the first European countries to experience a COVID-19 outbreak, and indeed, experienced quite high case numbers during various phases of the pandemic, it was nevertheless able to keep mortality rates low, (Perlstein & Verboord, 2021) especially during the first COVID-19 wave (Stafford, 2020). That is, though it counted more than 38 million cases out of a total population of over 80 million as of March 2023, less than 170,000 of these cases resulted in deaths[174]. This country report forwards two main arguments to help explain this puzzle.

To set the stage, note that at the beginning of the pandemic, a combination of varying numbers of cases and strong outbreaks in isolated locations on the one hand, with diverse political, social, and economic interests of individual states on the other hand, led to different policies in the federal system. Ultimately however, unified policy action following nationwide outbreaks[175] led by Robert Koch Institute (RKI), Germany's national institute for prevention and surveillance of the health situation in Germany, helped keep mortality rates low. Additionally, widespread support by citizens for COVID-19 measures at the beginning of the pandemic and the strong recognition of the RKI as a competent institution for proposing measures also played an important role to their success. As the pandemic continued in subsequent waves however, both increasing skepticism over COVID-19 measures and concerns about their economic and social impact led to declining acceptance of the measures among citizens and lower public confidence in the RKI proposals.

As Graichen (2021) and Kropp and Schnabel (2022) have argued, these factors led to greater policy fragmentation during the second and third waves of the pandemic, which ultimately reduced Germany's ability to replicate the low COVID-19 case numbers it had during its first wave. Policy fragmentation also led to higher mortality rates in eastern German states compared to the rest of Germany during the second COVID-19 wave

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[174] WHO. (March, 2023). Germany: WHO Coronavirus Disease (COVID-19) Dashboard With Vaccination Data. *WHO Coronavirus (COVID-19) Dashboard*. Retrieved April 26, 2023 from: https://covid19.who.int

[175] Ellyatt, H. (2020, October 22). Why Germany's coronavirus strategy might come back to haunt it. *CNBC*. Retrieved April 26, 2023 from: https://www.cnbc.com/2020/10/22/germanys-coronavirus-strategy-why-it-might-not-work.html

(Morwinsky et al., 2021). Nevertheless, because of high testing capacity for the entire population and especially for nursing homes, the RKI was able to communicate the urgency of action to state governments, which again led to nationwide strict policy action to prevent further deaths during the second wave. Deaths during the second wave were also overall more numerous compared to those in the first wave outbreaks because the relatively late implementation of policies during the second wave led to a large number of outbreaks in nursing homes (Morwinsky et al., 2021).

In short, the two main arguments outlined above can be summarized as follows: First, during COVID-19 waves, German subnational states responded quickly and in a relatively unified manner to implement RKI recommendations, leading to lower mortality rates. Second, with declining public acceptance and regional disparities, states changed their COVID-19 policies and shifted to less stringent measures as the pandemic progressed, leading to an overall increase in the number of cases and a spread to nursing homes, which largely explains increased mortality rates during the second COVID-19 wave (Morwinsky et al., 2021). However, the subsequent nationwide implementation of RKI recommendations helped to keep the ratio of case rates to deaths low overall, when compared to other countries.

The following section analyzes this trend of a shift from RKI recommendations to policy decisions and a turn toward economic and social concerns, especially in times of low case numbers. These arguments are first addressed in the social and political discourse on the COVID-19 pandemic in Germany below and then presented in a descriptive analysis using the CoronaNet dataset (Cheng et al., 2020).

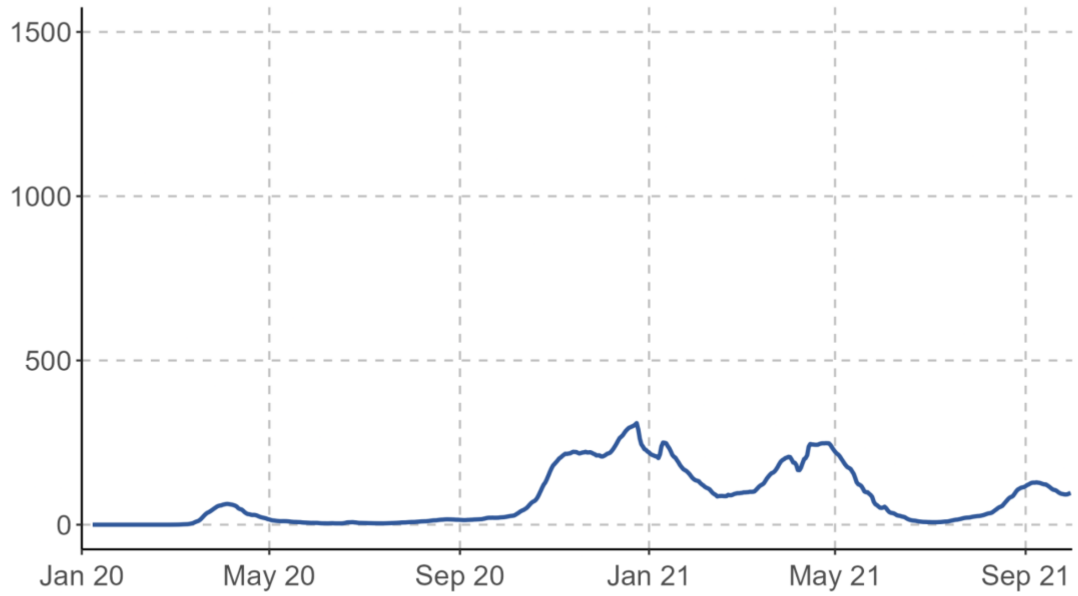

Figure 12. Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Germany.[176]

As can be seen in Figure 12, between January 1, 2020, to October 1, 2021, Germany experienced three COVID-19 waves. These waves were accompanied by periods of relaxation with lower infection and mortality rates (Schilling et al., 2021). The second wave, lasting between December 1st, 2020, and February 1st 2021, showed an even greater increase in COVID-19 case numbers and more severe COVID-19 cases (Schilling et al., 2021). The COVID-19 wave in the summer of 2021 had fewer fatalities and no ICU bed shortages. This evolution of political discourse in Germany across the three COVID-19 waves is illustrated below.

Political Discourse during and after the COVID-19 waves

The first COVID-19 case in Germany was detected on January 27, 2020 (Perlstein and Verboord, 2021), but the Germany government only initiated political action to stop the spread of the virus after two key events, which coincidentally took place on the same day, March 11, 2020: the WHO's international declaration of COVID-19 as a pandemic (Perlstein and Verboord, 2021) and nationwide COVID-19 outbreaks in Germany

[176] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

(Schilling et al., 2021). Before this date, COVID-19 infections were both limited in number and limited to specific areas of the country (Schilling et al., 2021). During this phase, the federal government only took preparatory measures and issued entry regulations for certain countries. Similarly, the RKI's initial approach to the pandemic consisted primarily of standard procedures and recommendations for viral infections (Schilling et al., 2021). The RKI did however, take advantage of its other competencies in pandemic management to respond to this novel threat, including oversight of case numbers through wide-ranging tests in the entire population and specific age groups and expertise in the field of pandemic outbreaks. Because of these competencies, COVID-19 testing was already prepared in January 2020, making it possible to build capacity for widespread testing in subsequent waves (Stafford, 2020), leading to early detection of disease and rapid preventive treatment[177]. In addition, COVID-19 cases could be detected at an early stage (Stafford, 2020), which led to early and far-reaching pandemic-wide policy measures, especially in the first phase of the pandemic.

Following the decisive events of March 11, 2020, German policy making began to have real bite. As part of this, following the RKI's expert advice, German subnational governments began to implement policies to reduce social contact by instituting distancing measures as well as closing schools and businesses (Büthe et al., 2020). Meetings and consultations between the RKI and national and federal representatives became more frequent and expanded to more authorities (RKI-Lagezentrums-Gruppe et al., 2021). In preparation for those meetings, the RKI was also responsible for collecting data from national and federal authorities about COVID-19 and keeping track of hospital capacity (Schilling et al., 2021). RKI's recommendations were generally highly trusted by many citizens during the first COVID-19 wave (Eitze et al., 2021). It was accompanied by a high level of acceptance of the RKI's analyses and recommendations by policymakers (Büthe et al., 2020).

During the first wave, this combination of societal acceptance and political confidence in the RKI's recommendations led to early and similar policy strategies nationwide (Büthe et al., 2020), unifying the perceptions of the necessary political response to COVID-19 to enable cooperation in a federal system. This happened, even though the number of COVID-19 cases differed among the federal states (Schilling et al., 2021). The policy

[177] Tan, M., & Trujilo Jara, K. (2020, July 31). Why is Germany's Covid-19 fatality rate comparatively low? *Economics Observatory*. Retrieved April 26, 2023 from: https://www.economicsobservatory.com/why-germanys-covid-19-fatality-rate-comparatively-low

response of states across Germany was similar insofar as more far-reaching measures were coordinated nationwide but implemented subnationally (Hegele and Schnabel 2021). One exception was school closures, which were initially implemented only in Saarland (Kropp and Schnabel 2022). This measure, however, was also carried out by the other state governments in short order (Kropp and Schnabel 2022).

By mid-May, public acceptance of measures began to decline, particularly for those policies which placed restrictions on daily lives like limiting contacts, freedom of movement and leisure activities (Naumann et al., 2020). There were a number of potential reasons for this decline, including overall decline in trust in public institutions, differences in geography and party affiliation, as well as increased concern over the measures' secondary effects.

Indeed, as the pandemic moved forward, studies suggested a downward trend of public trust in the RKI's recommendations (Eitze et al., 2021) before the second wave. As Heinzel and Liese (2021) argue, the more citizens ascribe expertise to public institutions, the more likely they are to support COVID-19 measures. As such, this decline in public trust in RKI expertise may have affected public acceptance of COVID-19 measures.

Additionally, public skepticism over COVID-19 measures also differed between eastern and Western states and political persuasions. In particular, citizens in eastern Germany, where there are higher concentration of members of the far-right party Alternative für Deutschland (AfD), were more likely to be skeptical of restrictive COVID-19 measures, leading to loosened restrictions in the federal states east of Germany (Kropp and Schnabel 2022) and stricter ones in the west, where the percentage of parties skeptical of COVID-19 in the federal parliament was lower. This geographical difference was reflected later in the mortality rates during the second wave, with higher mortality rates in eastern Germany (Morwinsky et al., 2021). Kropp and Schnabel (2022) suggest this difference might have occurred due to upcoming 2021 elections. States like Bavaria and Mecklenburg-West Pomerania, which experienced both lower rates in skepticism over COVID-19 policies and higher infection rates, arguably implemented stricter measures to win over voters and to demonstrate their ability to cope with the pandemic.

Moreover, as early as the end of April 2020, federal politicians began to initiate discussions about the secondary effects of stringent COVID-19 policies. In particular, public figures began to openly discuss potential tradeoffs of strict COVID-19 policies, with a particular focus on their potential secondary economic and social impacts (Hodges et al., 2022). These discussions added a new political dimension to COVID-19 policy making and decreased the RKI's capability to unify federal states around its policy recommendations.

Overall, this change in the public support of pandemic measures and political discourse around them soon affected the content of the policies themselves. New, less restrictive policies implemented by the national and federal government, namely 'Lockdown light', allowed businesses to stay open from November 2020 to January 2021.[178] They soon proved to be inefficient in tackling the wider spread of COVID-19 however, and German governments reintroduced more stringent measures focused on pandemic control rather than on other concerns such as social and economic impacts of COVID-19 measures (Graichen, 2021). This pivot, also correspondingly renewed the importance of the RKI's expert assessments and recommendations. Although there was an increase in case numbers as early as the summer of 2021, especially in some regions of Germany such as the counties Gütersloh (North Rhine-Westphalia) and Dingolfing-Landau (Bavaria), Germany as a whole experienced a steep increase in case numbers in October 2020 (Schilling et al., 2021). While the first wave succeeded in preventing the spread of COVID-19 cases to nursing facilities, thus protecting part of the population at particular risk, the second wave saw a spread of COVID-19 to these facilities, leading not only to increased mortality rates among older citizens, but also to more deaths among younger citizens (Schilling et al., 2021). Policymakers responded to this steep increase in cases with a partial lockdown and social distancing measures, followed by increased testing capacities among facilities for the elderly and vulnerable (Schilling et al., 2021) to better understand the dynamics of the pandemic among these groups.

Even though there is no literature on the political and social discourse of the third wave, discussions at the beginning of the wave suggest that while some states might have been hesitant to ease restrictions, the RKI's recommendations were followed when case numbers rose[179]. While some local agencies strengthened pandemic measures, public acceptance of these measures declined partly due to restrictions of the second wave only being lifted shortly before[180]. A lack of coordination and different policy reactions of the highly autonomous policymaking state governments in the health policy sector,

[178] DW. (2020, December 2). Merkel: 'Lockdown light' to stretch into January. DW.com. Retrieved April 28, 2023 from: https://www.dw.com/en/merkel-germanys-lockdown-light-to-stretch-into-january/a-55803597

[179] DW Made for Minds (March 21, 2021). *Germany edges toward April lockdown extension*. Retrieved April 26, 2023 from: https://www.dw.com/en/covid-19-german-states-demand-april-lockdown-extension/a-56944887

[180] Ibid.

deepened confusion about the effectiveness of different COVID-19 policies among the population (Hodges et al., 2022) and, thus, may have decreased policy acceptance. Jäckle and Timmis (2023) argue that the high number of citizens who chose not to be vaccinated or were hesitant to do so may be partly due to low trust in government healthcare facilities. They also found that the vaccination rates varied by region, with low rates in states where the AfD got higher shares of votes for the 2021 election.

The role of the federal system and the RKI

According to Graichen (2021), the shift in state preferences toward economic and social concerns at the end of the first wave (beginning April 15, 2020, and ending December 1, 2020) prevented effective action against the second COVID-19 wave. Following the discussion described above, the RKI recommendations became part of the public discourse as the COVID-19 waves emerged, with other concerns raised by states losing prominence when infection rates began to decline. This dynamic will be explored in more depth in the following section.

COVID-19 policy response

To analyze the fragmentation of policies implemented by different state governments over time, this report relies on data from the CoronaNet Research Project (Cheng et al., 2020). This data set captures policies implemented in all 16 Bundesländer and records on average 18 policies per Bundesland per month, with some Bundesländer implementing around 5 to 10 policies per month at the low end, including Mecklenburg-Vorpommern, North Rhine-Westphalia, Rheinland-Pfalz and Saxony-Anhalt. Meanwhile, others implement 30 to 50 policies per month on average, e.g. Bavaria and Hamburg. As can be seen in Figure 13 to Figure 16, fragmentation among federal states was high among all policy types (business regulation, contact measures[181], lockdown and quarantine restrictions, mass gatherings and school restrictions). However, fragmentation differed by wave and type of measure. Fragmentation was distributed differently depending on whether Germany was within or after a COVID-19 wave and evolved first into greater fragmentation and then back to a common pattern of voluntary

[181] This is a combination of policies coded as curfews, social distancing, lockdown and quarantine policies as defined by the CoronaNet dataset (Cheng et al 2020) as they are all measures that try to reduce contact between people.

measures among states after the third COVID-19 wave.
Figure 13 through Figure 16 suggest that the most significant fragmentation among the policy types under consideration occurred after the first COVID-19 wave when states varied widely in their emphasis on issues other than COVID-19 when making policies due to varying public perception as to the necessity of particular COVID-19 measures among federal states. Figure 14 and Figure 15 show some "outlier states" with a higher average number of implemented measures in the contact restriction category and mandatory restrictions on mass gathering in both periods of the first wave. This matches to some extent a dynamic that Büthe et al. (2020) describe of pioneering states that introduced stricter measures and laggard states that implemented them later due to public pressure (Büthe et al., 2020).
After the first COVID-19 wave, some states decided to relax policies while others decided to maintain stricter measures or even introduce new ones. This difference is reflected geographically. After the first wave Saxony, as an eastern state, was an 'outlier' in terms of a higher average number of school, contact and business restrictions, than most states. All other outliers were located in western Germany with Hamburg, Bremen and Schleswig-Holstein being the most consistently represented as 'outliers' among the analyzed policy types. One reason may be different levels of skepticism in COVID-19 measure discussed in the preceding section.
During and after the second wave, this pattern continued, with large differences among states but little overall fragmentation as the average number of measures implemented decreased, suggesting that states were taking less stringent measures overall, but to varying degrees. This suggests a downward trend in adopting mandatory measures against COVID-19, with some "pioneer" states from the period before reluctant to relax restrictions. Some of the differences among states can be explained by different COVID-19 case numbers during the second wave with high case numbers in Saxony and Bavaria and low ones in Schleswig-Holstein (Kropp and Schnabel 2022). When comparing business restrictions (Figure 13), restrictions of mass gatherings (Figure 15) and school restrictions (Figure 16) Schleswig-Holstein implemented more mandatory policies than Bavaria (Figure 13 & Figure 15 & Figure 16) and Saxony (Figure 13& Figure 14 & Figure 16), although Shleswig-Holstein had lower case numbers compared to the latter two regions, suggesting fragmentation during the second wave was not based solely on difference in COVID-19 severity. Indeed, Bavaria implemented more policies than Schleswig-Holstein only for the mandatory contact restriction category (Figure 14). This suggests variation in how states made tradeoffs between public health concerns on the

one hand and social and economic ones on the other played a role in influencing whether they adopted mandatory measures in a given policy area or not. However, further research is needed to substantiate a causal story for this relationship. Moreover, a simple story with regards to eastern and western differences in approach to policy making is also not possible given that Bavaria, a western state, joined eastern Germany states in relaxing COVID-19 restrictions.

During and after the second wave of COVID-19 cases, the eastern states of Mecklenburg-Vorpommern, Saxony-Anhalt and Thuringia were among the 'outliers' implementing more mandatory business restrictions compared to most other states (see Figure 13) and mandatory contact restrictions in Mecklenburg-Vorpommern and Lower-Saxony during the second wave (see Figure 14). Kropp and Schnabel (2022) suggest that the comparatively large outbreak of COVID-19 cases in eastern states compared to some western states during the second wave can help explain this pattern. As this dynamic was accelerated by the late response to a high number of COVID-19 cases by the eastern federal states, they might have been more hesitant to ease them. Interestingly the number of mandatory measures restricting mass gatherings and social distancing implemented remained low in most of these states' in contrast to the overall strategy of each of these states, suggesting an impact of COVID-19 measure skepticism on policy response.

By the time of the third wave, fragmentation remained in only three categories studied: business restrictions, school and contact restrictions, indicating an overall downward trend in states' adoption of mandatory restrictions, although some still retained them.

Contrary to the overall pattern, school regulations, which was the most fragmented of the five policy categories during the first wave, had the most coherent policy response during the third wave.

The argument that a more coherent policy response is expected during national COVID-19 waves and that more fragmented patterns emerge as the infection curves flatten appears to have some basis, even though the expectation that a coherent policy response happened during the first wave appears to be wrong. But aside from school restrictions during the first wave, fragmentation was lower during subsequent COVID-19 waves and increased once the waves ended. Moreover, as the pandemic progressed, the initial dynamic of pioneer states leading other states appears to have faded, with most states dismantling mandatory measures and some still "lagging behind" in following the common course. This also reflects the overall pattern of public perception of the need to implement strict COVID-19 restrictions, with an overall downward trend as the pandemic progressed. Because state measures not only varied due to differences in case numbers but also became increasingly incoherent across categories as the pandemic progressed, subnational state interests appear to have played a larger role in which COVID-19 measures were implemented over time.

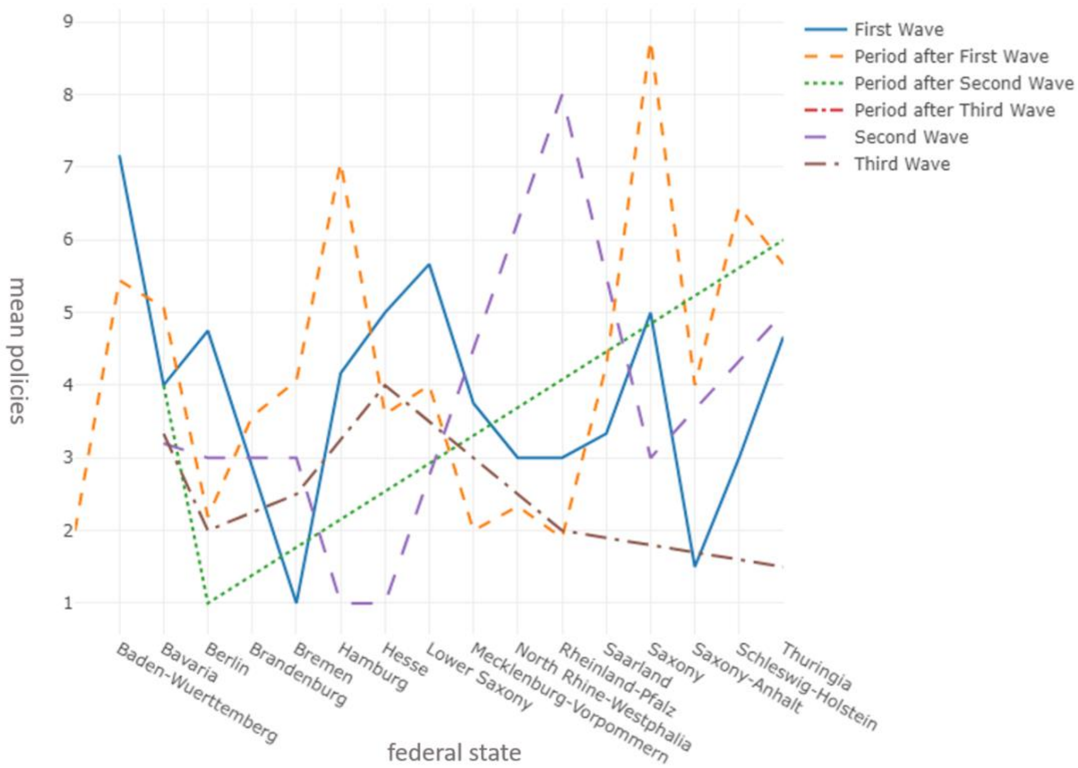

Figure 13: Mean Mandatory Business Restrictions per federal state by Wave.

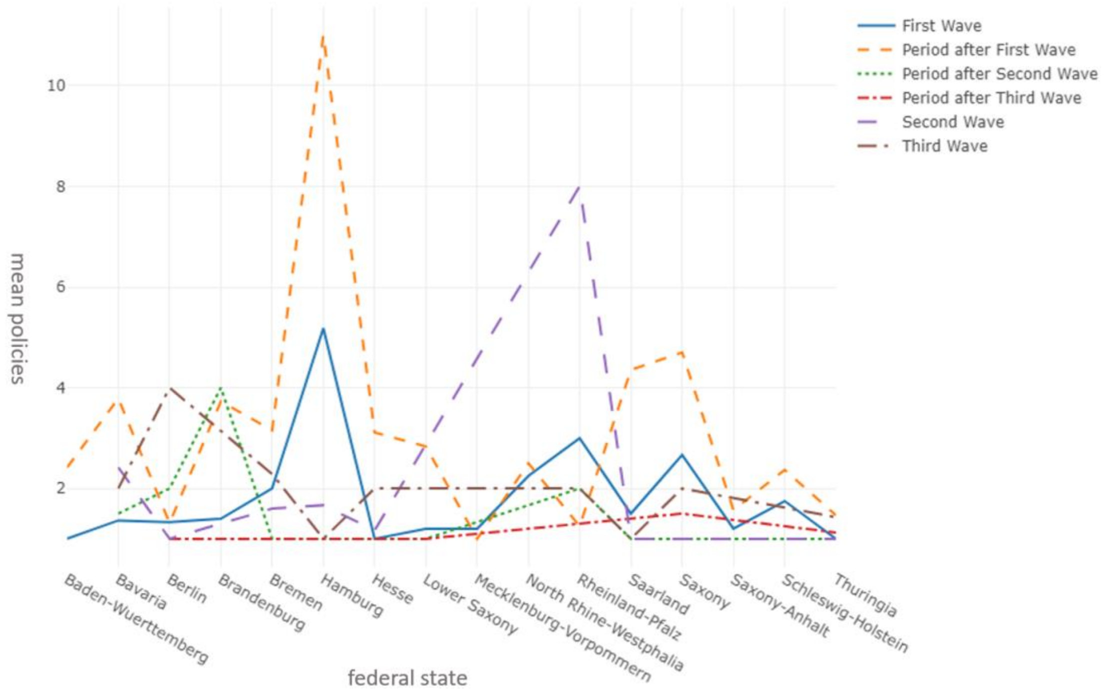

Figure 14: Mean any form of Mandatory Contact Restrictions per federal state by Wave.

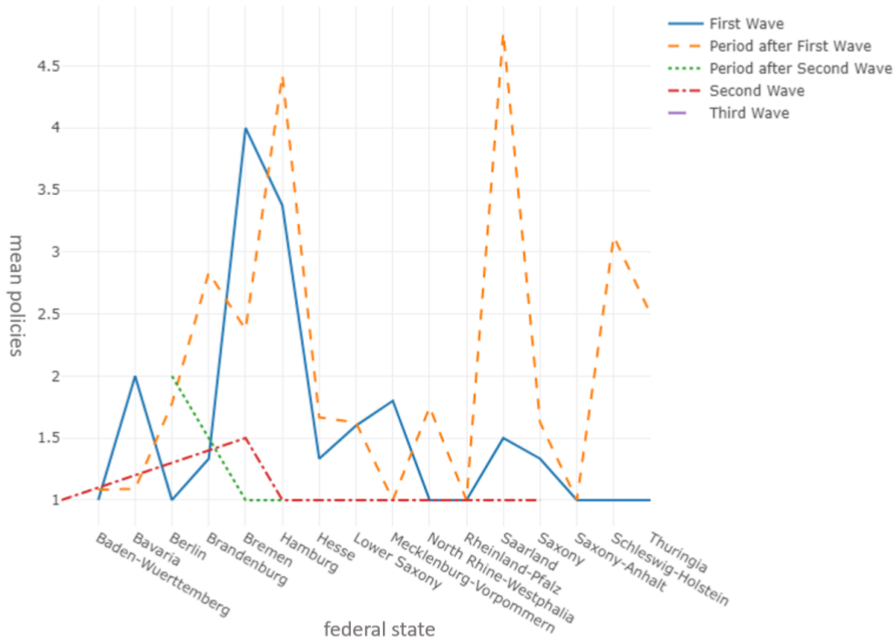

Figure 15. Mean Mandatory Mass Gathering Restrictions per federal state by Wave.

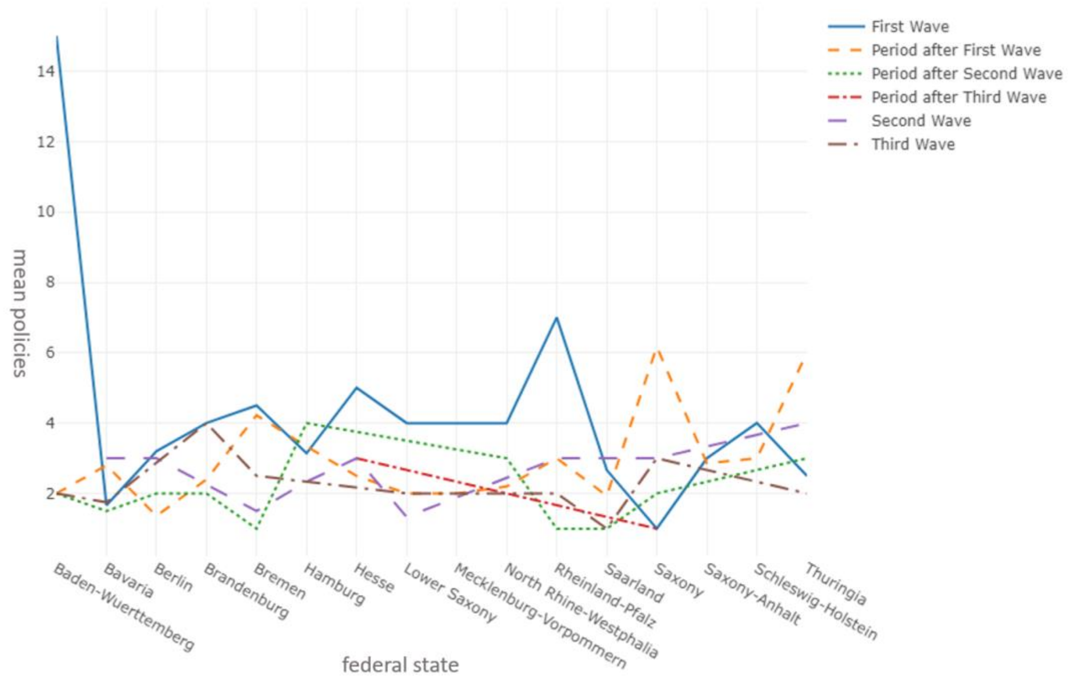

Figure 16: Mean Mandatory School Restrictions per federal state by Wave.

Conclusion

This country report has attempted to shed light on the differences in policy fragmentation across states in Germany during the three COVID-19 waves. While there was fragmentation across all states, the overall pattern shows that there tended to be some outliers that either exceeded or lagged behind the current national policy trajectory. Because the RKI led the discourse during periods of high infection waves, Germany was able to respond more unified and efficiently when case numbers were high, which may explain Germany's ability to keep overall death rates low. The increase in these numbers during the second wave has been attributed by scholars such as Graichen (2021) and Kropp and Schnabel (2022) to the fragmented and delayed policy response by state governments and policy response fragmentation due to social and economic interests held by federal states. In the future, a more coordinated policy approach could help Germany, with its federal structure, respond early to crises like the pandemic and overcome the delays in decision-making that come from having more political actors in a federal system. With regards to the COVID-19 pandemic, the existence of a trusted expert body like the RKI helped steer German federal states towards a more unified policy response than would likely have been possible otherwise.

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Greece: Country Report of COVID-19 Government Responses by Ali Kahraman

Introduction

In Greece, the detection of the first COVID-19 case on February 26, 2020, marked the beginning of the COVID-19 pandemic. Over the months that followed, the intensity and number of measures implemented by the Hellenic government varied depending on the number of COVID-19-related deaths, the number of COVID-19 cases and the progress in the distribution of vaccines among the Greek population.

For Greece, this country report will argue that there are two main preconditions which shaped the government's COVID-19 response: the country's demographics on the one hand and its financial situation on the other hand. On the one hand, the Greek population is comparatively old with a median age of about 46 years as of January 1, 2022[182]. Given that the elderly are among the most vulnerable groups to COVID-19, this increased vulnerability was particularly challenging for the country's government and had to be taken into account in governmental measures taken in response to the virus. On the other hand, Greece was already in a financially precarious situation with the ongoing debt crisis and a stagnating economy before the COVID-19 pandemic hit. Consequently, the COVID-19-induced closures of businesses and bans on tourism intensified the financial challenges of the country. To illustrate, according to the Bank of Greece, tourism revenues reached 18.2 billion euros in 2019, which corresponds to 26% of the country's total exports (Mariolis and Soklis, 2020). With one of its strongest sectors shut down for months to contain the spread of the virus, governments and decision-makers struggled to keep the country's financial system afloat while tackling the COVID-19 pandemic.

Furthermore, this report will evaluate whether a country's government type, particularly whether it is more centralized or federal, impacted policy formulation and implementation processes during the COVID-19 pandemic. In Europe, for example, the Federal Republic of Germany put in place more heterogeneous COVID-19 policies compared to other unitary systems like France or Italy. Greece is a unitary parliamentary republic in which the government decides on policies at the national level whereas decision-making initiatives of local administrative structures are limited. This, amongst others, allowed the

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[182] Eurostat (2023, February 22). Half of EU's population older than 44.4 years in 2022. Retrieved April 27, 2023 from: https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20230222-1

Hellenic government to respond in a timely manner during the first wave and contain the spread of the virus. However, as will be demonstrated in this country report, the second wave of the Covid-19 pandemic shed light on the limitations of such centralized state powers to cope with the more localized impacts of the crisis.

This report will first analyze the public and political discourse on the COVID-19 pandemic in Greece. Next, it will give an overview of the COVID-19 policy responses implemented by the Hellenic government based on trends in case and death rates as well as different policy categories using data from the CoronaNet Research Project (Cheng et al., 2020). Finally, it will provide insights into the broader effects of the Covid-19 measures taken on Greece and the Greek society.

Public and Political Discourse on COVID-19

From the first COVID-19 case detected in Greece by the end of February 2020 until October 2021, both the policies implemented and the political and public discourses changed. As will be argued in this chapter, mortality rates, the introduction of vaccines as well as the economic consequences of COVID-19 measures impacted not only discourses, but also which policies the Hellenic government implemented.

As in many other countries, the number of cases remained low in March 2020 due to the lack of testing facilities. As of March 10, 2020, Greece counted 89 cases and zero COVID-19-related deaths. Still, on March 13, 2020, the government acted early and closed public spaces such as cafes, restaurants and museums. Despite the high occupancy rate in intensive care units of Greek hospitals in the following days and months, the government's early action arguably prevented a worse scenario.

In Greece, when the first COVID-19 case was reported on February 26, 2020, public discourse paid very little attention to the virus and the threat it could pose to the Greek population. Instead, the media heavily reported on the country’s ongoing border conflicts with Turkey and refugee crisis. However a number of factors helped bring about a shift in the discourse. With the WHO’s declaration of a “global pandemic” by March 11, 2020, and the rapidly increasing number of cases along with on March 23, 2020, the Hellenic government’s introduction of Greece’s first nationwide lockdown, the political and public discourses in Greece began to acknowledge the outbreak of the virus as the beginning of an extraordinary health crisis. (Kousi et al., 2021).

This discursive shift shows that the Greek government quickly grasped the seriousness of the COVID-19 pandemic. Being aware of the country's health care system's shortcomings, the Greek government started to invest early in health resources and capacities (Moris and Schizas, 2020). Furthermore, in the public sphere, the Hellenic police strictly enforced COVID-19 policies which contributed to an increased societal awareness of the seriousness of the situation (Parlapani et al., 2020). Thereby, it can be argued that both the fear of health consequences and fines at the beginning of the pandemic facilitated the compliance with government policies.

However, given that many COVID-19 policies implemented in Greece during the first wave restricted the population's mobility and had adverse economic impacts, citizens' perceptions shifted as the virus continued to spread. Given that the pandemic was followed by a period of protracted austerity and socio-economic despair, feelings of unhappiness and uncertainty about the future among the Greek population soon returned. As a consequence, the press started to criticize the increasingly negative attitude of the public toward the measures and thereby in turn contributed to the societal polarization between people who obeyed the COVID-19-induced rules and those who disobeyed. (Chatzopoulou and Exadaktylos, 2021).

Following the strict measures implemented in the first wave of COVID-19, the government relaxed most of the restrictions in the summer of 2020 in the face of rising adverse economic consequences and public unrest. To illustrate, "the percentage of absolute and moderate trust in the Hellenic Government and health authorities decreased from approximately 92% and 94% in March/April, 2020 to 61% and 73% in July/August, 2020, respectively" (Kanellopoulou et al., 2021). Moreover, COVID-19-induced negative economic and social consequences successively replaced health concerns in the Greek discourse. In accordance, the Hellenic government lifted the first lockdown on May 4, 2020, in order to allow the economy to recover, especially the tourism sector. For example, compared to the summer of 2019, Greece's export services fell by 80%, in contrast to a drop of 18% across the EU (Markantonatou, 2021). By the end of 2020, economic discourses had entirely replaced health-centered discourses.

Throughout the COVID-19 pandemic, Greece also faced an ongoing refugee crisis. In both public and political spheres, a discourse emerged that portrayed irregular migrants as responsible for the transmission of COVID-19 (Reches, 2022). During the first wave of COVID-19, the temporary closure and mandatory quarantine of some refugee camps in May 2020 reflected this discourse on the level of policies. For example, the Hellenic government closed the refugee camp on the island of Lesbos and transferred asylum seekers and refugees to other places. Moreover, Greek administrations temporarily suspended their work related to refugees due to COVID-19. As a consequence, the increasing number of refugees in camps' reception centers worsened their living conditions and hygiene standards (Fouskas, 2020).

With the introduction of vaccines in late 2020, the Hellenic government took a strong stance by making vaccination compulsory for all of the Greek population and further by introducing age-based penalties. For example, people over the age of 60 who did neither make a COVID-19 vaccination appointment nor get vaccinated were fined 50 Euros. A study conducted in April and May 2020 found that nearly half of the Greek population was hesitant to get vaccinated (Kourlaba et al., 2021). According to the same study, the reasons for respondents' hesitation towards COVID-19 vaccines can be perceived risks, distrust and liberty. Consequently, the public discourse to some extent accused this vaccination policy as ageist and intrusive to one's individual freedom (The Lancet Healthy Longevity, 2022).

To summarize, during the first wave, the political and public discourses in Greece mainly portrayed COVID-19 as a health issue with regard to rising case and death rates. However, this view was gradually replaced by economic concerns of the adverse impacts of the imposed regulations on the Greek population and economy. While most of the public supported the implemented policy measures at the beginning of the pandemic, the long-term psychological and socio-economic consequences of these measures led to a more vocal and critical public discourse (Anastasiou and Duquenne, 2021). With the introduction of vaccines, a new discourse related to COVID-19 vaccination emerged, shaping political and public cleavages. Only in the summer of 2021, a post-COVID-19 discourse surfaced, focusing on the long-term consequences of the crisis.

Policy Responses to COVID-19

The following section will give an overview of Greece's COVID-19 policies documented in the CoronaNet Research Project's data (Cheng et al., 2020)[183].

In Greece, the country's government implemented a nationwide lockdown as early as March 23, 2020. This swift decision to shut down most of the Greek economy as well as

[183] As of 20 January 2023 (final data download)

the introduction of strict quarantine rules allowed Greece to keep its death rate low despite its low health spending and an ongoing economic crisis (Moris and Schizas, 2020).

With its unitary structure, the Hellenic government mostly enacted policies at the national level to respond to the COVID-19 pandemic. By 2021 however, with the introduction of vaccines and hence lower mortality rates, locally-implemented measures such as region-based border restrictions became more common.

In terms of different policy types, the high number of external border restrictions made in response to the pandemic stands out. Especially in the summer of 2020, the Hellenic government implemented more localized border restrictions to minimize the impact of the COVID-19 pandemic on the tourism sector. Fittingly, during that time, there were also many social distancing measures in place to keep touristic sites open under certain regulations. Therefore, it can be argued that the country's government tailored its policy response to limit the financial losses in one of its most important economic sectors.

Figure 17: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Greece.[184]

When looking at the number of COVID-19 cases per million between January 1, 2020, to October 1, 2021 in Figure 17, as of September 2020, cases began to increase with

[184] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer.

multiple peaks. Throughout the pandemic, the first months remained the ones with the fewest COVID-19 cases. There are two possible explanations for this observation: Firstly, in Greece, as in many other countries worldwide, the lack of nation-wide testing strategies during the first wave could have led to an underestimation of the actual number of reported cases (Delinasios et al., 2021). Followingly, the causes of death of people who died during these dates may not have been recorded as COVID-19-related in hospital and state archives. Secondly, the recorded COVID-19 related cases may be low due to the relaxation of the strict lockdown introduced during the first wave.

All in all, the Hellenic government responded early during the first wave with a strict nation-wide lockdown and quarantine policies. In the fear of adverse economic consequences for the tourism sector, the government opted for a more localized policy response in the following months.

Conclusion

Amidst an ongoing economic and refugee crisis, Greece was in a precarious situation at the beginning of the COVID-19 pandemic. However, thanks to the policies implemented already in March 2020, the country was able to keep COVID-19-related case and death numbers comparatively low. At the level of discourse, political and public concerns shifted from the health risks of the virus to its long-term adverse impact on the Greek economy. Fittingly, with the introduction of vaccines and the weakening of the economy, the Hellenic government implemented less strict policies after the first wave.

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Introduction: Politicization of COVID-19

This report will show that the Hungarian government and, more specifically, prime minister Viktor Orbán have politicized the pandemic both through public communication and policymaking, similar to what has already been observed in the context of the migration crisis (Bíró-Nagy, 2022). At the same time, policymakers have bowed to the necessities of the pandemic, resorting to measures that are essentially technocratic. Here, politicization is understood as "[…] the demand for, or the act of, transporting an issue or an institution into the sphere of politics – making previously unpolitical matters political" (Zürn, 2019).

The public and political discourse in Hungary sparked by the pandemic will be discussed in section 1.2, focusing on three overarching themes: Communicative bias, nativism and securitization. An account of COVID-19 political measures in Hungary will be provided in section 1.3, guided, on the one hand, by the general wave-like evolution of the pandemic and data from the CoronaNet Research Project (Cheng et al., 2020) and, on the other hand, factors that are specific to Hungary and its political system. Section 1.4 will conclude with particular reference to the impact and aftereffects of Hungary's pandemic response.

Public and Political Discourse in Hungary

From the start, the Hungarian discourse around the pandemic has been highly centralized, with the government and Orbán acting as focal points in terms of its management and public framing (Kriskó, 2021). As an amalgamation of different governmental elements, the "Operational Group" (OG)[185] represents the technocratic factor in this equation. Responsible for the control of COVID-19, the OG has been vital to official communication and the public discourse (Merkovity et al., 2021). Its provision of information on the pandemic was essentially a schematic reciting of data, holding press briefings rather than conferences (Kriskó, 2021). While already under fire by the

[185] Established by: Government of Hungary (2020, January 31). *Decision 1012/2020 on the Establishment of the Operative Tribe Responsible for Defense Against the Coronavirus Epidemic*. Retrieved April 28, 2023, from: https://njt.hu/jogszabaly/2020-1012-30-22.0#CI and consolidated through: Government of Hungary (2020, June 18). *Decree 286/2020 about the tasks of the Operative Tribe operating during epidemic preparedness.* Retrieved April 28, 2023, from: https://njt.hu/jogszabaly/2020-286-20-22.0#CI

government before the pandemic, journalists had a hard time critically reporting on the government's way of dealing with COVID-19 (Serdült, 2020). The so-called "coronavirus law" adopted on March 30, 2020, among other things, "[...] introduce[d] jail terms of up to five years for intentionally spreading misinformation that hinders the government response to the pandemic, leading to fears that it could be used to censor or self-censor criticism of the government response"[186].[187] Self-evidently, controlling the pandemic narrative was an obvious goal of the Hungarian national government.

Orbán, furthermore, was eager to fill in the role of a meaning-maker, particularly in the early stages of the pandemic. The first COVID-19 cases in Hungary were reported on March 4, 2020,[188] and Orbán wasted no time to frame the initial national discourse around the pandemic. Given that two Iranian students were the first to be identified as affected by the virus, Orbán was able to draw on his familiar anti-immigrant rhetoric, stating that "[...] foreigners brought in the disease, and [...] there is a logical connection between the two [migration and COVID-19; W.H.]"[189]. This rhetoric was relatively effective in influencing public perception among the Hungarian citizenry and, according to Voicu et al. (2021), "[...] a quasi-xenophobic discourse related to the pandemic outbreak was [possibly] responsible for capping the solidarity increase [among society; W.H.] in the initial stages of the crisis" (Voicu et al., 2021). Paired with Orbán's tendency to blame the EU for its response to the pandemic, nativism was a central part of his framing of the pandemic as it unfolded (Batory, 2022).

Another predominant frame was the "securitization" of the pandemic. Anna Molnár, Lili Takács and Éva Jakusné Harnos (2020) find that Orbán largely drew on fear, military, and war metaphors in his speeches and press conferences during the first wave of the

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[186] Walker, S., & Rankin, J. (2020, March 30). Hungary passes law that will let Orbán rule by decree. *The Guardian*. Retrieved April 27, 2023 from: https://www.theguardian.com/world/2020/mar/30/hungary-jail-for-coronavirus-misinformation-viktor-orban

[187] The European Centre for Press and Media Freedom (ECPMF) refers to these "[a]ttacks on [m]edia [f]reedom" as Hungary's second pandemic, see Polyák, G. (2020). *Hungary's two pandemics: COVID-19 and attacks on media freedom*. European Centre for Press and Media Freedom Legal Opinion. Retrieved April 28, 2023, from: https://www.ecpmf.eu/hungarys-two-pandemics-covid-19-and-attacks-on-media-freedom/

[188] Crisis24 (March 4, 2020). *Hungary: First cases of COVID-19 confirmed March 4*. Retrieved April 27, 2023 from: https://crisis24.garda.com/alerts/2020/03/hungary-first-cases-of-covid-19-confirmed-march-4

[189] news wires. (March 13, 2020). Hungary's Orban blames foreigners, migration for coronavirus spread. *France 24*. Retrieved April 27, 2023 from: https://www.france24.com/en/20200313-hungary-s-pm-orban-blames-foreign-students-migration-for-coronavirus-spread

pandemic, describing the virus as a serious threat to human life and thus an enemy to be combated and defended against through military means. This discursive maneuvering helped justify the declaration of a state of emergency and implement pertinent political measures. (Molnár et al., 2020). Moreover, the "enemy-making" character of such a militarized political discourse allowed the Hungarian government to target the blame toward the political opposition — notably the Left — and different social groups such as migrants (Grzebalska and Maďarová, 2021). To some extent, "[…] [Orbán] […] [hence] instrumentalized this conceptual mindset [the 'war against the virus'; W.H.] to undermine Hungarian democracy" (Wodak, 2021, p. 344).

Despite the Hungarian government's failure to contain the spread of the virus, the public largely approves of the country's pandemic responses and thus seems susceptible to the discursive agenda identified in this subchapter. According to the Pew Research Center[190], 71 percent of the Hungarian population argue that Hungary "[…] has done a [good] job dealing with the coronavirus outbreak", which is slightly above the 19-country median of 68 percent. Furthermore, only 33 percent would conclude that Hungary "[…] is failing to effectively handle the coronavirus outbreak in ways that show the weaknesses of the political system", which is far below the 19-country median of 52 percent. Overall, these findings suggest that the Hungarian government's nativist and securitized discourse surrounding COVID-19 paved the way for the country's technocratic policy response, which will be delineated in the following subchapter.

Policy Responses to COVID-19 in Hungary

Political and Institutional Preconditions

When examining Hungarian policy responses towards the COVID-19 pandemic, it is crucial to consider the country's political and institutional context.

Politically, scholars characterize the system in Hungary as "authoritarian populism". According to Zoltán Ádám and Iván Csaba (2022), "[such] regimes tend to create a distorted policy space, in which […] policy debates are restricted, […] the opposition can hardly generate effective programmatic competition with the government […] [and] public

[190] Silver, L., & Connaughton, A. (2022, August 11). Partisanship Colors Views of COVID-19 Handling Across Advanced Economies. *Pew Research Center's Global Attitudes Project*. Retrieved April 27, 2023 from: https://www.pewresearch.org/global/2022/08/11/partisanship-colors-views-of-covid-19-handling-across-advanced-economies/

policies are overpoliticized […] [in that] [e]xercising control over technocrats is one of the key political ambitions of authoritarian populists" (p. 279-280). When faced with the COVID-19 pandemic, Orbán's decision making has reflected many of these authoritarian and populist elements with the aim of using the global health crisis as a pretext for extending his power (Kovács, 2021). Most prominently, newspaper headlines during the first wave criticized the aforementioned "coronavirus law" for giving the government unlimited powers and limiting freedom of speech in Hungary[191]. While Hungary repealed the bill alongside the first state of emergency on June 18, 2020, subsequent "transitional" legislation[192] preluding the declaration of a state of "epidemiological preparedness"[193] "[...] had no intention of restoring Hungary's pre-coronavirus legal order, 'but rather create[d] a legal basis for the use of newer extraordinary and unlimited government powers'"[194]. In the wake of surging infection numbers, the government announced a second state of pandemic emergency on November 4, 2020, and one week later, was able to expand its decision-making powers again by law bringing back the quandary of rule by decree[195]. This time, however, the Parliament decided to limit the executive's ability to single-handedly manage the country's pandemic response by incorporating a 90-day sunset clause. Consequently, when the government issued a third state of emergency as from February 8, 2021, approved for another 90 days by parliament on February 22, 2021, it was not so much a reaction to pandemic-related developments but rather a formal move to preserve the government's extraordinary powers. What followed was a series of legislative extensions to the state of emergency and corresponding government decrees[196] which eventually came to an end by May 31, 2022, when all

[191] Freedom House (2020, April 6). *Hungary's Troubling Coronavirus Response*. Retrieved April 27, 2023 from: https://freedomhouse.org/article/hungarys-troubling-coronavirus-response

[192] Government of Hungary (2020, June 16). *Act No. LVIII of 2020 on Transitional Rules Related To the Termination of State of Danger and on Epidemiological Preparedness*. Retrieved April 288, 2023, from: https://wipolex.wipo.int/en/legislation/details/20079

[193] Government of Hungary (2020, June 18). *Government Decree 283/2020 on the introduction of epidemic preparedness.* Retrieved April 28, 2023, from: https://njt.hu/jogszabaly/2020-283-20-22.0#CI

[194] Novak, B. (2020, June 16). Hungary Moves to End Rule by Decree, but Orban's Powers May Stay. *The New York Times*. Retrieved April 27, 2023 from: https://www.nytimes.com/2020/06/16/world/europe/hungary-coronavirus-orban.html

[195] AFP. (2020, November 3). Hungary reintroduces state of emergency as virus surges. *Medical Xpress*. Retrieved April 27, 2023 from: https://medicalxpress.com/news/2020-11-hungary-reintroduces-state-emergency-virus.html

[196] For a concise overview, see: Hungarian Helsinki Committee (2022, January 1). *Overview of Hungary's emergency regimes introduced due to the COVID-19 pandemic*. Retrieved April 28, 2023, from: https://helsinki.hu/en/wp-content/uploads/sites/2/2022/01/HHC_Hungary_emergency_measures_overview_01012022.pdf

COVID-19-related policies were dropped by the Hungarian government due to a decline in the number of COVID-19 patients and a significantly improved epidemiological situation[197].[198] Overall, the politicized character of COVID-19 in Hungary was accompanied by a paralyzed legislative which authorized executive state of emergency declarations and measures with little to no resistance[199].

Institutionally, political and administrative structures in Hungary, including the public health care system and disaster management agencies, have been subject to an “intensified” process of centralization over the past decade. Among other things, “[t]he national government is now responsible […] for setting strategic direction, controlling financing and issuing and enforcing regulations [in the area of public health; W.H.]” (Hajnal and Kovács, 2020, p. 306). To illustrate, since the COVID-19 pandemic, disaster management agencies have evolved into a “unified service” formally headed by the Minister of the Interior who in turn ultimately responds to the Prime Minister (Hajnal and Kovács, 2020). Indeed, looking at the CoronaNet Research Project’s dataset[200], Hungarian policies in reaction to the pandemic were almost exclusively initiated at the national level.

Taking into consideration Hungary’s authoritarian populist political system and centralized institutional structures governing public health issues, the remainder of this chapter provides a timeline of COVID-19 policy responses made since the beginning of the pandemic up until October 2021.

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197 Horváth, A. (2022, May 31). Hungary ends COVID state of emergency June 1. *CMS Law-Now*. Retrieved April 27, 2023 from: https://cms-lawnow.com/en/ealerts/2022/05/hungary-ends-covid-state-of-emergency-june-1

198 However, rule by decree in Hungary will continue in the foreseeable future as the war in Ukraine has been utilized for upholding the state of emergency, see The Economist. (May 25, 2022). Hungary ends its covid emergency—And declares one over Ukraine. *The Economist*. Retrieved April 27, 2023 from: https://www.economist.com/europe/2022/05/25/hungary-ends-its-covid-emergency-and-declares-one-over-ukraine

199 For example, Act CIX of 2020 on the Containment of the Second Wave (see Government of Hungary (2020, November 10). *Act CIX of 2020 on the Containment of the Second Wave of the Coronavirus Pandemic*. Retrieved April 28, 2023, from: http://www.nemzetijogszabalytar.hu/translated/doc/J2020T0109P_20201111_FIN.pdf) was adopted with 180 votes in favor and 1 against.

200 On the basis of which I will delineate policy responses towards the pandemic in Hungary for the remainder of this chapter (Cheng et al., 2020)

COVID-19 Policies

Only one day after declaring a state of emergency in response to the rapid spread of COVID-19 in Europe, the Hungarian government introduced many serious pandemic-related measures on March 12, 2020, such as border controls towards neighboring countries adjoining Italy, the first European country struck by the pandemic, and entry bans for citizens of countries most affected by the virus at the time. Aiming to prevent the pandemic from spilling over into Hungary, this first set of policies isolated the country from Europe and other high-risk foreign countries. To further contain the spread of the virus, Hungarian authorities began to implement domestic measures on March 17, 2020, with the closure of non-essential stores and restaurants in the afternoon, the prohibition of most public and private events and a stay-at-home appeal to people above the age of seventy. While other European countries imposed a nationwide lockdown, the Hungarian government at first only prioritized the protection of its elderly population. However, since COVID-19 continued to spread across Hungary, the country inflicted more far-reaching "movement restrictions". From March 28, 2020, onwards, the government introduced a partial lockdown which allowed people to be out in public only for "good cause" such as grocery shopping or getting a manicure[201]. Given that case and death rates remained high, this policy was extended indefinitely. Notably, during the first pandemic wave, the Hungarian government implemented separate measures for areas with high infection rates. In May of 2020, regulations and restrictions, including the partial lockdown, were first relaxed for all of Hungary except Budapest and Pest County. However, this period remained an exception to the country's centralized system as all governmental policies announced later were binding for all of Hungary. On June 18, 2020, the lifting of the state of emergency and thus the majority of measures marked the end of the first wave of the pandemic in Hungary.

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[201] Government of Hungary (2020, March 28). *Government Decree 71/2020 about the curfew.* Retrieved April 28, 2023, from: https://njt.hu/jogszabaly/2020-71-20-22.0#CI

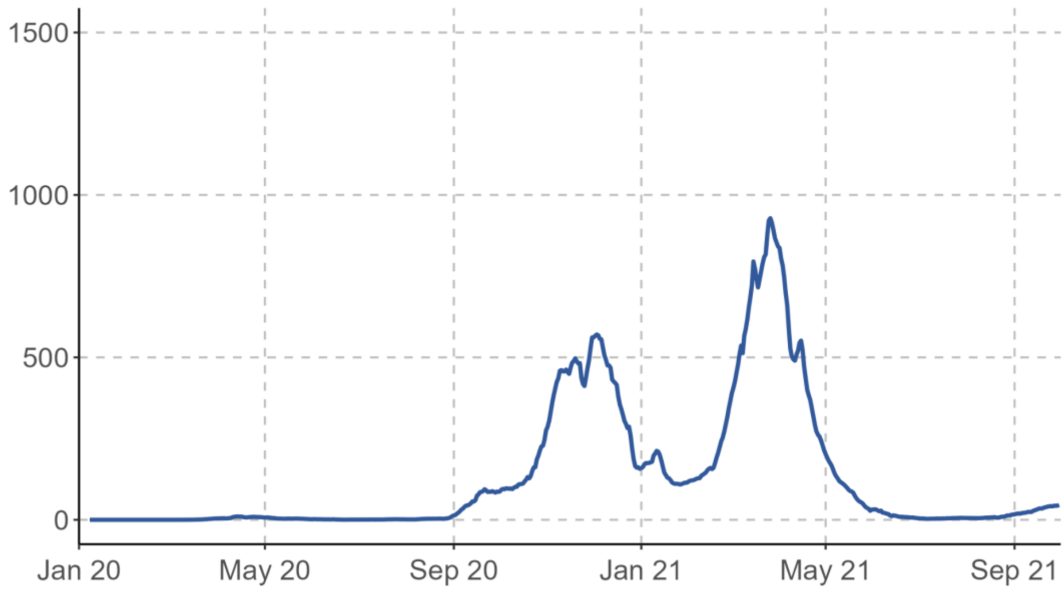

Figure 18: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Hungary.[202]

As for most countries, from September 2020 onwards, COVID-19 infections skyrocketed in Hungary (see Figure 18), resulting in the reintroduction of many restrictions and thus designating the beginning of a second pandemic wave. On November 4, 2020, the national government declared a second state of emergency and successively imposed even stronger protective measures such as a nightly curfew. With the Government Decree 484/2020 of November 11, 2020, the country's executive not only elongated curfew times, but also introduced a mandatory mask-wearing policy in selected public places, a ban on organizing or attending events, digital learning at universities and secondary schools, the partial closure of restaurants and accommodations as well as shortened business hours for shops. Overall, rule by decree, as outlined above, enabled a swift, comprehensive response to rising case numbers in late 2020.

Faced with another spike in cases starting in February 2021, the Hungarian government responded to the third wave of the pandemic by means of a "temporary" strengthening of policies as of March 8, 2021: all public educational institutions had to switch to e-learning, kindergartens were closed, non-essential stores shut down again, in-person services were restricted, and public administration employees were ordered to work from

[202] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

home. What is interesting about the Hungarian approach to the pandemic is that, as soon as COVID-19 vaccines became widely available, the loosening of measures was no longer bound to falling case counts but the number of administered vaccination doses. The first stage of relaxation came once 2.5 million people (out of a total population of approximately 9.7 million) had received the first dose of the vaccine. Whereas the jump from the first to the second stage required an additional 1.5 million first-dose vaccinations, subsequent easings were undertaken in steps of 0.5 million. This procedure lasted until the sixth stage of relaxation on July 3, 2021, when 5.5 million first doses had been administered. The rise in the number of vaccinations was paralleled by rapidly declining case counts. It is highly probable that in fact both figures were considered in the Hungarian government's decision to ease COVID-19 restrictions. Hungary's vaccination campaign, while at first remarkably successful[203], ran out of steam soon, plateauing at a share of the population that has completed the initial vaccination protocol of around 62 percent. By comparison, most EU countries have, by now, surpassed Hungary, with the EU average at approximately 72 percent. (Mathieu et al. 2021). This stagnancy may be attributed to the issue of vaccine hesitancy, which in Hungary, as according to Bíró-Nagy (2022), stems from people's belief in vaccine-related conspiracy theories and virus denial. In summary, Hungary's policy responses to COVID-19 were guided by a rather technocratic understanding of the necessary measures to contain the pandemic as the relaxation and strengthening of measures pretty much followed trends in vaccination and/or case rates.

Conclusion/Outlook

According to data provided by OurWorldInData.org[204], Hungary had witnessed a total of 823.384 cases and 30.199 deaths related to COVID-19 until October 1, 2021. Hence, the country's case fatality rate of 3.67 percent well exceeded the European average of 2.02 percent and was only surpassed by Bulgaria with 4.16 percent. This is in line with the finding from Michael Bayerlein and his colleagues (2021) that "[…] populist

[203] Spike, J. (2021, April 20). Hungary emerges as an EU vaccination star amid surging cases. *AP NEWS*. Retrieved April 27, 2023 from: https://apnews.com/article/europe-budapest-coronavirus-pandemic-china-coronavirus-vaccine-59d7eaf2dfbb47fea28c004b9da13727

[204] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer; (Mathieu et al., 2020)

governments — on average — have […] done a poorer job in protecting the population against the COVID-19 pandemic [compared to non-populist ones; W.H.]" (p. 424).

Not only populism, but also the politicization of COVID-19 likely impacted the course of the pandemic in Hungary. As shown in section 1.2. of this report, Orbán largely focused on public communication, especially during the first wave of the pandemic, which could be explored further in future research on Hungary's COVID-19 response. Furthermore, section 1.3 highlighted the continuous exploitation of emergency powers in the different pandemic waves, pointing towards the importance of analyzing the impact of institutional preconditions on COVID-19 policies.

While research on the secondary impacts of the Hungarian epidemic is still in its infancy, early studies point towards COVID-19's major social consequences: Éva Fodor and her colleagues (2020) find that the pandemic has led to increased gender inequality, especially "[…] among the highest educated". Moreover, in a comparative study of the Pew Research Institute on views of COVID-19 handling, 66 percent of Hungarians would agree that "[…] their country is now more divided than before the coronavirus outbreak" which is slightly higher than the 19-country median of 61 percent[205]. For Hungarian employees, another survey conducted in 2021 finds that the COVID-19 crisis has contributed to feelings of job insecurity and financial problems (Karacsony et al., 2022). This first research is an early indication that the pandemic and policies made in response to COVID-19 in Hungary have come along with major long-term disruptions to Hungarian society.

[205] Silver, L., & Connaughton, A. (2022, August 11). Partisanship Colors Views of COVID-19 Handling Across Advanced Economies. *Pew Research Center's Global Attitudes Project*. Retrieved April 27, 2023 from: https://www.pewresearch.org/global/2022/08/11/partisanship-colors-views-of-covid-19-handling-across-advanced-economies/

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Italy: Country Report of COVID-19 Government Responses by Johnathon Booth

Introduction

Italy's position throughout the COVID-19 pandemic was unique with respect to the fact that it became the worst-hit country globally, outside of China, in terms of the explosion of cases and the rapid rise of hospitalizations[206]. Unlike other nations, this left the Italian government and policymakers to deal with the creation and implementation of policies in order to fight the virus with very little time to prepare.

To illustrate this, the first outbreak of COVID-19 occurred in the small city of Codogno, in the region of Lombardy, on the 21st February 2020 (Villa et al, 2020). The complex political and social structure of the nation heavily affected the country's response to the development of the pandemic. The vague power-sharing between the national and many regional governments caused a lack of clarity in the policy decisions being made and a delay in more extreme measures being introduced initially. For example, on the 31st January direct flights from China were banned, but connecting ones were not, and on the 23rd February, the national government introduced a regional lockdown (Villa et al, 2020). This uncoordinated response led to the virus continuing to spread regardless, resulting in the first wave of the pandemic (see Figure 19).

This report will detail the political discourse surrounding the pandemic in Italy as well as the policy response from various government institutions, from the outbreak of the pandemic until the fourth wave (October 2021), to shed light on the decision-making processes within the country. The implications this had on different aspects of wider society, including party politics, media coverage, and the public reaction, will also be discussed.

Political Dynamics during the Pandemic

Italian Administrative System

As previously mentioned, Italy has a particular public administration system that relates back to its history. Before its unification in 1848, the peninsula was divided into smaller city-states that were more or less autonomous, something which is now reflected in the legislation of the current Italian state. In its 2001 constitutional reform, the 20 regions of the Italian state were given legislative power over areas such as the economy,

[206] Regan, Helen. (2020, March 8). Italy announces lockdown as global coronavirus cases surpass 105,000. *CNN*. Retrieved April 28, 2023, from: https://edition.cnn.com/2020/03/08/asia/coronavirus-covid-19-update-intl-hnk/index.html

healthcare, and local law enforcement, with the central government retaining the right to intervene when deemed necessary (Malandrino et al, 2020). This system of governance often led to conflicts that influenced both the speed of the government's reaction to the virus and therefore also its spread. This report will split the analysis into different categories for phenomena: the national health service, conflicts in decision-making, party politics, policy response, public reaction and perception and media coverage. It will explore how these factors influenced the first four distinct waves of the pandemic, from a total of five: First (March – May 2020), Second (October 2020 – January 2021), Third (February – May 2021), Fourth (June – October 2021). At the time of writing, most of the available literature is focused on the initial spread of the virus, however, primary data will be used to provide detail of the different phenomena throughout the succeeding phases of the pandemic.

National Health Service

Even before the COVID-19 pandemic, Italy was already unprepared to tackle any major health crises due to a lack of resources in its national health service (NHS). The national government's underfunding of the NHS was a particular problem, as for over thirty years there have been several cuts to its services. This began in the 1990s, to cut costs and reduce national debt, and was further compounded by the events of the global financial crisis (2008) and the euro crisis (2009) (Falkenbach and Caiani, 2021). In fact, the total figure is estimated to be worth around 37 billion euros (Armocidaet al., 2020), with total public healthcare spending increasing by less than 26.8%, one of the lowest values in Europe, only behind Greece (Prante, Bramucci & Truger, 2020).

This drastic financial situation led to two developments that rendered the Italian health system woefully underprepared at the beginning of the pandemic. The first was the reduced number of acute care hospitals, and the second was the reduced number of acute care beds, which were essential to combat the pandemic. To illustrate this development, around 1990 there were 7 beds per 1000 inhabitants, which then dropped to 2.6 by 2017 (Falkenbach and Caiani, 2021).

These factors placed hospitals and staff under extreme pressure due to a lack of necessary equipment, especially during the first wave that spread across Lombardy and the north of the country in the first few months. For example, Lombardy, specifically, had a maximum of 724 intensive care beds, whilst patients in need of intensive support already exceeded 1006 in March 2020, leading the Civil Protection, the department responsible for managing national emergency events, to prioritize acquiring more equipment (Armocida, 2020). Italy had less time to organize and acquire the necessary equipment compared to other nations due to the fact it was, as previously mentioned, one of first countries outside of China where the virus resulted in an outbreak. The dire need for specialized equipment was highlighted when Italian Prime Minister (PM) Giuseppe Conte appealed to the European Union for help on the 26th February 2020, which went unanswered by other member states, leaving Italy not only without much-needed equipment but also without a sense of European solidarity[207].

Conflict in Decision-Making Among Different Government Levels

The state's ability to effectively respond to the pandemic was further compounded by conflict in power sharing and decision-making by regional and national governments. In the initial stages of the outbreak, just before the first wave, the central government played a more active role to manage the spread. They introduced decree-law no.6 on 23rd February 2020, allowing unspecified "competent authorities" to take vaguely defined further measures to stop the spread of the virus (Malandrino et al., 2020). The wording of the decree did not clearly separate the competencies of different institutions, such as the regional and national authorities, causing a clash in various measures. This was especially true for restrictions placed upon citizens' freedoms, which were initially more limited by regional governments than the national one. On 4th March 2020, for example, the Regional Administrative Court of Ancona, a small city in the Marche region, suspended an ordinance, made by the president of the region, to close schools, universities, and public events for at least seven days (Malandrino et al, 2020). Despite there being no cases present in the Marche region at the time, the strategy adopted by the regional president could have been, potentially, an effective measure to help slow the spread of the virus, especially if adopted by other regions at the time too. Previous research, utilizing the CoronaNet dataset, among others, has demonstrated that the closure of educational institutions is the second most effective measure to combat the spread of the virus, falling only behind social distancing and restrictions of mass gatherings (Haug et al., 2020).

[207] Boffey, D. (2020, July 15). Revealed: Italy's call for urgent help was ignored as coronavirus swept through Europe. *The Guardian*. Retrieved April 27, 2023, from: https://www.theguardian.com/world/2020/jul/15/revealed-the-inside-story-of-europes-divided-coronavirus-response

Party Politics

The mixed messages coming from the regional and national authorities caused substantial confusion, which also extended to Italy's lockdown. For instance, while the national government introduced the first lockdown on 22nd February 2020 in various cities in both the Veneto and Lombardy regions, they then expanded this on the 8th March to include all 14 northern regions, and they further expanded it two days later to become nationwide.

The delayed national lockdown, along with a lack of clear rules or strict enforcement, rendered it largely ineffective and is better characterized as an attempt to recover missed opportunities to stop the spread of the infection earlier (Ren, 2020). Again, the overlapping nature of the Italian political system influenced the delayed response of the country. Many northern regions were led by populist right-wing parties, such as Lega and Fratelli d'Italia, whilst the national government, under PM Conte, was composed of a left-wing coalition. This led to inter-party competition, with parties blaming each other for the unfolding events, rather than cooperating to implement more effective measures (Ren, 2020).

In fact, support for the populist right-wing parties appeared to increase over the course of the pandemic. Lega leader Matteo Salvini and Fratelli d'Italia leader Giorgia Meloni exploited the pandemic to further their own political agendas. This included an attack on the European Union, especially after they failed to aid Italy at the beginning of the pandemic. Moreover, the attack was extended to the national government, and they specifically criticized their slow response to the initial outbreak and failure to implement more effective measures (Falkenbach and Caiani, 2021). It is important to note the contradictory nature of these populist leaders, however, as many of them posted to their social media pages to ignore measures introduced by the government at the start of the pandemic (Falkenbach and Caiani, 2021). Despite this, overall support for populist right-wing parties seemed to increase during the pandemic, with parties such as Meloni's Fratelli d'Italia seeing a rise in support from 7 percent to 14 percent, the highest in the party's history, possibly due to the public's desire for strong leadership in times of crisis (Falkenbach and Caiani, 2021).

This contradictory nature was further compounded by the fact that, when these party leaders realized the gravity of the situation, they quickly changed their stance. For instance, Salvini suggested banning all travel from China in the early stages of the pandemic which, despite appearing to be another effective strategy (Malandrino et al., 2020), Salvini's long-time stance as anti-immigration meant his suggestions were ignored (Ren, 2020). In order to resolve these issues, the national government adopted Decree-law no. 19/2020, allowing regions to adopt containment strategies if they met certain criteria, such as “operating in the absence of national measures” (Malandrino et al., 2020).

Adding to this complex situation was the fact that many public health officials were criticized as being right-wing party supporters for suggesting to adopt stricter travel measures. PM Conte, meanwhile, tried to shift blame to regional leaders for the failure to contain the virus, rather than his government’s measures, stating that they did not respond to the situation adequately (Ren, 2020).

To make matters worse, many measures were not strictly enforced by local law enforcement, and at times regional government officials went to the streets to send home individuals who were not respecting the lockdown and other measures (Ren, 2020). Party self-interest as well as political tensions among parties complicated the rollout of effective nationwide measures and made it unclear where responsibilities lay, something which could have been avoided in order to better control the spread of the virus in the initial period.

Policy Responses to the Pandemic

In this section, rather than focusing on the underlying forces that shaped Italy’s policy response, we will examine the substance of the policies themselves. The Italian government introduced what can be seen as the first national policy to respond to the pandemic on the 31st January 2020, declaring a state of emergency and putting in place a ban on all direct flights from China. Over the course of the pandemic, many more policies were introduced to combat the virus. One important distinction to make is the approach taken by Italian authorities for the first wave (March – May 2020) in comparison to all the subsequent waves (October 2020 – February 2022).

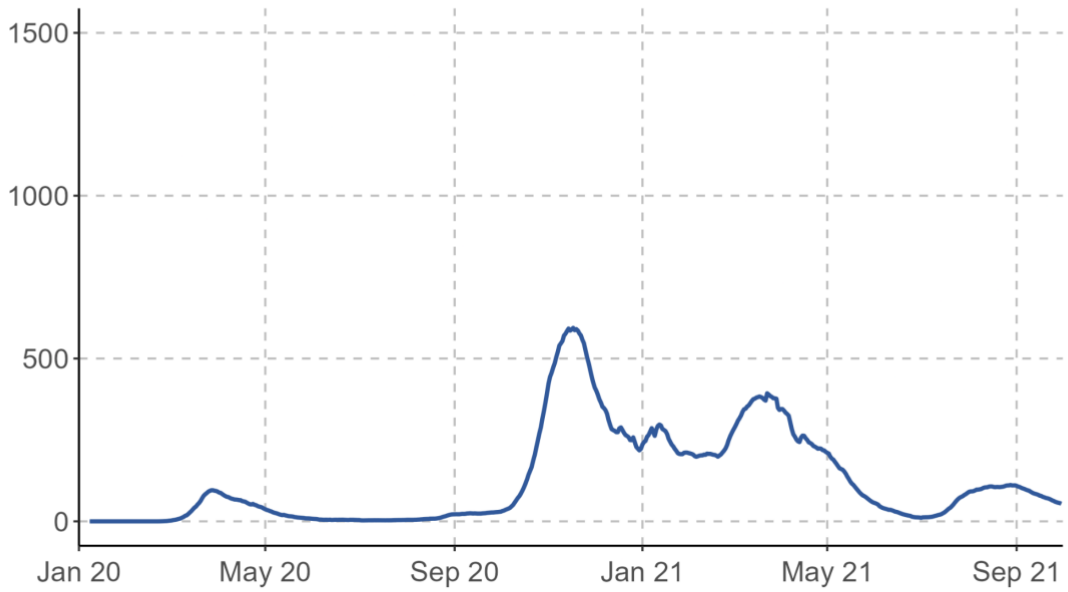

Figure 19: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Italy.[208]

During the first wave, the reaction time from Italian authorities was quite slow, allowing the rapid spread of the virus, although measures were eventually introduced (Capano, 2020). As previously mentioned, this can be attributed in part to the conflict in decision-making between the national and regional levels of government, especially the high levels of involvement from the national government, as well as being the first heavily hit country outside of China.

The first wave was additionally marked by a number of individual policies implemented by the national government in response to the development of the pandemic, such as the aforementioned flight ban. Other measures included the first lockdown of 10 municipalities in the Lombardy and Veneto regions (23rd February), the closure of all schools and universities (4th March), and later a national lockdown (10th March – 3rd May) (Capano, 2020). During this period, national institutions, such as the Ministry of Health and the Civil Protection Department, applied a flurry of measures, with the majority focusing on internal movement restrictions, social distancing, and the use of protective face wear. This was accompanied by policies from regional governments, which were focused on managing the mitigation effort (Capano, 2020).

[208] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

The Italian government subsequently took a different approach to policy formulation and implementation, when on the 4th November 2020 a new risk-level system was announced and then came into effect two days later. This system assigned each of the 21 Italian regions a different color: white, yellow, orange, and red, based on the daily cases of the virus and the number of hospitalizations recorded (Pelagatti and Maranzano, 2021). A region declared white would have no restrictions placed upon it. Instead, the other three colors had an increasing number of restrictions. For example, regions declared as yellow had to close shopping centers on weekends, orange zones would have to ban travel across regional borders, and red would include all previous measures along with additional ones such as a full suspension of commercial activities. If the infection rate of the virus changed, regions could change color, either increasing or decreasing along the scale (Pelagatti and Maranzano, 2021). An assessment of this system revealed that the infection rate of a region did decrease until it reached a consistent value, with red zones being the most effective with a -2.3% infection rate per week. Moreover, the number of new cases for red zones halved every two weeks, and hospitalizations in one month. There was a similar trend for orange zones, however with a longer time span of around one to two months. Yellow zones, on the other hand, led to a plateau of cases rather than an outright decrease, suggesting its effectiveness was limited (Pelagatti and Maranzano, 2021).

Data from the CoronaNet Project can help to clarify these characteristics. By comparing the number of national and provincial policies implemented against COVID-19, we can see that there are a total of 6252 national policies in comparison to 1918 provincial ones, from March 2020 until present (March 2023). These numbers showcase the characteristics of the Italian political system during the pandemic. Although national policies exceed provincial ones by a large amount, signaling central governments' desire to create a cohesive reaction, there remains a high number of provincial measures, highlighting their continued active approach throughout the pandemic.

Similar patterns can be observed when selecting single policies previously mentioned, such as "lockdown" and "closure and regulation of schools". Between March 2020 to March 2021 there were 121 national lockdown measures and 71 provincial ones. Additionally, between February 2020 and September 2021 there were 63 national regulations of schools, compared to 40 provincial ones. All of this goes to highlight the continued struggle between the different political institutions of the country throughout the pandemic.

Public Reactions to Policy Decisions

Now that the policy response itself has been established, we will shift focus to investigate the reaction to the national government's handling of the pandemic by the wider Italian society. This section will be divided into the media coverage of the government's response, which was uncharacteristic, and the Italian public's attitudes and behaviors towards the policies that were implemented.

Media Coverage

Despite the widespread divisions between the Italian political parties and regional and national governments, media coverage on the issue appeared to be much more cohesive and supportive of government policies, at least initially. This contrasted with the traditional reporting behavior of Italian news outlets. The Italian context is quite unique, in that the media has partisan features, representing the same fragmentation as political parties (Mazzoni et al., 2022). Media coverage is especially important in the political context of a pandemic as it can influence not only public perceptions of the situation, and therefore individuals' behaviors, but also the policies implemented themselves (Mazzoni et al., 2022). During the first wave, when the pandemic was still a novelty, there was a period of cooperation between government institutions and the press, resulting in the press reporting on the pandemic with less underlying bias (Mazzoni et al., 2022). This, however, was an exception. Around October 2020, at the start of the second wave, there was a return to the political confrontation and strategic communication that better characterizes the Italian media.

Public Perceptions

Interestingly, despite the conflict seen both between the political parties and in the media, the Italian public appeared on average to support government measures against COVID-19. Roughly 87.2% of respondents to a survey declared that they believed the lockdown measures taken by the government were effective, and 90.2% applied enforced rules more frequently than citizens in countries such as the Netherlands and Germany (Meier et al., 2020). This high number reflects the Italian public's beliefs in the protective measures taken by the government, as well as an individual awareness of the crises as they were unfolding. The expression "andra' tutto bene" (everything will be fine) became a symbol of national solidarity across the country, being seen written on signs, in shops, and on social media, in addition to musical "flash mobs" on balconies, that gained a lot of media attention (Falkenbach and Caiani, 2021). The expression acted as a symbol of solidarity, with many local communities coming together to aid each other across the nation, such as drugstores bringing groceries to people's homes when they could not leave, in a small town near Turin[209]. It appears that the expression received less coverage through subsequent waves, and remains unclear if it still had the same impact as at the beginning of the pandemic. There was, however, a small number of the population for whom levels of trust decreased towards the national government. This was especially true for supporters of the aforementioned populist right-wing parties, and their refusal to follow certain measures forced the government to introduce stricter punishments for disobedience against COVID-19 policies, such as higher fines (Falkenbach and Caiani, 2021).

Conclusion

To conclude, Italy was placed in a unique and extremely uncertain situation at the beginning of the pandemic, being the first country outside of China to experience the rapid spread of COVID-19. The total number of cases in Italy as of March 2023 surpasses 25 million, having the second highest number of deaths, around 188,000, in Western Europe, behind the United Kingdom[210].

Due to the divided political system, a trait present thanks to Italy's recent unification, there has been a clash of power-sharing between the two levels of government, national and provincial. This influenced Italy's delayed reaction at the beginning of the pandemic, especially due to the initial vagueness of the law, leading to confusion and overlapping measures. Later ordinances from the national government better defined the capabilities of provincial measures, although the problem wasn't and still isn't resolved, and will likely continue even after the pandemic.

Despite this delayed reaction, there was an eventual implementation of various policies to combat the spread of COVID-19 throughout the five distinct waves. Both national and regional authorities introduced increasingly extreme measures during the first wave of the pandemic. The country then shifted to a color-coded risk-level system for each region, for the remainder of the pandemic, somewhat streamlining the process. Unsurprisingly, the more extreme measures introduced more effectively slowed the

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[209] Otte, J. (2020, March 12). "Everything will be all right": Message of hope spreads in Italy. *The Guardian*. Retrieved April 27, 2023 from: https://www.theguardian.com/world/2020/mar/12/everything-will-be-alright-italians-share-slogan-of-hope-in-face-of-coronavirus-crisis

[210] WHO. (2023, March 20). *Italy: WHO Coronavirus Disease (COVID-19) Dashboard With Vaccination Data*. Retrieved March 20, 2023 from: https://covid19.who.int

speed at which the virus spread, as well as hospitalizations. Nonetheless, the divide between regional and national institutions continued.

The institutional and party-political divide can be seen to also affect the wider Italian society, with essential institutions such as the media following the partisan lines set by political parties. Interestingly, however, this did not seem to influence the general public's attitudes and behaviors towards the measures implemented, as it appears that the majority of Italians viewed national measures favorably in terms of their effectiveness, and most willingly cooperated with them, despite the confusion between national and provincial legislation.

Overall, the delayed and ineffective initial response to the pandemic was undoubtedly influenced by the unique political situation of the country. As the initial outbreak grew, however, and the situation grew worse, there was better cohesion between the national and provincial governments, at least for a period, and the Italian general public's willingness to cooperate with the containment measures introduced undeniably prevented the situation from escalating even further than it already had.

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Latvia: Country Report of COVID-19 Government Responses by Muneeba Rizvi

Introduction to Latvia and its public discourse

This is a brief overview of Latvia's experience during COVID-19 that includes an analysis of the national level policy responses from December 31, 2019, to October 1, 2021, period of COVID-19.

This report shows that while the Latvian government enjoyed early success in keeping COVID-19 numbers low, this also led to complacency which led to higher case numbers as time went on. Moreover, as case numbers rose in Latvia, structural disadvantages and advantages to Latvian governance played an increasingly large role in shaping its pandemic response. With regards to disadvantages, the country is one of the poorest in the European Union (only Bulgaria and Croatia were poorer in 2020, as Romania rose to the same level as Latvia) and has significantly underinvested in health care in the years preceding the pandemic. The ethnic divide in Latvia between Latvians and Russian speakers is moreover a source of political polarization rather than social polarization that was worsened by the economic and social strains of the COVID-19 pandemic.[211] With regards to advantages, it bears noting that Latvia is also a Baltic Sea state with growing economic, cultural, and political ties with the wealthy Nordic countries, and cooperation between these countries proved beneficial to Latvia's pandemic response. Ultimately, as I explore in greater detail in the below, these factors played an important role in Latvia's overall average performance in containing the spread of the virus when compared to other countries in the EU.

[211] Bertelsmann Stiftung. (2022). BTI 2022 Latvia Country Report. Retrieved April 27, 2023 from: https://bti-project.org/en/reports/country-report?isocode=LVA&cHash=4592aa1fab631cfa64b49dbe2e8c4fa8

COVID-19 response in Latvia

Figure 20: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Latvia.[212]

Policy responses during the first wave

Latvia's response to what we now identify as the first wave of COVID-19 was swift and proactive, starting with an advisory against travel to China's Hubei province in late January 2020. Latvia's first Covid-19 case was reported on March 2, 2020. On March 12, 2020, the Latvian government proceeded to declare a state of emergency soon after the WHO declared COVID-19 a worldwide pandemic.[213] This quick response to stop the spread of COVID-19 drew widespread international praise for the government's effective virus management.[214] Indeed, Latvia had one of the lowest rates of COVID-19 infection in Europe during the spring and summer of 2020 (see Figure 20).

Latvia's success during the first wave can be linked to the successful rollout of its policy responses, including those to raise public awareness about the virus, restrict movement and increase testing capacity of the virus. Indeed, the government made efforts to raise

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[212] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

[213] BNN. Latvia declares state of emergency over COVID-19 until Easter. (2020, March 13). *Baltic News Network.* Retrieved 28 April 2023 from: https://bnn-news.com/latvia-declares-state-of-emergency-over-covid-19-until-easter-211339

[214] Palkova, Aleksandra. (2020, October 30). Latvia during covid: How success bred complacency. *European Council on Foreign Relations.* Retrieved April 28, 2023 from: https://ecfr.eu/article/latvia-during-covid-how-success-bred-complacency/

more public awareness about COVID-19 by publishing guidelines related to mask-wearing, traveling and alerting citizens to take precautions against being infected. Advertisements and campaigns for the right information to be relayed to the citizens were in full swing and innovative digital solutions to reach out to the citizens were adopted as well. [215]

The Latvian government's measures to restrict movement and activities during the first wave of the pandemic were effective, resulting in a low number of reported infections, and were well received by the public. The Latvian government also placed importance on education ensuring minimal disruption for students all over Latvia. This was evident from the study resources made available online, strategies devised to make childcare easy for parents with children of different age groups, and security measures added in place to ensure students make the best of their studies while keeping safe. Directives issued by the government surrounding lockdowns, online learning, social distancing, hygiene measures gave institutions and educators a sense of direction to take action during the pandemic. The government made efforts to ensure quality education was provided through the online medium of learning.

In terms of health testing, Latvia's Emergency Medical Service (EMS) provided testing while also establishing public or private mobile testing stations. As demand for testing grew, EMS teams only provided testing in the most severe cases, while milder cases were advised to use mobile testing sites. The COVID-19 hotline staff also determined whether the caller qualified for state-funded COVID-19 testing. Testing in Latvia could be requested as a self-referral or by general practitioners throughout the pandemic. The results of the tests were quickly relayed to the Latvian Center for Disease Prevention and Control (CDPC), which oversaw epidemiological monitoring, data analysis, and information publication.[216]

Overall, these policy measures not only led to lower infection rates, but also an increase in public trust during the first wave of the pandemic. However, as we will see in what follows, Latvia had a markedly different experience during its second wave[217].

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[215] Ibid.

[216] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

[217] Ibid.

Policy responses during the second wave

By June 10, 2020, the Latvian government ended the state of emergency and quickly began relaxing the restrictions first imposed to counter COVID-19 as case numbers began to stabilize for the better with less than 100 cases per day (see Figure 1.1). It was widely speculated by the media that in addition to the lack of information available on the changing nature of the virus, the early ease of restrictions led to the spike in COVID cases in what would become a second wave of infections.[218]

The worrying numbers prompted Latvia to quickly impose a lockdown in response to the rising infections and indeed, it became the first country in Europe to do so. Moreover, despite divisions among the Latvian Cabinet of Ministers around the decision, on November 6, 2020, the government ultimately announced that a second state of emergency would commence on November 9, 2020.[219] This was followed by tighter restrictions on gatherings, events, sports activities, catering and education. The second lockdown put restrictions on all workplaces except essential workers which was not the case in the first lockdown. However in the second lockdown, schools were closed only at some levels, as opposed to all levels.

Meanwhile, as before, the Latvian government demonstrated a strong commitment to COVID-19 testing. During this time, Latvia seriously upheld its motto “Test, track and isolate”[220] , which was clear from the aggressive state-funded testing policies, and as a result of this approach, Latvia had one of the highest per capita rates of COVID-19 testing. All Latvian citizens and residence permit holders, including those without symptoms, could be tested for Covid-19 for free until October 23, 2020. However, testing capacities were quickly overwhelmed in October, with wait times of up to six days.[221] A substantial amount of funding was obtained from the state budget project's Financing for Emergencies program based on the number of tests performed and actual costs during

[218] Palkova, Aleksandra. (2020, October 30). Latvia during covid: How success bred complacency. *European Council on Foreign Relations.* Retrieved April 28, 2023 from: https://ecfr.eu/article/latvia-during-covid-how-success-bred-complacency/

[219] Klūga, M. (2020, November 4). Ministers have no consensus on the need for an emergency. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://www.lsm.lv/raksts/zinas/latvija/ministriem-nav-vienpratibas-par-arkartejas-situacijas-nepieciesamibu.a380542/

[220] Palkova, A. (2020, October 30). Latvia during covid: How success bred complacency. *ECFR*. Retrieved April 27, 2023 from: https://ecfr.eu/article/latvia-during-covid-how-success-bred-complacency//

[221] Kinca, A. (2020, October 6). COVID-19 test queues grow in Latvia. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://eng.lsm.lv/article/society/health/covid-19-test-queues-grow-in-latvia.a376896/

2020.[222] Given the constantly evolving state of the COVID-19 outbreak and resource constraints, by the end of October, the Health Ministry and Latvia's Association of General Practitioners jointly decided that state-paid testing for Covid-19 would be carried out only for hospital patients or those in need of medical treatment to reduce testing wait times for those with the most need.[223]

Unlike during the early months of the pandemic however, the Latvian government was unable to prevent a significant rise in COVID-19 cases during this second round. While there were some differences in the substance of the policy response in the first and second waves, perhaps the most significant difference was the timing of the response. Though during the first wave, the government took proactive action before a significant rise in cases was detected, during the second wave, although the Latvian government still reacted more quickly then its European counterparts, its response was relatively reactive insofar as cases had already increased. Indeed, by the second-wave of COVID-19, trust in the government's decision making system had dwindled (Šteinbuka et al., 2022).

Policy responses during the third and fourth wave

Following its first true grappling with a large number of cases in the fall of 2020, Latvian responses to later pandemic waves were more inconsistent and less responsive in nature. For instance, though on the one hand, though on February 5, 2021, the previous state of emergency was extended to April 6, 2021 due to rising case numbers during the spring[224], on the other hand some restrictions were relaxed, including weekend curfews.[225] Worries of a third wave persisted however and in March 2021, two regional hospital associations warned of this possibility, as well as the spread of the most

[222] LETA. (2020, November 2). Latvian government considers diverting EUR 15.08 million to COVID-19 tests. *Baltic News Network*. Retrieved April 27, 2023 from: https://bnn-news.com/latvian-government-considers-diverting-eur-15-08-million-to-covid-19-tests-218469

[223] VMNVD. (2023, February 15). *Where to get tested for Covid-19?*. Retrieved April 27, 2023 from: http://covid19.gov.lv/en/covid-19/about-covid-19/who-can-be-tested-covid-19-free

[224] Latvian Public Broadcasting. (2021, February 5). State of emergency extended until April 6. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://eng.lsm.lv/article/politics/politics/state-of-emergency-extended-until-april-6-in-latvia.a391766/

[225] Latvian Public Broadcasting. (2021, February 11). The government has decided not to continue the house meeting over the weekend. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://www.lsm.lv/raksts/zinas/latvija/valdiba-lemusi-neturpinat-majsedi-nedelas-nogale.a392488/

contagious type of Covid-19 in Latvia.[226] Hospitals began reaching maximum bed capacity with patients having to wait in lines. While case numbers continued to be relatively high, the Latvian government chose to let the state of emergency end as planned on April 6, 2021.[227] It seems likely that because of this that case numbers did not fall until the summer months of 2021. [228]

A similar pattern of inconsistency played out during the fall of 2021. In this case, a government scientific advisory group advised the government to avoid a possible fourth wave of infections but was ignored, with the group resigning as a result.[229] The subsequent surge in Covid-19 infections unfortunately rose to record levels as is seen in Figure 1.1. And in response, Latvia declared a three-month state of emergency beginning October 11, 2021. Curfews were in place and non-essential businesses were shut. Latvia was the first European nation to go into a third lockdown in October 2021 since the curbs were eased earlier that year.[230]

Healthcare Funding

To some extent, Latvia's relatively underfunded health care sector can help explain some of Latvia's uneven response to the pandemic. Latvia's experience with the pandemic suggests that while the government has had some capacity to proactively prevent rising cases. However, its health capacity to deal with real cases was comparatively poor because of underfinancing in the sector. Indeed, historically, Latvia's healthcare system has been overly dependent on private financing, a result of poorly designed health care policy which exacerbates income inequality. Meanwhile, Latvia's experience with the

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[226] Anstrate, V. (2021, May 4,). Hospitals raise alarm about a third wave of Covid-19. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://eng.lsm.lv/article/society/health/latvian-hospitals-raise-alarm-about-a-third-wave-of-covid-19.a395294/

[227] Lazdupe, I. (2021, April 26). Covid-19: Changes following lifting of the state of emergency in... *Rödl & Partner*. Retrieved April 27, 2023 from: https://www.roedl.com/insights/covid-19/latvia-corona-changes-lifting-state-of-emergency

[228] Latvian Public Broadcasting. (2021, July 12). Covid spread down by 36% over last week in Latvia. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://eng.lsm.lv/article/society/health/covid-spread-down-by-36-over-last-week-in-latvia.a412594/

[229] EURACTIV.com with AFP. (2021, November 4). Latvia declares emergency after surge in Covid cases. *EURACTIV.* Retrieved April 28, 2023 from: https://www.euractiv.com/section/health-consumers/news/latvia-declares-emergency-after-surge-in-covid-cases-2/

[230] Laizans, J., & Tsolova, T. (2021, October 22). Regret and defiance in Europe's vaccine-shy east as COVID-19 rages. *Reuters*. Retrieved April 27, 2023 from: https://www.reuters.com/world/europe/regret-defiance-europes-vaccine-shy-east-covid-19-rages-2021-10-21/

2008 financial crisis meant that at the time of the pandemic, it was dealing with a long list of unresolved issues, such as financial sustainability, low public funding, and challenges in both communicable and noncommunicable diseases (Behmane et al., 2019).

Latvia's ability to pull the country out of the first few months of COVID-19 without a significant rise in COVID-19 cases meant that its weak and underfinanced healthcare system was not seriously tested until the fall of 2020. Predictably, the Latvian healthcare system performed poorly against this onslaught. As discussed in the previous section, Latvia's ambitious testing strategy was overwhelmed in the face of rising case numbers and they were forced to place limitations on who would be able to access testing services for free. Meanwhile by February 2021, the number of deaths per million in Latvia was 32% higher than its European counterparts.[231] Though the reason for this discrepancy is not entirely clear, it seems likely that poor healthcare capacity played a role in explaining these numbers.

Despite its negative pandemic experience, funding for the healthcare sector remains low, which forces most hospitals to limit the range of services offered, and queues on state-paid services will become even less accessible as of 2023. Nevertheless, the state has secured heavy investments for COVID-19 epidemiological research and infrastructure to improve large-scale testing and to collect data to aid future policies. It is also working to this momentum by investing in a variety of other public health interventions, including a comprehensive policy package to strengthen the health information infrastructure, and promote health literacy (OECD, 2020). Ultimately, while the future of healthcare development in Latvia remains uncertain, it is clear that a comprehensive reform of the healthcare system is necessary to address the challenges posed by the aging population and fiscal constraints as well as future public health threats (OECD, 2020).

Vaccination Rollout

Meanwhile, the Latvian government's COVID-19 vaccination drive opened new political cleavages and touched on old ones. These dynamics led to low vaccination rates, which in turn likely also negatively affected the government's ability to keep COVID-19 case numbers down.

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[231] Latvian Public Broadcasting. (2021, February 4). Latvian Covid-19 death rate 32% higher than EU average. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://eng.lsm.lv/article/society/health/latvian-covid-19-death-rate-32-higher-than-eu-average.a391586/

With regards to new political cleavages, the vaccination drive faced a myriad of problems early on, causing considerable public grievances. The failure of the authorities to procure enough vaccine doses in the face of AstraZeneca's failure to obtain an early authorization for use in the public from the European Medicines Agency sparked a public outcry at first (Šteinbuka et al., 2022). Disagreements about vaccine rollout took place at the highest levels of government, with Prime Minister Krišjānis Kariņš expressing his lack of confidence in the then-Minister of Health, Ilze Viņķela. He pointed to problems with the vaccine availability plan, which ultimately led to her resignation.

Moreover, delays in vaccine deliveries led to a slowdown in administering them. According to vaccination points, hospitals, and GP offices, the number of vaccines received was only known at the time of delivery which causes more tension in internal distribution. This state of affairs made it impossible to meet earlier deadlines. As such, vaccination rollout was slow and by October 2021, only achieved 57% vaccination of the 1.9 million Latvians, well below the EU average of 74%. [232]

Meanwhile, vaccination distribution intersected with existing ethnic divides within Latvia. As an ethnically diverse country, indigenous Latvians and Livonians making up 62% of its 1.9 million residents as of 2011[233]. According to a survey, those who primarily consume Russian media content, mostly Russian speaking minorities, are the most likely to say they will not get vaccinated. At the time, 60% of Latvians who would get their news from Russian websites said they would definitely or probably not get vaccinated (Szakács and Bognár, 2021).

The Latvian state had faced similar challenges with regards to its testing strategy. Though the state understood the importance of communication by releasing guidelines and making the testing process transparent, they found it challenging to reach ethnic minorities, particularly Russian-speaking ones. They were more vulnerable to poverty and social exclusion because of their place of residence, occupation, level of education, and access to information. Minority groups generally were also more likely to be susceptible to growing misinformation surrounding vaccination drives that may have resulted in the COVID-19 spikes.[234]

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[232] Sauer, P. (2021, October 20). Latvia is first country to reimpose lockdown in Europe's new Covid wave. *The Guardian*. Retrieved April 27, 2023 from: https://www.theguardian.com/world/2021/oct/20/latvia-enters-month-long-covid-lockdown-as-fourth-wave-breaks

[233] On Latvia (2022). *Ethnic Groups in Latvia: Majority and Minorities*. Retrieved April 27, 2023 from: https://www.onlatvia.com/topics/culture-of-latvia/ethnicities-in-latvia

[234] Pandemics of social inequalities: status of national and ethnic minorities in Latvia and Estonia. (n.d.). *Institute of Central Europe.* Retrieved from April 28, 2023 from:

Furthermore, the Latvian government opened up yet another line of political cleavage when it decided to take steps to make the COVID-19 vaccination mandatory for its citizens debating whether it should be compulsory for employers to fire workers who refused to get vaccinated. This debate and decision sparked huge protests taking place in August 2021 with citizens voicing their concerns for freedom.[235] It is unclear whether the protests were able to influence the government's decision. By November 2021, the vaccination data showed that roughly 60% of Latvian adults had been fully vaccinated, one of the lowest rates in the European Union at the time.[236] However, as COVID-19 cases started rising by October 2021 (as seen in Figure 1.1), the increased hospitalization and death rates led to a sharp increase in vaccination rates thereafter.[237] By January 2022, the government analyzed the dynamics of vaccination coverage among seniors and potential methods of increasing it. They decided that strengthening the choice of voluntary vaccination rather than requiring vaccination would achieve greater effectiveness.[238]

Baltic bubble

To some extent however, Latvia was able to lean on its unique status as a Baltic country to weather part of the pandemic. Latvia, Lithuania, and Estonia thereafter formed the 'Baltic Bubble' in May, allowing residents of those states to freely travel across Baltic borders. As we will also see in the case of Lithuania, Baltic unity has always been an essential part of Latvia's internal politics and foreign relations. Collaboration during COVID-19 was called upon between the three countries so as to share and combine their resources and knowledge to address the challenges of COVID-19 to improve the chances of success (Monciunskaite, 2021). Individuals traveling between the three countries agreed to drop the requirement for self-isolation as long as they had not visited

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https://ies.lublin.pl/en/comments/pandemics-of-social-inequalities-status-of-national-and-ethnic-minorities-in-latvia-and-estonia/

[235] Euronews (2021, August 19). Latvia's plans for mandatory vaccination spark huge protests. Retrieved April 27, 2023 from: https://www.euronews.com/2021/08/19/latvia-s-plans-for-mandatory-vaccination-sparks-huge-protests

[236] Euractiv (2021, November 16). Latvia toughens rules for unvaccinated people. Retrieved April 27, 2023 from: https://www.euractiv.com/section/health-consumers/news/latvia-toughens-rules-for-unvaccinated-people/

[237] Ibid.

[238] Latvian Public Broadcasting. (2022, February 4). Latvia abandons idea of mandatory vaccination of seniors. *Latvijas Sabiedriskie Mediji*. Retrieved April 27, 2023 from: https://eng.lsm.lv/article/society/health/latvia-abandons-idea-of-mandatory-vaccination-of-seniors.a442002/

other countries. This is an interesting case study for other countries considering reopening borders with their neighboring states, especially during a time when many EU countries restricted cross-border collaboration (Webb et al., 2022). All three Baltic countries' health ministers had reiterated their intention to provide mutual assistance to national health systems and to collaborate to deal with future outbreaks. And, thanks to their collaborative efforts, the Baltic countries were able to return citizens who had been stranded on the German-Polish border due to virus-related border closures. In this regard, the coronavirus crisis aided in the unification of the Baltic countries[239].

Conclusion

Latvia's initially strong performance dealing with the COVID-19 pandemic in its early months eroded bit by bit with subsequent waves of the pandemic. By the second and third waves of the pandemic in the fall of 2020 and spring of 2021, Latvia's pandemic policies had grown consistently more inconsistent and unresponsive, leading to a fourth wave in the fall of 2021 that surpassed the previous waves in size.

As this country report has shown, this uneven performance is likely due in no small part due to its relatively underfinanced health care system, which struggled to handle testing and treatment of COVID-19. In terms of the vaccination drive, the Latvian state faced hurdles like public resistance, protests and scandals which led to delays in fulfilling the mass vaccination drive envisioned by them during the discussed time frame. Both these factors and misinformation among minorities, especially Russian ones, led to the Baltic state having a lower vaccination rate than the EU average in the discussed timeframe. While Latvia did enjoy some benefits of Baltic unity and solidarity, overall, Latvia's struggles with its health care system and vaccination drives helped lead to a performance that put it middle of the pack with respect to other EU countries.

[239] Veebel, V. (2020, November 19). Bubble trouble: Estonia and the coronavirus crisis. *ECFR*. Retrieved April 27, 2023, from: https://ecfr.eu/article/bubble-trouble-estonia-and-the-coronavirus-crisis/

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Szakács, J., & Bognar, E. (2021). *The impact of disinformation campaigns about migrants and minority groups in the EU*. Policy Department for External Relations Directorate General for External Policies of the Union. https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/INGE/DV/2021/07-12/IDADisinformation_migrant_minorities_EN.pdf

Webb, E., Winkelmann, J., Scarpetti, G., Behmane, D., Habicht, T., Kahur, K., Kasekamp, K., Köhler, K., Miščikienė, L., Misins, J., Reinap, M., Slapšinskaitė-Dackevičienė, A., Võrk, A., & Karanikolos, M. (2022). Lessons learned from the Baltic countries' response to the first wave of COVID-19. Health Policy, 126(5), 438–445. https://doi.org/10.1016/j.healthpol.2021.12.003

Lithuania: Country Report of COVID-19 Government Responses by Muneeba Rizvi

Introduction

This country report provides a brief overview of the Lithuanian experience of the COVID-19 pandemic and covers the national-level policy responses from December 31, 2019, to October 1, 2021.

During early stages of the pandemic, the Lithuanian government was quick to mobilize healthcare and economic resources in response to the crisis. While it was able to successfully navigate its first wave, its health care infrastructure and digital technologies complicated its ability to implement policies. Meanwhile, Lithuania's experience with the first wave also foreshadowed cracks in the effectiveness of its response which the second wave subsequently exposed especially with regards to the economy, health care sector and misinformation. Misinformation in particular, continued to play a large role in subsequent waves and contributed to Lithuania's generally lackluster performance in reducing the spread of COVID-19 overall. In what follows, I explore these dynamics in greater detail throughout Lithuania's different waves.

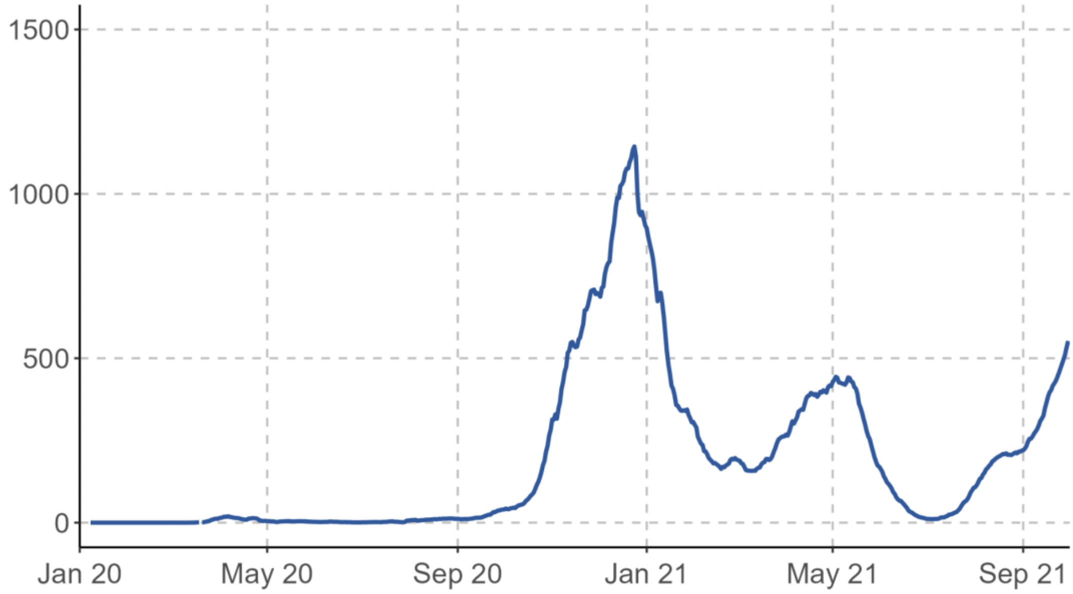

Figure 21: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Lithuania.[240]

[240] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

COVID-19 response in Lithuania

Institutional Preconditions

During the first wave of the COVID-19 pandemic, Lithuania employed a centralized crisis management mechanism, which consisted of a COVID-19 Management Committee chaired by the Prime Minister that met to decide on measures to contain the spread of COVID-19 and a number of working groups in the government office.[241]

On February 26, 2020, Lithuania declared a state-level emergency even before the country's first COVID-19 case was detected on February 28, 2020 before the WHO declared a pandemic. The early lockdown gave the country time to coordinate its response strategy and amongst others, allowed it to set up a State Emergency Operations Center, headed by Health Minister Aurelijus Veryga, to coordinate efforts against the spread of the COVID-19 virus.

Policy responses during the first wave

During the first wave, Lithuania, along with the other Baltic states, was praised by the media and academics for being able to maintain low infection rates (Dvorak, 2021). Indeed, up until September 2020, Lithuania had managed to keep its COVID-19 incidence rate down to less than 100 cases per day (see Figure 21). Arguably, the government was able to achieve these results due to its swift and multifaceted policy response. For example, within the same week of declaring an emergency, the government moved quickly and recommended canceling all international events and, by the second week of March 2020, brought the recommendation into action. Moreover, by March 12, 2020, it backed the State Emergency Situation Commission's proposal to suspend the activity of all educational establishments in the country.

However, although decisions were centralized and taken rather quickly, institutions and public bodies implementing these changes were at times poorly well-equipped and struggled to adapt. This negatively affected the effectiveness of these policies to slow the spread of the virus. For instance, although COVID cases overall were relatively low during the first wave, to the extent that there were cases, hospitals in large cities became COVID-19 hotspots due to the government's failure to supply protective equipment,

[241]Summary of the monograph From Quick wins to Significant Losses: Lithuania's Response to the COVID-19 pandemic and the management of the crisis in 2020. Vilniaus Universitetas. Retrieved April 28, 2023 from: https://www.tspmi.vu.lt/wp-content/uploads/2021/01/Summary.pdf

which resulted in the virus's spread among hospital staff and patients, a phenomenon that continued throughout the second wave (Dvorak, 2021).

Meanwhile, the role of digital technology further complicated the government's ability to implement policies. For instance, low levels of access to digital technology among its population proved to be a particular challenge for regulating school closure. Online education is only possible with widespread student access to digital devices and the internet. Due to the lack of digital infrastructure, and particularly urban-rural divide in terms of access, in May 2020, the Lithuanian government allowed struggling schools to conduct offline classes under mandated conditions (Kaminskienė et al., 2021).

In contrast, Lithuanian government was able take advantage of digital tools to effectively respond to the challenge of disseminating information about COVID-19 One notable measure implemented was the 'Mask Fashion Week' held in the capital Vilnius on May 5, 2020, which was a special kind of fashion week designed to promote the wearing of face-masks[242]. Moreover, Lithuania created interactive dashboards with up-to-date data about the reported COVID-19 incidence and mortality, tests performed, as well as data broken down by local area, gender, and age using an ArcGIS-based map (Webb et al., 2022).

Policy responses during the second wave

Compared to the first wave of COVID-19, society-at-large and the government's readiness level arguably was lower likely due to complacency over the virus as well as upcoming elections which diverted the attention of government officials (including the Prime Minister and MInister of Health who were both active in election activities).[243]

By October, case numbers had began surging[244] and the start of this second COVID-19 wave coincided with the end of the Lithuanian national elections.[245] During November 2020, cases further spiked with an average 2,718 new daily cases in Lithuania making it

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[242] Sytas, A. (2020, May 5). Lithuanian capital holds "Mask Fashion Week" amid coronavirus pandemic. *Reuters*. Retrieved April 27, 2023 from: https://www.reuters.com/article/health-coronavirus-lithuania-mask-fashio-idUSL8N2CN6OU

[243] China-CEE Institute. (2020, November 16). *Lithuania social briefing: The second-wave of COVID-19 takes Lithuanian society by surprise*. Retrieved April 27, 2023 from: https://china-cee.eu/2020/11/16/lithuania-social-briefing-the-second-wave-of-covid-19-takes-lithuanian-society-by-surprise/

[244] Ibid.

[245] Dapkus, L. (2021, April 21). Lithuania holds national vote, coalition talks expected. *AP NEWS*. Retrieved April 27, 2023 from: https://apnews.com/article/virus-outbreak-parliamentary-elections-health-elections-vilnius-6e66149b94863b8ed2150de4463d8225

the worst affected country in the world at the time[246]. The next couple of months saw record high COVID-19 cases and deaths in the country (see Figure 1.1). In what follows, we will explore in greater detail how Lithuanian elections, healthcare sector and misinformation helped inform pandemic response and control.

Elections

The October 2020 elections exposed tensions between policies designed to keep case numbers low and their economic impact. Rising case numbers, along with virus-related unemployment and economic challenges due to the pandemic were major issues of concerns for voters. In a country where the unemployment rate already stood at 8.5 percent in February 2020, after the implementation of COVID-19 measures it jumped to more than 14% in October 2020[247]. Moreover, high unemployment rates along with restriction on business activities led to a rise in income, wage and social inequalities in Lithuania (Clark et al., 2021)[248]. The most vulnerable demographics—those who are elderly, disabled, single parents, less educated, and unemployed—show poverty rates that are significantly higher than those of the general population (OECD, 2020).

To its credit, the government took steps to ensure wage disparities would not increase especially during and after COVID-19 through key fiscal policy measures. Although certain sectors, like manufacturing and transport, were hit harder than others, the country experienced a mild economic setback during the first wave. This resulted in generous stipulations from the government, particularly in the healthcare, education, and financial sector. Indeed, although the economy shrank 4% in the second quarter of 2020, it still came in second in terms of economic performance out of all EU countries.[249]

[246] LRT TV. (2020, December 16). Coronavirus: Lithuania worst affected country in the world – NYT. *Lrt.lt*.Retrieved April 27, 2023 from: https://www.lrt.lt/en/news-in-english/19/1300436/coronavirus-lithuania-worst-affected-country-in-the-world-nyt

[247] Dapkus, L. (2021, April 21). Lithuania holds national vote, coalition talks expected. *AP NEWS*. Retrieved April 27, 2023 from: https://apnews.com/article/virus-outbreak-parliamentary-elections-health-elections-vilnius-6e66149b94863b8ed2150de4463d8225

[248] OECD. (2020, November 23). Lithuania: COVID-19 crisis reinforces the need for reforms to drive growth and reduce inequality. *OECD Better Policies for Better Lives*. Retrieved April 27, 2023 from: https://www.oecd.org/newsroom/lithuania-covid-19-crisis-reinforces-the-need-for-reforms-to-drive-growth-and-reduce-inequality.htm

[249] Sytas, A. (2020, October 12). Lithuanian opposition party wins first round of parliamentary election. *Reuters*. Retrieved April 27, 2023 from: https://www.reuters.com/article/us-lithuania-election-results-idUSKBN26X0SN

However, although the incumbent Prime Minister Saulius Skvernelis' won Lithuania's first round of parliamentary elections,[250] the second round of parliamentary elections resulted in a change of government, with the former ruling coalition being replaced by a coalition of the opposition parties. [251] Faced with rising case numbers[252] , the incumbent government found itself in between a rock and a hard place. Indeed, it had initially hesitated to implement restrictive quarantine policies during election season, perhaps in no small part because of complaints about the economic impact of pandemic restrictions. However, it also faced criticism for implementing restrictive policies so belatedly.[253] Meanwhile, although their efforts to stabilize the economy helped Lithuania outperform relative its EU neighbors, ultimately high absolute rates of unemployment and inequality were of greater concern to voters. [254]

Free from electoral concerns, the Skvenelis government, which held power until December 11 2020, subsequently implemented second quarantine and stay-at-home policy by November 4, 2020, and strict measures such as limiting contacts outside households, regulating public gatherings, limiting the number of on-site classes for secondary schools, limiting the number of passengers on public transport and making masks mandatory in all public places were reintroduced. Upon taking over office, the newly elected and Lithuania's first female Prime Minister Ingrida Šimonytė did not drastically depart from her predecessor's policies, though implemented policies were less stringent in character. For instance, while new government implemented a second nation wide lockdown on December 16, 2020, it was milder than the first lockdown and a ban on arrivals from all regions and requiring schools to close on all levels was not in place[255].

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[250] Sytas, A. (2020, October 11). COVID-19 is the backdrop as Lithuania votes in national election. *Reuters*. Retrieved April 27, 2023 from: https://www.reuters.com/article/lithuania-election-idINKBN26W02U

[251] Sytas, A. (2020, October 12). Lithuanian opposition party wins first round of parliamentary election. *Reuters*. Retrieved April 27, 2023 from: https://www.reuters.com/article/us-lithuania-election-results-idUSKBN26X0SN

[252] Sytas, A. (2020, October 11). COVID-19 is the backdrop as Lithuania votes in national election. *Reuters*. Retrieved April 27, 2023 from: https://www.reuters.com/article/lithuania-election-idINKBN26W02U

[253] Dapkus, L. (2021, May 2). Lithuania holds parliamentary vote as pandemic hits jobs. *AP NEWS*. Retrieved April 27, 2023 from: https://apnews.com/article/pandemics-virus-outbreak-health-lithuania-elections-2498259c94c8813056ca6929231b1ee1

[254] Ibid.

[255] Reuters. (2022, July 15). Lithuania: The latest coronavirus counts, charts and maps. Retrieved April 27, 2023 from: https://www.reuters.com/graphics/world-coronavirus-tracker-and-maps/countries-and-territories/lithuania/

Health Care

Over the last couple of years, Lithuania has increased its healthcare expenditure by 0.5% of its GDP (7% of GDP in 2019) (Maciukaite-Zviniene and Valys, 2022). Since the cooperation of all stakeholders involved with healthcare management is crucial, any shortcoming in terms of funds or resources (human or material) can hinder healthcare services.

This surge in cases in the fall of 2020 arguably in part came about because regional hospitals in Lithuania were given little information about how the epidemiological situation would develop and what steps they should take. According to a report in the Lithuanian National Radio and Television, public healthcare strategists did not act quickly enough to stop the virus from spreading. [256] Medical staff were falling prey to COVID-19 during the second wave creating a shortage of medical staff, overwhelming the healthcare system without giving it sufficient time to recover from the first wave. Doctors from regional hospitals complained about the shortage of staff, beds and the overwhelming cases during this time. But it was little to no avail. Lithuania's healthcare system felt the squeeze during the second wave as funds were delayed, as many doctors at the regional hospitals speculated, due to the election season.[257]

In particular the pandemic shed light on the limitations in the healthcare system of Lithuania. This has motivated the Lithuanian government to roll out reforms in what they have identified as major flagship areas, namely a robust healthcare system, sustainable digital transformations and strengthening the higher education system (Saulnier, 2022). This underscores the importance of future collaborations between public and private entities to ensure better services, particularly in the healthcare sector.

Misinformation

With the turbulent political events in the country, the state failed to control misinformation surrounding COVID-19 prevalent among online comment sections and on social media risking to erode the solidarity between the Lithuanian government, businesses and civil society. Lithuanian military analysts argue that such digital campaigns may further public

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[256] Vilikanskytė, M., & Šemelis, A. (2020, October 21). Understaffed and overwhelmed: Lithuania's health officials struggle to contain pandemic. *Lrt.lt*. Retrieved April 27, 2023 from: https://www.lrt.lt/en/news-in-english/19/1258183/understaffed-and-overwhelmed-lithuania-s-health-officials-struggle-to-contain-pandemic

[257] Lapėnienė, J. (2020, November 9). Lithuanian healthcare system close to collapse, doctors warn. *Lrt.lt*. Retrieved April 27, 2023 from: https://www.lrt.lt/en/news-in-english/19/1272332/lithuanian-healthcare-system-close-to-collapse-doctors-warn

unrest, dismiss the country's healthcare system and jeopardize trust in the government[258].

A wave of conspiracy theories peddled by anti-vaccine activists also created disagreements within civil society forcing the Lithuanian government to take measures such as removing public comments from their websites.[259] Lithuania sought to vaccinate 70% of the population by July 2021 but was only able to vaccinate about half the population by then as the pace of vaccination remained sluggish in part as a consequence of the anti-vaccine conspiracy theories. The vaccination drive started in December 2020 by first dividing the population according to age and field of work.

The third and fourth wave

As Lithuania began to allow more freedom such as wider access to health, work, travel and social activities during COVID-19 especially to fully-vaccinated people, the country descended into the third wave in March 2021. The third wave was fortunately milder when it came to the number of cases and deaths as compared to the second wave likely due to higher rates of vaccination. Indeed, the third wave started to wane in early June 2021 as officially announced by the government in noting that more than half of the adult population is already immune to Covid-19.[260] However, to the extent that COVID-19 cases continued to rise, misinformation and low levels of government trust likely played a role.

With regards to vaccination rates, by mid-October 2021, according to EU health data, 71% of Lithuanian adults were fully vaccinated, which was close to the European Union average of 74%. However, COVID-19 numbers began rising again as shown in Figure 1.1 which denotes the fourth wave. Health experts speculated that the slow vaccination rate led to the rise in numbers, causing hospitals to operate beyond their maximum

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[258] Ministry of Health Press Service (2021, February 8). Lots of fake news in social media about COVID-19, military analysts warn. *Ministry of Health of The Republic of Lithuania*. Retrieved April 27, 2023 from: https://sam.lrv.lt/en/news/lots-of-fake-news-in-social-media-about-covid-19-military-analysts-warn

[259] AFP. (2021, October 21). Lithuanian news outlets delete comments to combat COVID misinformation. *Euronews*. Retrieved April 27, 2023 from: https://www.euronews.com/my-europe/2021/10/21/lithuanian-news-websites-delete-public-comments-to-prevent-covid-19-misinformation

[260] LRT.lt. (2021, June 1). Lithuania is past the third wave of pandemic – government. Retrieved April 27, 2023 from: https://www.lrt.lt/en/news-in-english/19/1422714/lithuania-is-past-the-third-wave-of-pandemic-government

capacity.[261] A state of emergency was declared by early October 2021 again with a lockdown being in place till mid-November 2021. Similar measures to the previous waves were back in place like a night curfew, limitations on all public and most private gatherings and shopping.

According to health experts, this surge was caused by widespread mistrust of government and officials dating back to the Soviet era, as well as vaccine hesitancy and refusal to accept state-mandated coronavirus curbs and belief in conspiracy theories surrounding the vaccination process.[262] Hence, in Lithuania, the lack of public awareness campaigns and uncontrolled spread of misinformation arguably contributed to a fourth peak in case and death numbers that did not occur to this extent in other European countries.

Although other policies in place during the third and fourth wave were not as significantly documented in the media as compared to the first two waves, it appears that the focus throughout the third and fourth waves was to get more people vaccinated. Indeed, increasingly policies were predicated on people's vaccination status. During April 2021, authorities introduced COVID-19 vaccine passports that indicated citizens' vaccination status and allowed them to bypass restrictions on certain activities, including dining indoors, attending sporting events, and holding large parties[263]. Between August to November 2021, several thousand people gathered outside the Lithuanian parliament, Seimas, to voice their protest against the government's planned restrictions through COVID-19 passports for people with no COVID-19 immunity [264]. The government still went ahead with the planned COVID-19 vaccine passports however, demonstrating their commitment to using vaccination as a condition of free movement.

[261] Sytas, A. (2021, October 15). Lithuanian hospitals stop accepting non-urgent patients amid COVID-19 surge. *Reuters*. REtrieved April 27, 2023 from: https://www.reuters.com/world/europe/lithuanian-hospitals-stop-accepting-non-urgent-patients-amid-covid-19-surge-2021-10-15/

[262] Shotter, J., Dunai, M., Milne, R., Fleming, S., & Burn-Murdoch, J. (2021, October 22). From Baltic to Balkans, Covid crisis engulfs central and eastern Europe. *Financial Times*. Retrieved April 27, 2023 from: https://www.ft.com/content/06b30dfb-998e-443f-a2bd-41f0b2ca4ab9

[263] Sytas, A. (2021, April 14). Lithuania to introduce "COVID-19 passports" for certain groups. *Reuters*. Retrieved April 27, 2023 from: https://www.reuters.com/world/europe/lithuania-introduce-covid-19-passports-certain-groups-2021-04-14/

[264] Stankevičius, A., Jakučionis, S., & BNS. (2021, August 10). Several thousand in Vilnius protest vaccination pass, erect gallows for 'traitors.' *Lrt.lt*. Retrieved April 27, 2023 from: https://www.lrt.lt/en/news-in-english/19/1466067/several-thousand-in-vilnius-protest-vaccination-pass-erect-gallows-for-traitors

Conclusion

The COVID-19 crisis in Lithuania shows us two interesting extremes; how the country could control the virus successfully and how the government struggled as it descended into a fourth wave, arguably not only the country's worst in terms of cases reported but within the EU as well.

During the early stages of the pandemic, the Lithuanian government was quick to adapt and set up centralized decision-making capacities to draft recommendations and restrictions to deal with the COVID-19 pandemic. Within three weeks of the first case being reported in the country, Lithuania enacted restrictions and instituted lockdowns after fewer than 30 cases were reported. Based on the existing literature, this might have facilitated the first modest spread and allowed time to develop testing and contact tracing techniques. Additionally, it gave authorities important time to learn more about the virus, enhance their capabilities, and plan their reaction albeit overwhelming the healthcare system with COVID-19 cases.

However, these early successes could not be sustained, as Lithuania's experience in its subsequent waves showed. With regards to health care, even during the first wave the country's weak health infrastructure was unable to keep up with the ambitious governmental strategy resulting in an implementation gap. Problems with its health care infrastructure became more salient during subsequent waves which were far harsher in terms of case numbers. In terms of monitoring health sector plans, as of now case surveillance, including testing and sequencing, has declined, making it increasingly difficult to assess the infectivity of new strains, the characteristics of the disease and the effectiveness of countermeasures. Lithuanian health experts have deemed the new mutations of the coronavirus are more contagious but relatively harmless as Lithuania looks forward to forgetting about lockdowns but of course not the virus[265].

Meanwhile, though the government made a concerted effort to address the economic fallout of the pandemic during the first wave, absolute levels of unemployment and inequality continued to rise, which helped lead to a change in government in October 2020. While significant fiscal and monetary policies were brought in place to address the economic impact of COVID-19, their implementation remains a concern.

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[265] Vilikanskytė, M. (July 23, 2022). Lithuania looks to post-Covid life: We can forget lockdowns, but not the virus. *Lrt.lt*. Retrieved April 27, 2023 from: https://www.lrt.lt/en/news-in-english/19/1742519/lithuania-looks-to-post-covid-life-we-can-forget-lockdowns-but-not-the-virus

Similarly, while the government made a concerted effort to disseminate information about the virus's combat during the first wave of the pandemic, these efforts faltered in the following waves. Misinformation campaigns became increasingly effective in influencing citizen’s attitudes toward first, the pandemic itself, and then vaccination against it. The subsequent third and fourth wave brought to light citizen hesitancy to get vaccinated. A variety of reasons have been speculated according to different studies but at the core of it lies how the importance of vaccination was communicated to the people.

Lithuania’s pandemic experience suggests that resilience is important for sustaining an effective pandemic response. It is worth noting that the COVID-19 crisis management focused on controlling the epidemiological situation and preventing the spread of the coronavirus within the country, with little attention paid to building public resilience. In the future, a management system will be required to absorb and recover from comparable systemic threats. By the end of 2020, there had been a change in working methods to control the epidemic, but no change in public policy objectives and a way of thinking[266]. Future work on this issue will be necessary if Lithuania is to effectively fend off its next public health threat.

[266] Bortkevičiūtė, R., Kalkytė, P., Kuokštis, V., Nakrošis, V., Patkauskaitė-Tiuchtienė, I., & Vilpišauskas, R. (2021). *From Quick Wins to Significant Losses: Lithuania’s Response to the COVID-19 Pandemic and the Management of the Crisis in 2020: Summary of the monograp*h. Retrieved April 28, 2023, from: https://www.tspmi.vu.lt/wp-content/uploads/2021/01/Summary.pdf

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Luxembourg: Country Report of COVID-19 Government Responses by Humaira Hossain

Introduction

In Luxembourg, the government acted swiftly and implemented a series of measures to contain the spread of COVID-19 as well as to mitigate the pandemic's impact on the economy. Amongst others, it imposed a lockdown, banned mass gatherings, and mandated masks. The provision of financial support and essential services from the government helped citizens and companies alike to cope with the socio-economic burden of the COVID-19 pandemic. Moreover, Luxembourg set up a network of COVID-19 testing centers across the country, including walk-in centers and mobile units, to make testing for the virus as accessible as possible.

As will be shown in this country report, the crisis management system led by the highest level of government and its consular networks allowed the country to respond quickly to the COVID-19 pandemic. Furthermore, the following will argue that Luxembourg experienced fewer pandemic fatalities because of its well-coordinated healthcare system and well-prepared response. Despite some challenges, the country also put great effort into ensuring its information campaign on the pandemic reached the Luxembourgish population. Therefore, this country report will also examine how the public perceived the policy measures and argue that in turn public opinion to some extent shaped the government's policy response.

This country report will first outline Luxembourg's policy responses to the COVID-19 pandemic during the first three waves from early 2020 to the summer of 2021. It will then examine the ideologies of Luxembourg's political parties as well as societal factors such as public trust and confidence in government during the COVID-19 pandemic. Lastly, this country report will conclude with a discussion of the country's political institutions and organization structure as well as its crisis preparedness, in particular its healthcare sector capacities.

Luxembourg's Policy Response Across Waves of the COVID-19 Pandemic

After outlining the epidemiological situation throughout the COVID-19 pandemic in Luxembourg, this first chapter provides an overview of the measures taken by the government of Luxembourg by using the CoronaNet Research Project's dataset (Cheng et al., 2020).

Figure 22: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Luxembourg.[267]

In Luxembourg the first COVID-19 case was officially reported on February 29, 2020, and the number of positive cases began to rise in the following weeks (Spiteri et al., 2020; Figure 22) By contrast to other European countries, Luxembourg's COVID-19 Task Force implemented a "Large Scale Testing Strategy", a unique approach offering free, voluntary COVID-19 testing to its entire population on a regular basis, including cross-border commuters. This strategy provided valuable and reliable data on the prevalence of the virus in the population, which helped to guide the implementation of measures such as contact tracing and targeted restrictions[268]. In April 2020, the number of confirmed COVID-19 cases started to decline, and the government of Luxembourg decided on a series of gradual reopenings. Since Luxembourg had single-digit infection rates by early May 2020, there was little anticipation at that time of a second wave of the magnitude that was ultimately revealed in the fall. As of June 30, 2020, in the midst of

[267] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

[268] Luxembourg National Research Fund. (2020, April 28). Research Luxembourg: Announcement of 'Large Scale Testing Strategy.' *FNR – Luxembourg National Research Fund*. Retrieved April 27, 2023 from: https://www.fnr.lu/research-luxembourg-announcement-of-large-scale-testing-strategy/

the COVID-19 pandemic in Luxembourg, the number of confirmed positive COVID-19 cases recorded 4299 and the death toll surpassed 100, indicating the repeated rapid spread of the virus in the country (Latsuzbaia et al., 2020). In early 2021, Luxembourg experienced its third wave of COVID-19 infections with the number of daily cases increasing rapidly until late April 2021 followed by the gradual lifting of restrictions in the next two months. By and large, COVID-19 case numbers showed a characteristic trend, with spikes after the easing of restrictions and a stagnating spread of the virus with the subsequent reimplementation of measures. Nevertheless, in comparison to other European countries, Luxembourg had the overall lowest mortality caused by COVID-19 (Msemburi et al., 2023).

Before the COVID-19 outbreak, Luxembourg had already developed a pandemic plan in the anticipation of an influenza pandemic. This plan strengthened the country's preparedness to respond to the COVID-19 pandemic in a timely and efficient manner, especially by institutionalizing the proactive monitoring of public health and safety (OECD, 2022). In response to the rapidly growing infection rate since late February 2020, the government imposed strict measures to contain the spread of the virus such as travel restrictions on March 15, 2020, and enforced a strict lockdown soon after. On March 17, 2020, it further declared a state of emergency, restricted non-essential public movement and forced the closure of businesses and schools (OECD, 2022). However, the government of Luxembourg did not implement such strict measures without informing the Luxembourgish population about the rationale behind its actions. The government's French, Luxembourgish, German, and English websites included information on how to prevent the transmission of COVID-19 as well as on its symptoms, medical aid, and impacts on travel. In addition to this digital communication strategy, local administrations distributed multilingual social distancing brochures to all families[269].

Apart from restrictions, in March 2020, the Luxembourgish government announced to support the country's inhabitants and businesses alike by offering a range of financial measures, including aid for temporary and self-employment and direct financial

[269] Kollwelter, S. (2020, March 20). Luxembourg – Multilingual information about COVID-19 for third-country nationals | European Website on Integration. *European Website on Integration*. Retrieved April 27, 2023 from: https://ec.europa.eu/migrant-integration/news/luxembourg-multilingual-information-about-covid-19-third-country-nationals_en

assistance to affected businesses. In addition, the government established a solidarity fund to provide further assistance to the most vulnerable individuals and families[270]. Despite most of the measures being successively relaxed in April 2020, the government mandated face masks on public transport, in shops and any public place where two meters distance could not be kept. Given the country's wealth and health care resources available, Luxembourg was able to distribute five surgical masks to every citizen as part of its efforts to control the spread of COVID-19[271]. This distribution of masks was announced in April 2020, at a time when most parts of the world were concerned about shortages of personal protective equipment. Next to improving the preparedness of its citizens at the individual level, the government decided upon a comprehensive package of infrastructural healthcare policies, including the establishment of many COVID-19 testing centers. This allowed Luxembourg on May 19, 2020, to launch a mass testing strategy on a scale that would not have been possible for any other European country[272]. By early May 2020, mass testing of the Luxembourgish population for COVID-19 allowed Luxembourg to enter its second phase of easing restrictions which reopened some businesses and lifted the ban on public gatherings. Continuing its focus on preparedness through healthcare capacities and resources, the government distributed fifty more surgical masks to its citizens. Moreover, together with mass testing, these healthcare capacities made it possible for the country to reopen schools and universities under the condition that students wore face masks, tested frequently for COVID-19 and provided a negative antigen test for attending class after an infection. Furthermore, the Luxembourgish government reopened restaurants under strict social distancing rules[273]. Compared to the lockdown period, social contacts at work and leisure activities increased by 121 percent in the spring of 2020 (Latsuzbaia et al., 2020). In addition, Steffen Eikenberry and his colleagues (2020) argue that the risk of transmission further increased because more than half of the contacts during the post-lockdown period took

[270] Roland, M. (2021). Recovery and solidarity fund for businesses, measure LU-2020-25/1657 (measures in Luxembourg). *EU PolicyWatch*. Retrieved April 27, 2023 from: https://static.eurofound.europa.eu/covid19db/cases/LU-2020-25_1657.html

[271] Chronicle.lu (2020, April 16). Luxembourg City to Distribute 5 Masks per Resident by Post. Retrieved April 27, 2023 from: http://www.chronicle.lu/category/medical/32448-luxembourg-city-to-distribute-5-masks-per-resident-by-post

[272] Luxembourg National Research Fund (2020, April 28). Research Luxembourg: Announcement of 'Large Scale Testing Strategy.' *FNR – Luxembourg National Research Fund*. Retrieved April 27, 2023 from: https://www.fnr.lu/research-luxembourg-announcement-of-large-scale-testing-strategy/

[273] Government of Luxembourg (2020). *What changes with phase 3 of deconfinement?*. Retrieved April 28, 2023, from: https://msan.gouvernement.lu/dam-assets/covid-19/exit/phase-3/Flyer-Phase-3.pdf

place without the use of a face mask. This increase in social contacts therefore likely contributed to the higher reproduction rate and rising COVID-19 case numbers at the end of June 2020. By October 2020, Luxembourg thus witnessed a second wave which in turn resulted in even stricter restrictions, with many of them set to last until mid-January 2021 (Colbourn, 2020). Amongst others, the government of Luxembourg again closed non-essential businesses and limited public gatherings, but also imposed a curfew from 11 pm to 6 am[274]. Like during the first wave, the country strengthened its COVID-19 testing and contact tracing efforts in response to higher infection and death rates. Additionally, to keep patients with symptoms of severe respiratory diseases away from hospital emergency rooms, Luxembourg transformed its GP offices (Maisons médicales) after hours into specialized care centers (Schmidt et al., 2020). In total, Luxembourg established four such "advanced healthcare centers" for COVID-19 patients and suspected cases and thereby tripled the country's hospital emergency room capacity.

In December 2020, the government of Luxembourg decided to roll out the COVID-19 vaccines in different phases, prioritizing healthcare workers, residents and staff of nursing homes, people over the age of 75, and people who are particularly vulnerable to COVID-19 due to health conditions[275]. In response to the rising COVID-19 case numbers in early 2021, the government of Luxembourg focused on strengthening the country's vaccination campaign to encourage its citizens to get vaccinated and increase the population's immunization. Amongst others, it introduced a new law mandating people who are not vaccinated to provide a negative COVID-19 test result in order to enter certain businesses and public areas, including gyms and hair salons[276].

Overall, in addition to the restrictive measures introduced in all European countries, the government of Luxembourg's policy response to COVID-19 is unique in its strong focus on preparedness in terms of healthcare resources and testing capacities as well as financial support packages. Although Luxembourg recorded a comparatively high number of COVID-19 cases during the first wave, the country's healthcare system

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[274] Luxembourg National Research Fund. (2020, April 28). Research Luxembourg: Announcement of 'Large Scale Testing Strategy.' *FNR – Luxembourg National Research Fund*. Retrieved April 27, 2023 from: https://www.fnr.lu/research-luxembourg-announcement-of-large-scale-testing-strategy/

[275] Chronicle.lu. (2021, February 3). Luxembourg Presents Detailed Vaccine Rollout Plan. Retrieved April 27, 2023 from: http://www.chronicle.lu/category/medical/35454-luxembourg-presents-detailed-vaccine-rollout-plan

[276] A3M Global Monitoring. (2022). COVID-19 pandemic—Luxembourg. *A3M Event Page*. Retrieved April 27, 2023 from: https://global-monitoring.com/gm/page/events/epidemic-0002000.VqDuZqstS5A8.html?lang=en

remained fully functional as additional COVID-19 test and care centers were set up across the country (Stoppioni, 2021).

A Timeline of the Public and Political Discourse on COVID-19 in Luxembourg

As outlined in the previous chapter, the government of Luxembourg implemented strict measures such as lockdowns and a night-time curfew which strongly interfere with people's everyday lives. In many other countries, such restrictions often resulted in public unrest. Therefore, the following chapter investigates the case of Luxembourg further and provides a timeline of the country's public and political discourse on COVID-19.

Whereas the government of Luxembourg responded more independently to the first wave of the COVID-19 pandemic under a state of emergency, the second wave in the fall of 2020 actively involved the Parliament in decisions on all kinds of measures through standard democratic procedures. Looking at the discourse in the Parliament and its committees involved in decisions on COVID-19, the left-wing opposition party at first abstained from voting, arguing the proposed policies were insufficient and imprecise. With the second wave, politicians from the opposition had started to criticize the lack of consultation from the Luxembourgish government and tried blocking any decision on COVID-19-related measures (Stoppioni, 2021).

Not only in Parliament, but also in the general public Luxembourg's government's response to the COVID-19 pandemic was met with growing criticism in the second wave. On the one hand, some civil society groups expressed their disappointment in a late and lukewarm policy response despite the rapidly growing COVID-19 case rate at the time (Stoppioni, 2021). On the other hand, Luxembourg's population was increasingly facing the adverse financial and economic impacts of the COVID-19 pandemic. Moreover, the public started to question the effectiveness and legitimacy of the strict measures in relation to their massive curtailment of civil liberties. For example, on Friday, December 24, 2021, a large protest took place in Luxembourg-ville against the COVID-19 measures triggered by the government's vaccination campaign. Thereby, policies such as the requirement for people who are not vaccinated to provide a negative COVID-19 test result before going to work gave rise to anti-vaccine and anti-government discourses[277].

[277] Chronicle.lu. (2021, December 24). COVID-19 Protest Passes off Peacefully in Luxembourg-Ville. Retrieved April 27, 2023 from: https://chronicle.lu/category/at-home/38874-covid-19-protest-passes-off-peacefully-in-luxembourg-ville

Next to the impact the COVID-19 pandemic had on people's everyday lives, it strongly affected people's mental health. According to recent statistics by STATEC1, the Luxembourg National Institute of Statistics and Economic Studies, one in three Luxembourgers reported a decline in mental well-being (santé morale) during the COVID-19 pandemic. Furthermore, many people in Luxembourg considered the contact tracing app a violation of their privacy, causing mental stress. At the beginning of the COVID-19 outbreak, policymakers often overlooked these psychological impacts of the virus. (O'Connor and Peroni, 2021).
Despite the above outlined criticism emerging politically and publicly during the second wave, it can be argued that the Luxembourgish government's response to the COVID-19 pandemic remained a depoliticized issue as political parties and civil society more generally united behind the government's efforts. As demonstrated in the previous chapter, the government communicated regularly with the public and thereby maintained a high level of transparency in its decision-making processes. Accordingly, Luxembourg's population showed a higher level of confidence in its government's ability to handle the COVID-19 pandemic than the OECD average (OECD, 2022).

An efficient management of the COVID-19 crisis?

This last chapter discusses the COVID-19 response of Luxembourg with regard to the country's crisis preparedness and organizational structure.
As mentioned above, Luxembourg was well prepared for the pandemic before it detected its first case of COVID-19. However, not only the pandemic plan, but also the thereby established inter-ministerial committee to supervise the country's preparedness for a pandemic facilitated a quick and efficient response. This administrative body united experts from various ministries and agencies and soon became responsible for coordinating the country's policy responses to COVID-19 (OECD, 2022).
Given that Luxembourg is rather small in terms of its population size and also comparatively wealthy, the government was able to implement a mass testing strategy by establishing COVID-19 testing facilities and providing testing and personal protective equipment to not only all of its citizens, but also to cross-border commuters (Pardhan and Drydakis, 2021)[278]. Unsurprisingly, Luxembourg was among the countries that

[278] Chronicle.lu. (2020, April 16). Luxembourg City to Distribute 5 Masks per Resident by Post. Retrieved April 27, 2023 from: http://www.chronicle.lu/category/medical/32448-luxembourg-city-to-distribute-5-masks-per-resident-by-post

tested the most people for COVID-19 since the start of the pandemic (Mathieu et al., 2020).

Last but not least, Luxembourg has one of the most modern and well-equipped healthcare systems in the world. During the COVID-19 pandemic, the country further strengthened its capacities by allowing cross-border healthcare workers to stay in hotel rooms, lowering their risk of infection (Vysotskaya et al., 2020). Accordingly, Luxembourg had a case fatality rate of 2.6% by 2020 which is far below the global average of 6%[279]. Despite dealing with a high number of COVID-19 cases itself, the country was thus even able to treat COVID-19 patients from its neighbors, such as the North-Eastern region of France[280].

All in all, as a comparatively small and wealthy country, Luxembourg was well-prepared to face a pandemic. In particular, it had the necessary administrative structures, health infrastructure and healthcare system capacities in place to respond to the COVID-19 crisis in a timely and efficient manner.

Conclusion

To conclude, the Luxembourgish government's COVID-19 response aimed to both slow the spread of the virus and minimize its negative impacts on the economy and society. With its mass testing campaign and strong healthcare system, the country was able to implement measures and restrictions based on comprehensive data, allowing to reduce the negative economic impact of the COVID-19 pandemic on its citizens and businesses. Despite some criticism on its vaccination campaign, the government of Luxembourg arguably managed the COVID-19 crisis efficiently and with a low case fatality rate, kept its population safe. Moreover, as a unitary state with a pandemic plan in place, Luxembourg was able to adapt quickly to the epidemiological situation. Therefore, enhancing a country's preparedness will be key in the fight against future pandemics and public health crises.

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[279] Cohen, J. (2020, May 13). As A Tiny Nation Tests All Inhabitants For Coronavirus, The World Awaits The Results [Update]. *Forbes*. Retrieved April 27, 2023 from: https://www.forbes.com/sites/joshuacohen/2020/05/13/as-a-tiny-nation-tests-all-inhabitants-for-coronavirus-the-world-awaits-the-results/

[280] European Commission. (2020, May 26). Coronavirus: European Solidarity in action. Retrieved April 27, 2023 from: https://commission.europa.eu/strategy-and-policy/coronavirus-response/coronavirus-european-solidarity-action_en

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Netherlands: Country Report of COVID-19 Government Responses by Costanza Schönfeld

Introduction

The Dutch approach to the COVID-19 pandemic distinguished itself from what the press and academia alike have labeled as “liberal”. Indeed, its most notable characteristic was its focus on citizens’ responsibility, self-discipline, and protection of individual freedoms. Overall, Dutch measures against COVID-19 have granted “more personal and economic freedom than most other countries” (Hoekman et al., 2020, p. 621) while opting for the high-risk strategy of mild restrictions that allowed a slow transmission of the virus.

In fact, instead of applying high pressure on its citizens, the Dutch government preferred to opt for (1) non-intrusive containment measures (monitoring, contact tracing, and voluntary isolation) not to overwhelm ICUs, and (2) mitigation measures (mild lockdowns) to protect more vulnerable populations from the spread of infection while simultaneously achieving some degree of herd immunity (Hoekman et al., 2020). By alternating these two strategies in phases, the Dutch government aimed at balancing health, economic and social interests.

This country report aims at tracing an overview of the Netherlands’ COVID-19 counteraction strategy from January 1, 2020, to October 1, 2021. In this timespan, four waves of infection are recognizable in the Netherlands, as illustrated in Figure 23. As such, the first section of this report will outline the Dutch COVID-19 policy response embedded in its political context wave after wave. The second section will illustrate major institutional challenges and how pandemic counteraction measures were met by public opinion.

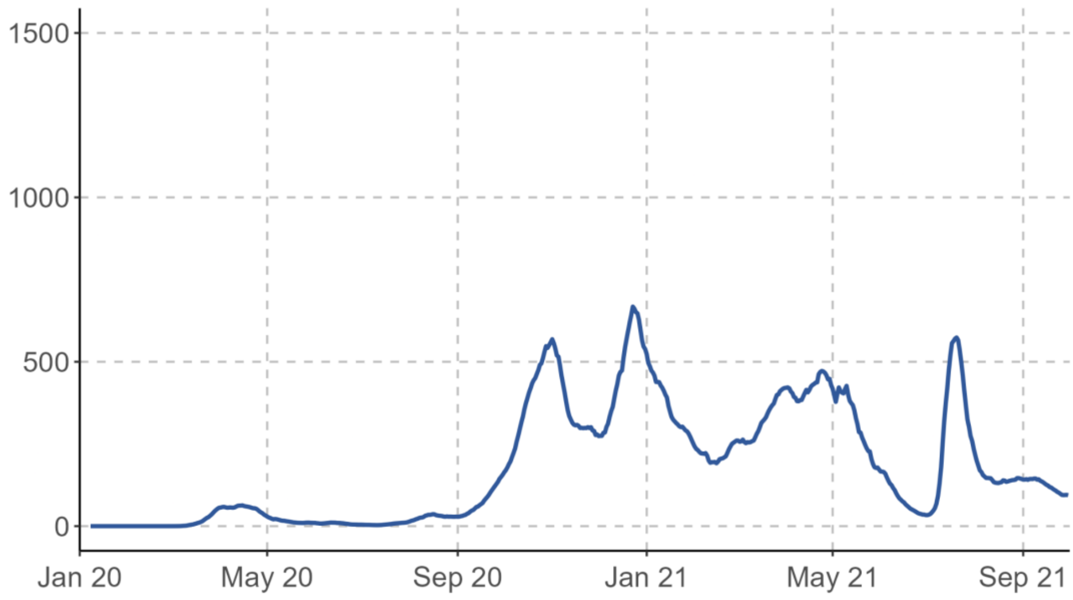

Figure 23: Number of COVID-19 Cases per Million between January 1, 2020, to October 1, 2021 in the Netherlands.[281]

The COVID-19 policy response in the Netherlands

The following section will tackle the main milestones of the Dutch COVID-19 policy response, including measures taken during the pre-crisis period (before February 2020). As illustrated above in Figure 1, the Netherlands faced two major epidemic waves in 2020 (with peaks in April and November 2020), its highest infection peak in January 2021 and a weaker resurgence of infections in July 2021[282].

The peculiarities of each period will be illustrated: measures taken during the pre-crisis period were mainly of bureaucratic nature; restrictions enacted during the first wave were characterized by a sense of urgency and responsibility; the second and third waves imposed the heaviest lockdowns; during the fourth wave, relaxations were granted more extensively by means of proof of vaccination or negative test results. For each step, the main measures will be discussed together with infection and mortality data.

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[281] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer.

[282] RIVM (2020, May 4). *National Institute for Public Health and the Environment*. Retrieved April 27, 2023, from: https://www.rivm.nl/en/news/third-wave-shows-major-surge-in-hospital-admissions-in-younger-age-groups

Pre-crisis (January to February 2020)

During the pre-crisis phase, the Dutch government closely followed WHO guidelines by spreading awareness among its citizens about basic hygiene habits[283] to adapt, such as washing hands and sneezing in elbows. Apart from reiterating the WHO advice, the Dutch initial response was limited to non-binding foreign travel advisories regarding affected areas[284] and regular press releases aimed at reassuring the population about the preparedness of the Dutch health care system (Engström et al., 2021).

One of the first institutional moves in the Netherlands to prepare for the upcoming pandemic was the activation of the Outbreak Management Team (OMT) in late January 2020. As a formal body composed of medical experts and chaired by the Dutch National Institute for Public Health and the Environment (RIVM), the OMT operates only during health crises. Following the OMT advice, Dutch Health Minister Bruno Bruins announced the classification of COVID-19 as a disease of type A (the highest possible) shortly afterward. The A-classification gave the Ministry of Health and the government the necessary legal base to take far-reaching actions[285], such as mandating health practitioners around the country to report suspected cases to the local Municipal Public Health Service (GGD)[286], which would in turn proceed to investigate the source of infection and adopt contact tracing measures (Scheres, 2020).

The first positive COVID-19 case in the Netherlands was registered on February 27, 2020[287], in the city of Tilburg, in the province of North Brabant. At that time, only symptomatic patients with a matching travel history were isolated and tested, while their contact persons did not need to isolate[288]. Returning traveler to the Netherlands from high-risk regions were asked to isolate at home, even if asymptomatic, only from the beginning of March[289].

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[283] See Policy ID 3811675 in (Cheng et al., 2020)
[284] Compare with policy IDs 1369190 (Wuhan), 405393 (Hubei), 8532263 (Northern Italy).
[285] RIVM. (2022, December 7). Welke infectieziekten zijn meldingsplichtig? *National Institute for Public Health and the Environment*. Retrieved April 27, 2023, from: https://www.rivm.nl/meldingsplicht-infectieziekten/welke-infectieziekten-zijn-meldingsplichtig
[286] RIVM. (2020, January 27). Meldplicht voor arts die patiënt verdenkt van coronavirus. *Nederlandse Omroep Stichting*. Retrieved April 27, 2023, from: https://nos.nl/artikel/2320569-meldplicht-voor-arts-die-patient-verdenkt-van-coronavirus
[287] See Policy ID 2559095 in (Cheng et al., 2020)
[288] See Policy ID 8824084 and 9905962 in (Cheng et al., 2020)
[289] See Policy ID 2208282 in (Cheng et al., 2020)

First wave (March to June 2020)

Following the first alarming outbreak in the Southern region of North Brabant, at the border with Belgium, on March 6, 2020, the first non-compulsory, stay-at-home recommendations were issued for the inhabitants of the affected regions. Random testing was performed by the RIVM in order to define the extent of the infection spread among health practitioners[290].

Shortly after, the Netherlands officially entered a crisis mode. At a major press conference on March 12, 2020, Health Minister Bruno Bruins and Prime Minister Mark Rutte announced the first national package of lockdown measures[291], which represented a shift from the initial containment strategy toward mild mitigation measures. This first Dutch lockdown included a recommendation to stay home, avoid social contact if symptomatic, and a ban on mass gatherings with more than 100 people. Essential workers at hospitals were asked not to leave the country[292], while all workers were encouraged to work from home or stagger their work time. The number of trains on the railway network was also reduced, and people were called not to travel by train or public transport unless absolutely necessary[293]. Overall, individual's compliance with reducing outings and social contacts was expected but not forcefully imposed, and non-compliance was not legally sanctioned[294].

On the contrary, the educational sector was heavily affected by mandatory restrictions: although total school closures had not been recommended by the OMT, on March 16, 2020, Healthcare Minister Bruno Bruins and Education Minister Arie Slob jointly

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[290] Ministerie van Algemene Zaken. (2020, March 6). COVID-19: New instructions for inhabitants of North Brabant [Nieuwsbericht]. *Government of the Netherlands*. Retrieved April 27, 2023 from: https://www.government.nl/latest/news/2020/03/06/covid-19-new-instructions-for-inhabitants-of-north-brabant

[291] Ministerie van Volksgezondheid, Welzijn en Sport. (2020, March 12). New measures to stop spread of coronavirus in the Netherlands [Nieuwsbericht]. *Government of the Netherlands*. Retrieved April 27, 2023 from: https://www.government.nl/latest/news/2020/03/12/new-measures-to-stop-spread-of-coronavirus-in-the-netherlands

[292] See Policy ID 2682637 in (Cheng et al., 2020)

[293] Although the Government of the Netherlands never banned any internal travel within its 12 provinces, reducing the number of trains had the same effect, as many citizens rely on trains to travel across the country and are thereby not able to travel if no trains are circulating. Therefore, in the context of the Netherlands, policies aimed at the railway network can explain how the Dutch government tried to influence internal movement between the 12 Dutch provinces (Policy ID 6137364 in in (Cheng et al., 2020)).

[294] National Crisis Communication Core Team. (2021). Guide to the COVID-19 strategy in the Netherlands. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.nctv.nl/binaries/nctv/documenten/publicaties/2021/06/21/guide-to-the-covid-19-strategy-in-the-netherlands-june-2021/Guide+to+the+COVID-19+strategy+in+the+Netherlands+June+2021.pdf

announced the closure of all childcare centers, primary and secondary schools due to pressure by teachers and parents (Hoekman et al., 2020). Moreover, as a consequence of the national-level social gathering ban, universities and institutions of higher professional education (HBO) were compelled to offer online learning activities instead of large lectures. While primary and secondary schools reopened in June 2020[295], the reopening of higher education institutions was postponed until the following academic year.

This first set of lockdown measures was framed by the government as an "intelligent lockdown", focused on restricting but protecting vulnerable categories while allowing the virus to spread among the healthy and young to build herd immunity (Aarts et al., 2022). Overall, this "relatively mild" lockdown reflected the uncertainty or need to balance containment and mitigation measures (Hoekman et al., 2020). May 6, 2020, marked the end of this phase, as the recommendation to stay home was restricted to symptomatic people only.

Later analysis found that the first outbreaks in North Brabant were connected to other European outbreaks, while the celebration of Carnival and schools not yet on holidays (in contrast to Northern regions) were deemed responsible for the quick spread of infection (Hoekman et al., 2020). Ultimately, these outbreaks provoked, during the first wave, higher mortality rates in southern regions compared to the rest of the country[296]. Overall, with a national excess mortality of almost 9 thousand people during the first nine weeks of the pandemic, the Netherlands' national case fatality rates were consistently higher than the average of the European Union[297].

Second wave (July 2020 to January 2021)

Over the summer of 2020, further relaxations were granted, but as infection rates quickly increased again, the national government was prompted to introduce further national restrictions. In September 2020, more restrictive mitigation measures were mandated by

[295] See Policy ID 5006563 in (Cheng et al., 2020)
[296] Statistics Netherlands. (n.d.). Regional impact of COVID-19. *Statistics Netherlands*. Retrieved April 26, 2023, from https://www.cbs.nl/en-gb/dossier/coronavirus-crisis-cbs-figures/regional-impact-of-covid-19
[297] The regional impact of COVID-19. EURegioData Stories. (2022 March) https://cohesiondata.ec.europa.eu/stories/s/The-regional-impact-of-COVID-19/24gj-n8r2/

the Dutch central government in designated "safety regions", where infection rates were rapidly increasing, in addition to measures imposed locally[298] [299].

However, the Cabinet also found it necessary to further tighten measures at the national level as infection rates were rapidly increasing. On December 1, 2020, the Ministry of Health introduced compulsory mask-wearing in all indoor public spaces[300] for the first time since the beginning of the pandemic. Although politicians were reluctant to develop an even more restrictive response, a full lockdown was imposed nationally on December 15, 2020[301], in order to respond to the imminent urgency of "minimizing contact between people" and lower the rising amount of daily new infections[302].

Once more, educational institutions of all levels were required to mainly provide remote teaching until the beginning of February 2021. Emergency childcare for young children was made available only for parents working in "critical sectors" (healthcare, education, public transport, and food supply). In the public sphere, restaurants and bars, cultural and entertainment venues, retail shops not selling foodstuff, and all non-medical contact-based professionals were ordered to shut down. In the private sphere, the government kept advising to practice self-restraint concerning outings, commuting to one's workplace, traveling locally or abroad, or receiving visitors in private homes, while leaving non-compliance unsanctioned[303]. At the end of January 2021, mandatory curfew measures were billed by the House of Representatives[304] and fully lifted only at the end

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[298] The designated safety regions were six at first, then eight more were singled out by the end of the month. Most of them were located in the most populous areas, in the Centre-Southern part of the Netherlands.
[299] Ministerie van Justitie en Veiligheid. (2020, September 18). More security regions introduce coronavirus containment measures [Nieuwsbericht]. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2020/09/18/more-security-regions-introduce-coronavirus-containment-measures
[300] Ministerie van Volksgezondheid, Welzijn en Sport. (2020, December 1). Face masks mandatory in all indoor public spaces [Nieuwsbericht]. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://web.archive.org/web/20210130212606/https://www.government.nl/topics/coronavirus-covid-19/face-masks-mandatory-in-all-indoor-public-spaces
[301] See Policy ID 2165491 in (Cheng et al., 2020).
[302] Ministerie van Algemene Zaken. (2020, December 14). *Lockdown in order to minimise contact between people* [Nieuwsbericht]. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2020/12/14/lockdown-in-order-to-minimise-contact-between-people
[303] Ibid.
[304] Meijer, B. H. (2021, January 20). Netherlands proposes first curfew since World War Two, flight bans. *Reuters*. Retrieved April 27, 2023, from: https://www.reuters.com/article/us-health-coronavirus-netherlands-idUSKBN29P170

of April 2021[305]. Mandatory restrictive measures on businesses and voluntary recommendations for citizens also lasted until late April 2021.

A stricter strategy during the second wave paid off in terms of infection and mortality rates: at the beginning of the second wave, the Netherlands' case fatality rates dropped lower than the EU average. Excess mortality during the first nine weeks of the second wave was estimated at less than half compared to the first wave[306], with Zuid-Holland (Rotterdam) being the most affected province[307].

Third wave (February 2021 to June 2021)

The beginning of the third wave saw the total reopening of childcare centers and primary schools. Secondary and vocational school students could enjoy partial attendance from the beginning of March 2021, while higher professional education institutions (HBO) and university students had to wait until the end of April 26, 2021.

The road for a staggered reopening was laid out on April 13, 2021[308]. During the first step, priority was given to the economy by reopening shops, markets, and outdoor seating areas of restaurants[309]. Curfew measures were completely lifted at the end of April 2021[310]. The second step affected mainly indoor sports and cultural facilities and gave more room for outdoor activities[311]. Because of the declining infection rates, the

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305 AFP. (2021, April 20). Dutch to lift Covid curfew, let cafes serve outdoors. *France 24*. Retrieved April 27, 2023, from: https://www.france24.com/en/live-news/20210420-dutch-to-lift-covid-curfew-let-cafes-serve-outdoors

306 Statistics Netherlands. (2020, November 27). Less excess mortality during second wave, but still high after 9 weeks [Webpagina]. *Statistics Netherlands*. Retrieved April 27, 2023, from: https://www.cbs.nl/en-gb/news/2020/48/less-excess-mortality-during-second-wave-but-still-high-after-9-weeks

307 Statistics Netherlands. (n.d.). Regional impact of COVID-19. *Statistics Netherlands*. Retrieved April 26, 2023, from https://www.cbs.nl/en-gb/dossier/coronavirus-crisis-cbs-figures/regional-impact-of-covid-19

308 Ministerie van Algemene Zaken. (2021, April 13). Plan to reopen society step by step [Nieuwsbericht]. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2021/04/13/plan-to-reopen-society-step-by-step

309 Ministerie van Algemene Zaken. (2021, April 20). Step 1: Shops and outdoor seating at restaurants and cafés will partially reopen; evening curfew lifted. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2021/04/20/step-1-shops-and-outdoor-seating-at-restaurants-and-cafes-will-partially-reopen-evening-curfew-lifted

310 See Policy ID 2643033 in (Cheng et al., 2020)

311 Ministerie van Algemene Zaken (2021, May 11). Step 2: Indoor sports facilities to reopen and more scope for activities outdoors. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2021/05/11/step-2-indoor-sports-facilities-to-reopen-and-more-scope-for-activities-outdoors

third step of the reopening plan was anticipated to start in early June 2021. Most locations in the Netherlands could reopen under certain conditions. The third step also marked the debut of the utilization of coronavirus entry passes[312].

The third wave was characterized by a sharp increase in hospital admissions for the youngest age groups (compared to February 2021), namely 0-39 years (+75%) and 40-59 years (+109%), while the vaccination program was proven to efficiently protect elderly people aged 80 and over (-60% in hospital admissions). While ICU admission was kept low for the age group of 0-39 years, only the 80+ age group saw a reduction (-17%), while the age groups of 40-59 years (+146%) and 60-79 years (+107%) saw a sharp increase[313].

Fourth wave (July 2021 to September 2021)

After a full reopening at the end of June 2021, the government had to reverse its decisions and enact mild restrictions again, effective from July 2021, due to the rapidly rising infections. On the one hand, in line with overall herd immunity efforts, free testing for Dutch residents traveling abroad was prolonged from July until September 2021. On the other hand, the renewal of business restrictions aimed at contrasting the spread of infection among non-vaccinated individuals by focusing on the entertainment industry: night establishments had to close again, mandatory assigned and distanced seating at restaurants and bars became the norm, and citizens were asked to "keep parties small and manageable"[314].

Despite an extensive vaccination campaign that could count on free access for all adults by mid-June 2021, invitation letters sent personally to all age groups, and extra efforts to

[312] Ministerie van Algemene Zaken (2021, May 28). Step 3: Nearly everything to reopen, subject to certain conditions. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2021/05/28/step-3-nearly-everything-to-reopen-subject-to-certain-conditions

[313] RIVM. (2020, May 4). Third wave shows major surge in hospital admissions in younger age groups. *National Institute for Public Health and the Environment*. Retrieved April 27, 2023, from: https://www.rivm.nl/en/news/third-wave-shows-major-surge-in-hospital-admissions-in-younger-age-groups

[314] Ministerie van Algemene Zaken (2021, July 9). No choice but to take summertime measures in face of rapid increase in infections. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2021/07/09/no-choice-but-to-take-summertime-measures-in-face-of-rapid-increase-in-infections

include temporary residents and international students[315], in mid-August, immunity through vaccination or infection was still unavailable to 1.8 million people in the Netherlands[316]. As such, the government saw the need to extend all previous measures well into August[317] and September 2021. While social distancing (the 1.5 meters rule) was lifted at the end of August 2021, the coronavirus entry pass became the main instrument of spread control during the fourth wave, as it was kept in place to gradually reopen the country until and beyond the end of September 2021[318]. Individuals could receive a coronavirus entry pass if they are fully vaccinated, have valid proof of recovery or a negative result from a coronavirus test taken less than 24 hours before entry and if so, then this allows them entry to various public spaces and services.

Challenges

Institutional and legal context

The Netherlands is a democracy with universal healthcare, high social benefit expenditure, and an institutional setting that values political compromise and consensus. However, the Dutch crisis management style was heavily influenced by its administrative decentralism, which might be prone to incoherent policy responses (Pattyn et al., 2021). Indeed, the Dutch crisis management style was heavily influenced by its administrative decentralism, which might be prone to incoherent policy responses varying from region to region and unrealistic expectations by the central government about local capacities. For example, the initial containment strategy based on monitoring suspected cases and contact tracing had to be quickly abandoned since local healthcare units were overwhelmed by the task (Engström et al., 2021).

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[315] Delta Journalistic platform TU Delft. (2021, February 9). International students get vaccinated in the Netherlands. Retrieved April 27, 2023, from: https://www.delta.tudelft.nl/article/international-students-get-vaccinated-netherlands

[316] See Policy ID 830486in (Cheng et al., 2020)

[317] Ministerie van Algemene Zaken. (2021, August 13,). No restrictions for on-site learning but other measures against COVID-19 extended. *Government of the Netherlands*. Retrieved April 27, 2023: https://www.government.nl/latest/news/2021/08/13/no-restrictions-for-on-site-learning-but-other-measures-extended

[318] Ministerie van Algemene Zaken. (2021, September 14). Netherlands to reopen further with coronavirus entry passes. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.government.nl/latest/news/2021/09/14/netherlands-to-reopen-further-with-coronavirus-entry-passes

In order to counteract the pandemic, municipalities regrouped themselves into 25 security regions and developed common regional emergency regulations. Accordingly, most of the measures illustrated in section 1 were possible through the extended use of the noodverordening, or "emergency regulation", a decentralized legal device only available to the Heads of Security Regions. This should not be confused with a national declaration of a state of emergency, which was absent for the whole duration of the crisis in the Netherlands. In particular, the extended use of noodverordeningen, being "executive-led, decentralized responses", was met with sharp criticism by intellectuals and jurists, which pointed at the infringement of several constitutional rights (Julicher and Vetzo, 2021).

As mentioned earlier, the OMT played a central role in the government's decision-making concerning all counteraction measures, providing it with computer-modeled risk assessment. As an organ composed solely of medical staff, the government's reliance on the OMT was criticized for being too focused on the infection-related aspects of the pandemic and disregarding the heavy social and economic impact of the suggested measures (Hoekman et al., 2020). At the onset of the pandemic, the government affirmed to "execute" OMT's recommendation rather than "consult" the organ. However, some restrictive measures, such as school closures, were dictated by public opinion rather than scientific risk assessment.

Public opinion

Traditionally, Dutch citizens have higher trust in their government compared to other EU states[319]. This high level of trust gave the government the leeway to frame counter-pandemic efforts in terms of self-responsibility in regards to collective well-being instead of coercive impositions (Pattyn et al., 2021). In a virtuous circle, the overall liberal and mild approach of the first wave paid off in terms of the popularity of the government (Prime Minister Rutte's popularity achieved 77% by the end of the first wave), and the public considered its strategy "democratic (60%), competent (70%) and fair (68%)"[320], which in turn reinforced its trust in the scientific motives of governmental impositions. In fact, by the end of the first wave, citizens were ready to accept gradual relaxation

[319] OECD (2023). *Trust in government*. Retrieved April 28, 2023, from: https://data.oecd.org/gga/trust-in-government.htm

[320] More in Common. (n.d.). *The Impact of COVID-19 on Dutch Society.* Retrieved from April 28, 2023. https://www.moreincommon.com/media/4qefbsy5/more-in-common-the-new-normal-the-netherlands-en.pdf

measures as long as “weight on the advice of scientists” would be given about the content and the timing of relaxations (60% of 30.000 interviewees) (Mouter et al., 2021)[321]. Overall, the first wave showed that the government was politically capable to “[match] the narratives with what citizens wanted or needed to hear” (Pattyn et al., 2021, p. 13).

The sense of urgency and fear of falling ill that characterized the first wave gradually subsided from the start of the second wave onward. Due to the spread of fake news and growing public scrutiny on the legitimacy of counteraction measures, the communication efforts of government entities and health practitioners alike shifted from “what” to do against the virus to “why” specific measures were in place[322].

Indeed, despite communication efforts aimed at promoting compliance and understanding about the risk of further infection spread, the second wave of lockdown measures was met by wide public discontent. While most demonstrations were non-violent[323], several episodes of street violence followed by confrontations with the police occurred in the cities of Amsterdam and Eindhoven[324], The Hague[325], and Rotterdam[326]. This decision to enact curfew policies was also met with unprecedented violence: arson against a COVID-19 testing center[327]; anti-curfew riots in the streets, attacks on shops

[321] TU Delft. (n.d.). *Lifting corona measures in the Netherlands*. TU Delft. Retrieved April 26, 2023, from: https://www.tudelft.nl/en/tpm/pve/case-studies/lifting-corona-measures-in-the-netherlands

[322] National Crisis Communication Core Team. (2021). Guide to the COVID-19 strategy in the Netherlands. *Government of the Netherlands*. Retrieved April 27, 2023, from: https://www.nctv.nl/binaries/nctv/documenten/publicaties/2021/06/21/guide-to-the-covid-19-strategy-in-the-netherlands-june-2021/Guide+to+the+COVID-19+strategy+in+the+Netherlands+June+2021.pdf

[323]Aljazeera (November 21, 2021). COVID protests in Netherlands turn violent for a second night. Retrieved April 27, 2023, from: https://www.aljazeera.com/news/2021/11/21/covid-protests-in-netherlands-turn-violent-for-second-night

[324] Nederlandse Omroep Stichting (2021, January 24). Politie grijpt hard in bij coronaprotesten in Eindhoven en Amsterdam. Retrieved April 27, 2023, from: https://nos.nl/artikel/2365748-politie-grijpt-hard-in-bij-coronaprotesten-in-eindhoven-en-amsterdam

[325] BBC News. (2021, March 14). Covid-19: Dutch police break up anti-lockdown protest. REtrieved April 27, 2023, from: https://www.bbc.com/news/world-europe-56393820

[326] Euronews. (2021, November 22). Violence in the Netherlands as anger at COVID measures grows in Europe. Retrieved April 27, 2023, from: https://www.euronews.com/2021/11/22/violence-in-the-netherlands-as-anger-at-covid-measures-grows-in-europe

[327] DW Made for minds. (2021, January 24). Dutch youths torch COVID testing center. Retrieved April 27, 2023, from: https://www.dw.com/en/rioting-dutch-youths-torch-covid-testing-center/a-56329339

and hospitals in several cities; and flaring incitements to violence on social media and messaging platforms[328].

Conclusion

The liberal approach taken by the Netherlands during the 2020-2021 COVID-19 pandemic illustrated in the first section of this report has been highly costly in terms of human life. In comparison within the European Union, Dutch case fatality rates at the beginning of the pandemic were consistently higher: only during the second wave did the Netherlands' case fatality rates drop lower than the EU average[329]. In total, the Netherlands has reported 18,000 official deaths due to COVID-19 as of September 30, 2021, but more than 36,000 deaths, reported or unreported, have been estimated to have occurred[330].

Considering the target of the restrictions outlined above, it is noticeable that the highest-burden was carried by private businesses, such as cultural and entertainment venues, restaurants and bars, retail shops, and contact-based professionals. School closures were kept at a minimum but were fundamental in order to overcome the higher infection peaks. On the contrary, restrictions on citizens' individual freedom were mild and often phrased as voluntary. In contrast with other EU countries, this act of balancing health and social interests paid off in terms of citizens' satisfaction and trust in political institutions and in scientific and medical professionals (Oude Groeniger et al., 2021).

Wave after wave, the government successfully gained citizens' compliance by encouraging them to accept individual responsibility (Pattyn et al., 2021). On the one hand, reflections on how the behavior of an individual affects the community (Pattyn et al., 2021) made citizens "more aware of others' living conditions" (58% by the end of the first wave)[331] and prompted "numerous initiatives of mutual support". On the other hand, the Dutch individualistic approach was criticized for putting considerable blame on the

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[328] Derks, S., & Gercama, I. (2021, January 27). Anti-curfew riots shake Dutch society. *Dw Made for Minds*. Retrieved April 2023, from: https://www.dw.com/en/netherlands-anti-curfew-riots-shake-dutch-society/a-56362461

[329] The regional impact of COVID-19. EURegioData Stories. (2022 March) https://cohesiondata.ec.europa.eu/stories/s/The-regional-impact-of-COVID-19/24gj-n8r2/

[330] IHME (September 30, 2021). IHME | COVID-19 Projections. *Institute for Health Metrics and Evaluation*. Retrieved April 27, 2023, from: https://covid19.healthdata.org/

[331] More in Common. (n.d.). The Impact of COVID-19 on Dutch Society. Retrieved from April 28, 2023. https://www.moreincommon.com/media/4qefbsy5/more-in-common-the-new-normal-the-netherlands-en.pdf

victims and taking high risks that could have endangered the most vulnerable members of society[332].

To conclude, the Netherlands' political strategy against the COVID-19 pandemic, self-labeled as "intelligent lockdown", will be remembered for its liberal approach in "treating citizens like adults"[333] and counting on self-responsibility to encourage compliance, while opting for the high-risk strategy of slowly allowing the build-up of a herd immunity.

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[333] More in Common. (n.d.). The Impact of COVID-19 on Dutch Society. Retrieved from April 28, 2023, from: https://www.moreincommon.com/media/4qefbsy5/more-in-common-the-new-normal-the-netherlands-en.pdf

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Portugal: Country Report of COVID-19 Government Responses by Clara Fochler

Introduction: The COVID-19 Crisis in Portugal

Portugal exhibited an excess mortality rate comparable to the worst performing countries in the European Union (Peralta-Santos et al., 2021). Interestingly the country was rather successful in dealing with the virus in the early stages of the pandemic but failed to adapt to the epidemiological situation in the later stages, this raises the question of how and why this negative change occurred. This country report argues that this question can be answered in part by the government's rapid response even before the first COVID-19 incidents in the country, great political acceptance for the measures implemented, followed by a relaxation of measures in part due to a high vaccination coverage (Mathieu et al., 2021). In so far, Portugal had an advantage compared to its South-European neighbors, Italy and Spain, due to its relatively late COVID-19 pandemic outbreak in the country (Peralta-Santos et al., 2021).

This advantageous initial situation furthermore consisted of the policy measures being met with great acceptance among the population (Peralta-Santos et al., 2021), even before a stark increase in infection rates.

However, after the initial wave, Portugal experienced a decline in its advantageous initial situation, which was characterized by a decrease in public awareness, a relaxation of policy measures, and a lack of rapid response to the trend of infection. As a result, the country faced severe outbreaks and higher mortality rates (Peralta-Santos et al., 2021). It has been suggested that some COVID-19 measures were neglected due to economic interests (Peralta-Santos et al., 2021).

Below, the report discusses the impact of the change of Portugal from being one of the last during the first wave to being one of the first countries with COVID-19 outbreaks during the second wave. The report also examines how public acceptance of COVID-19 measures evolved and how the economic factors influenced policy actions.

To this end, the report discusses the political and social discourse in the following section. Subsequently, it then analyzes Portugal's policy response using the CoronaNet dataset. This analysis focuses on the timing of the government's centralized response to the pandemic and the impact corporate interests may have had on the government's policy response.

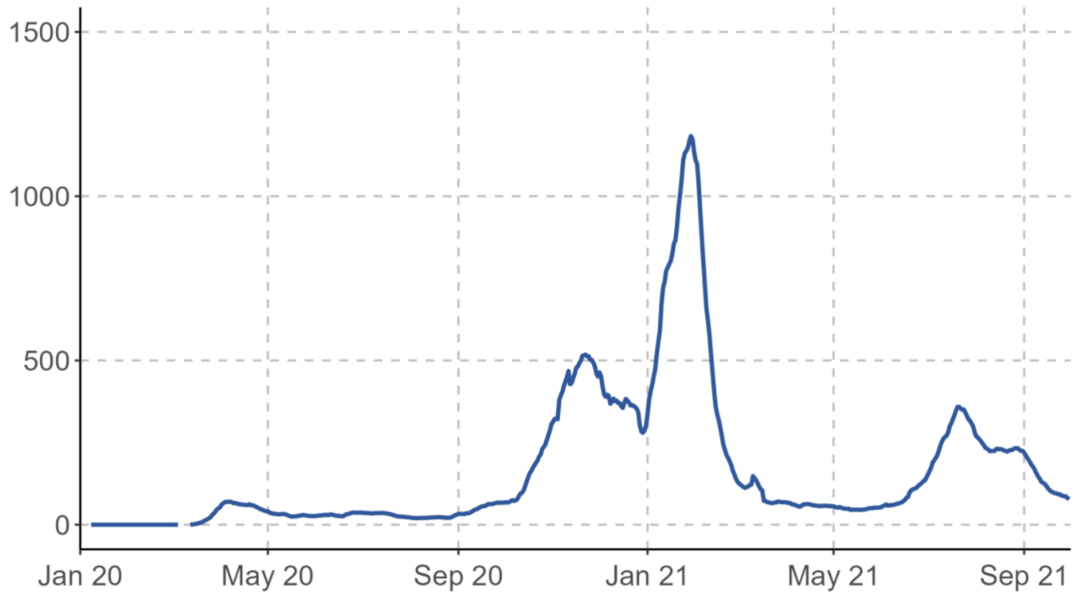

Figure 24: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Portugal.[334]

According to Figure 24, Portugal experienced four COVID-19 waves from February 2020 until October 2021. For the purpose of this analysis the second and third wave will be considered as one, due to their timely proximity. The third wave was followed by a great willingness to be vaccinated, which is why the fourth wave started with better preparation and is therefore not considered further. The following chapter will examine how government policies and public discourse first shaped the policy response to the pandemic with reasonable caution and measures to protect people in Portugal from the virus, and the underestimation of the danger after the first wave, which ultimately led to the second COVID-19 wave in Portugal, which was the worst in terms of number of cases and deaths.

The timing and intensity of the policy response to these waves not only had a significant effect on the country's public health, but also its public and political discourse, as I elaborate on in the following.

During the initial phase before and during the first COVID-19 wave, the central government responded rapidly and well-prepared, while the public was highly aware and

[334] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

ready to take action to contain the spread of the virus. The first cases of COVID-19 were detected on March 2, 2020, relatively late compared to other European countries (Silva et al., 2021), where cases had occurred at least one month earlier (Spiteri et al., 2020). The government reacted quite early to outbreaks by taking measures to combat the spread of the virus and inform the public about it .

Indeed, just ahead of the surge in cases in the period leading up to March 7, 2020, the government took steps to combat the ongoing spread of the COVID-19 virus in preparation for the coming crisis by informing the public about the virus and and making it mandatory for public institutions to create an emergency plan for a COVID-19 outbreak in their facilities (European Union Agency for Fundamental Rights, 2020).

Afterwards, authorities sought to prepare the health system with army resources and personnel (European Union Agency for Fundamental Rights, 2020). The government discourse during this period focused on informing the public about COVID-19 and the reasoning behind their policy response, as public concern was widespread due to media reports of outbreaks in neighboring Italy and Spain (Peralta-Santos et al., 2021).

From March 2, 2020 the government implemented more and more restrictive measures (European Union Agency for Fundamental Rights, 2020) to protect society from the threat of a global pandemic, like the declaration of a state of emergency on March 18, 2020, followed by consideration and implementation of measures to mitigate the social impact. Cordeiro-Rodrigues (2020) argues that some of the COVID-19 measures, which had the secondary goal of mitigating inequalities, increased Portugal's capacity to respond to the pandemic, by increasing the use of the health system by disadvantaged groups. This potentially increased the overall acceptance of policies across all segments of the population. Groups that do not normally have health insurance, such as irregular migrants, were granted temporary access to such facilities by the government, leading to greater use of the healthcare system. Reducing the number of inmates to prevent virus spread among the prison population led to a decrease in outbreaks in these facilities. Increasing support services for victims of domestic violence, including removing social distancing rules for victims, has increased acceptance of policies (Cordeiro-Rodrigues, 2020). This helped to ensure that political measures were not only initiated early enough to avert greater harm to the population, but also that the general population found acceptance for the measures and responded to them with the necessary awareness.

Further adjusting the policy response to the increasing fear of COVID-19 among civil society, the government took measures that led to a nationwide state of emergency starting on March 18 (Filipe et al., 2022), although no action was recommended by the

National Public Health Council, which was mandated to assess the situation (Peralta-Santos et al., 2021). The centralized political structure in Portugal in combination with financial and administrative flexibility created during the COVID-19 pandemic, allowed for a quick response without a need for reaching consensus among many different actors (European Union Agency for Fundamental Rights, 2020). In the following days, more measures followed, limiting social contacts by prohibiting mass gatherings, dentist visits, and consumption of alcohol in the public as well as the introduction of border controls (Silva et al., 2021). Additionally, citizens had already started to take self-protective measures by isolating themselves at home to avoid getting COVID-19 (Peralta-Santos et al., 2021).

Starting May 2, 2020, Portugal initiated the process of lifting the state of emergency in order to limit the economic impact on the country, however, this was accompanied by measures to monitor case numbers and keep the possibility for highly affected regions to declare a health emergency status once case numbers increased drastically (Silva et al., 2021).

Even though acceptance of policies in Portugal remained high, it dropped with the beginning of the relaxation of measures shortly after the first wave (Peralta-Santos et al., 2021).

In mid-September 2020, the number of infections increased again slowly, but in the following two months, COVID-19 began to spread more widely (Filipe et al., 2022). As a result of this trend, Portugal again declared a state of emergency November 9, 2020 (Filipe et al., 2022), but this policy response only followed after major outbreaks in the country. Peralta-Santos et al. (2021) argue that Portugal had the advantage of being the last southern European country affected by rising case numbers during the first wave, however the country was not as well prepared at the start of the second wave as it was for the first (Peralta-Santos et al., 2021) and may have started implementing measures to flatten the curve too late compared to the first wave, where policies were already implemented before a stark rise in infections. The further increase in COVID-19 infection levels after a short downward trend can also be traced back to the relaxation of measures during the Christmas holidays in 2021, which led to higher case numbers and the second COVID-19 wave at the beginning of 2021, which was the worst one (Filipe et al., 2022). In addition to a late policy response, concern over the virus during the Christmas holidays among the population decreased. This overall shift towards lesser COVID-19 preparedness and awareness is noteworthy when examining the COVID-19 situation during the Easter holidays of 2020. While the government emphasized the need for social distancing and other COVID-19 measures during the Easter holidays to keep case numbers low (Centre for Social Studies, 2020), measures were lifted during the Christmas holidays (Filipe et al., 2022) and social gatherings were allowed to occur. In contrast to Portugal's strict policy response toward previous outbreaks, the government implemented relatively less strict measures during this wave due to increasing concerns about their effect on the business and tourism sectors (Peralta-Santos et al., 2021). Combined with the decreasing fear in the population of the second and third wave and a late policy response, this marked the beginning of the most intense waves in Portugal to date in terms of deaths[335]. During this second and third wave, the country was hit even harder by the pandemic than during the previous wave (Filipe et al., 2022). After the third COVID-19 wave, approximately 90% of the population was vaccinated by October 1, 2021[336]. A study conducted by Soares et al. (2021) found that just before the second wave of COVID-19 vaccinations, revealed that many citizens were still hesitant to be vaccinated (Soares et al., 2021), suggesting that the success of the high vaccination rates may have been due to the fear that arose after the severity of that COVID-19 wave rather than the government's vaccination campaigns.

After only a month and a half of stringent measures and a state of emergency following the third wave, Portugal's opening strategy began on May 2, 2021, which largely aimed to return to pre-pandemic conditions. (Peralta-Santos et al., 2021, Filipe et al., 2022).

COVID-19 policy response

Portugal's COVID-19 response was characterized by its centralized decision-making structure and the financial and administrative flexibility the government enjoyed during the Covid 19 pandemic (European Union Agency for Fundamental Rights, 2020). During periods of high infection rates in the population, Portugal's central government was able to enforce strict mandatory measures across the entire country, which gave it an advantage over its neighbors Italy and Spain, which faced similar economic problems but with federal systems (Peralta-Santos et al., 2021). Despite the economic interest

[335] World Health Organization. (2023). Portugal: WHO Coronavirus Disease (COVID-19) Dashboard With Vaccination Data. Retrieved April 27, 2023, from: https://covid19.who.int

[336] Kottasová, I. (2021, October 1). They have all the vaccines they need, but these EU nations are still miles behind their neighbors. *CNN*. Retrieved April 27, 2023, from: https://www.cnn.com/2021/10/01/europe/eastern-europe-vaccine-takeup-bulgaria-romania-intl-cmd/index.html

remaining important even when infection rates were high, Portugal implemented policies that limited the spread of the virus, as evidenced by two aspects of its policy response to COVID-19: 1) fewer mandatory measures for business regulation, especially during the second and third wave, and 2) a difference in the number of mandatory policies between the start of the first and the beginning of the second wave.

To analyze the effectiveness of the measures implemented by the Portuguese government, data from the CoronaNet Research Project (Cheng et al., 2020) was used. Comparing the number of different policies implemented during the two periods (see Figure 25 and Figure 26), it is evident that more regulations were introduced for companies during and before the first wave as opposed to the second and third waves. While increasing progress on COVID-19 vaccines led to this new category of measures for the second period, policies focused on addressing contact restrictions, with public awareness campaigns being one of the most prominent policy categories together with Restrictions and Regulations of Schools. This shift may have been due to the public undertaking fewer self-isolation measures compared to the first COVID-19 wave and therefore, resulting in a need for policy response in this area.

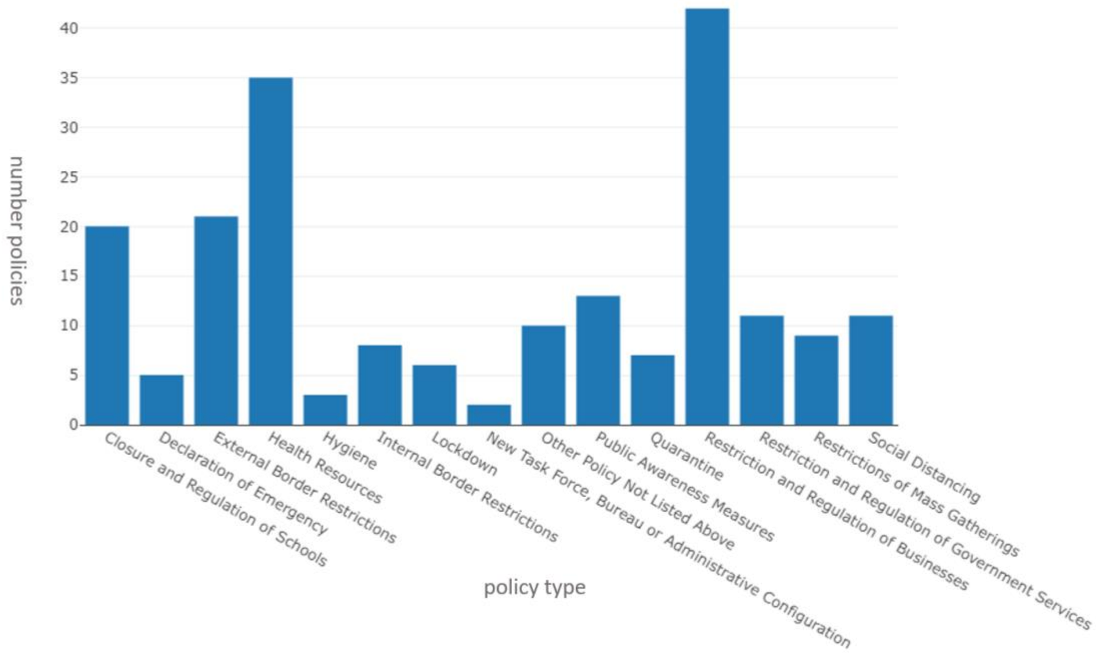

Figure 25: Number of Mandatory Policies by Policy Type during and before the First Wave in Portugal (December 31, 2019, until May 1, 2020) (Source: Cheng et al., 2020)

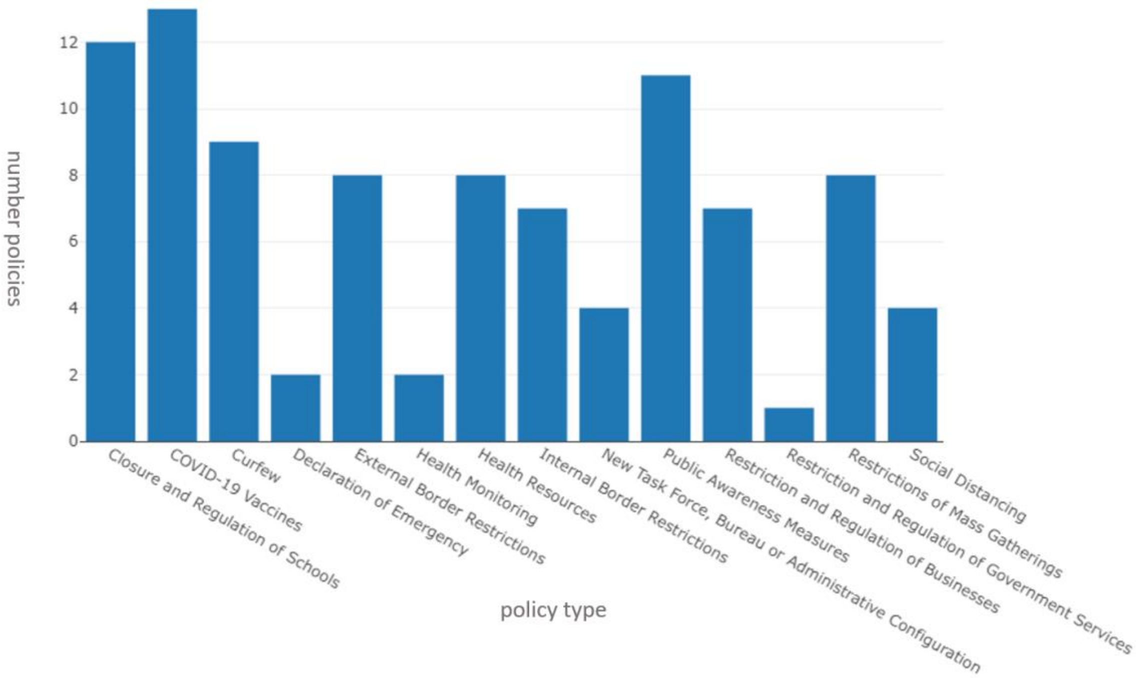

Figure 26: Number of Mandatory Policies by Policy Type during and before the Second and Third Wave (September 1, 2020, until February 20, 2021) (Source: Cheng et al., 2020)

When comparing the number of mandatory measures implemented in both time periods, and particularly at the beginning of the COVID-19 waves (see Figure 27 and Figure 28), it is apparent that more mandatory measures were implemented per day at the beginning of the first wave.
The second period did not see a response as quick as the first with regards to the increase in case numbers, fewer policies were implemented per day (see Figure 28, red line), additionally more mandatory responses were added sporadically.
The sum of mandatory policies implemented before the first and second wave show that Portugal responded later to COVID-19 outbreaks before the second wave than to the ones before the first wave, which impacted its ability to flatten the infection curve before widespread outbreaks occurred. The types of policies implemented suggest that economic interests may indeed have successfully overcome some COVID-19 restrictions for their benefits, but as policies restricting this sector were still implemented, it does not seem as if they stood above the public health interest.

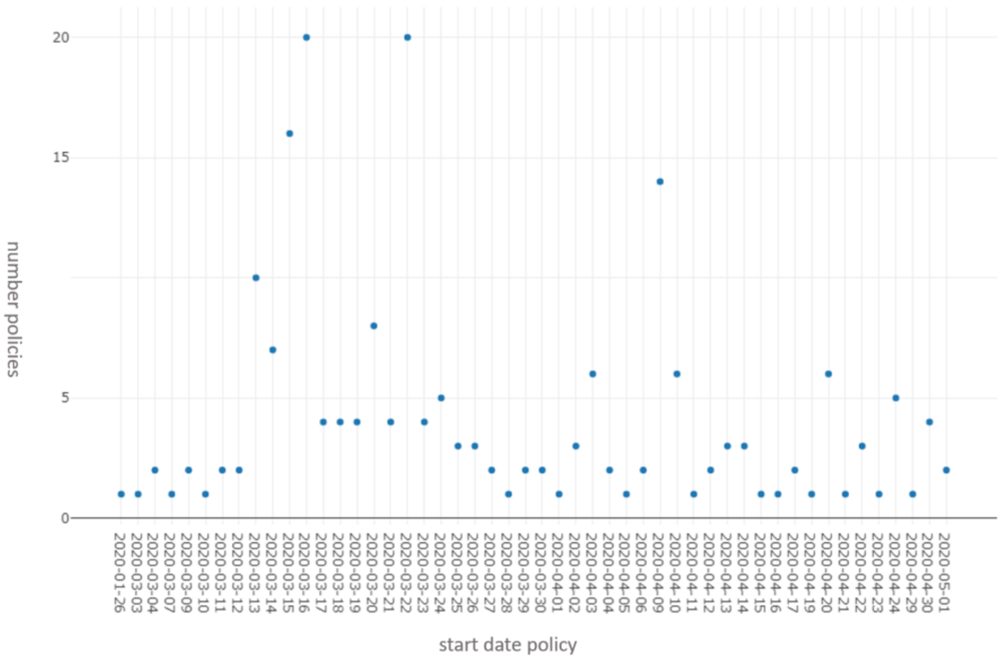

Figure 27: Number of Mandatory Policies over Time before and during the First Wave

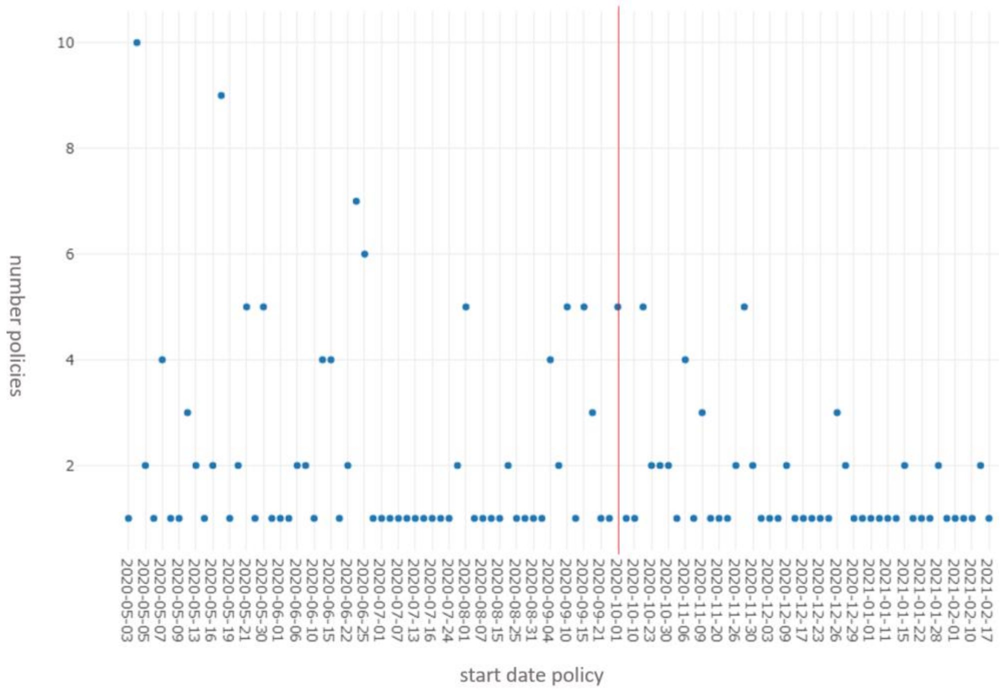

Figure 28: Number of Mandatory Policies over Time after the First Wave and the Beginning of the Second and Third Wave (Source: Cheng et al., 2020)

Conclusion

Portugal's management of the COVID-19 pandemic started off rather successfully during the first wave, but the country struggled to limit the effects of the pandemic in the later stages. One factor that positively influenced this effect was the widespread concern about COVID-19 and the acceptance of measures by the population early on. However, this report has attempted to highlight the impact of losing the advantage of being last and becoming one of the first countries to experience infection waves, as was the case in Portugal. Portugal's late response to the rising infection curve and the low level of restrictions on businesses, in contrast to the stringent measures needed, affected the country's ability to mimic the government's successful rapid response during the first COVID-19 wave in subsequent waves. In addition, as the number of infections rose, the population became less concerned and more weary of COVID-19 measures, which further diminished Portugal's success in managing the pandemic.

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Spiteri, G., Fielding, J., Diercke, M., Campese, C., Enouf, V., Gaymard, A., Bella, A., Sognamiglio, P., Sierra Moros, M. J., Riutort, A. N., Demina, Y. V., Mahieu, R., Broas, M., Bengnér, M., Buda, S., Schilling, J., Filleul, L., Lepoutre, A., Saura, C., … Ciancio, B. C. (2020). First cases of coronavirus disease 2019 (COVID-19) in the WHO European Region, 24 January to 21 February 2020. Eurosurveillance, 25(9). https://doi.org/10.2807/1560-7917.ES.2020.25.9.2000178

Slovakia: Country Report of COVID-19 Government Responses by Xiatian Ye

Introduction

Slovakia, a small Central European country, has faced significant challenges in managing the COVID-19 pandemic. While the government's response in the first wave was effective in containing the virus, with a total of 2292 confirmed cases as of July 2020 and a rate of 42 cases per 100,000 people[337], subsequent waves were met with criticism for their chaotic and ineffective management, resulting in a healthcare emergency in the country[338]. Furthermore, the purchase of the Russian-made Sputnik V vaccine was met with further skepticism and controversy, leading to the resignation of Prime Minister Igor Matovič. In sum, while the government's response to the pandemic in Slovakia was marked by initial success, its later response was marked by a series of failings.

The pandemic has also exposed the vulnerabilities of Slovakia's healthcare system, which has resulted in a relatively low vaccination rate compared to other European countries, such as Germany, where the vaccination rate has surpassed 75% of the population. However, in Slovakia, the vaccination rate has never exceeded half of the population. The slow pace of the vaccination campaign can be attributed not only to the country's underfunded healthcare system but also to vaccine hesitancy, which refers to people's reluctance to receive available and recommended vaccines (Machingaidze & Wiysonge, 2021).

This report presents an overview of the COVID-19 pandemic in Slovakia, including the government's responses to the three waves of the virus. Additionally, it focuses on two power shifts of the government and the reasons behind the slow vaccine campaign, including the impact of Slovakia's healthcare system and vaccine hesitancy.

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[337] WHO. (2020, July 20). *WHO Coronavirus (COVID-19) Dashboard*. World Health Organization. Retrieved April 27, 2023, from https://covid19.who.int
[338] Verseck, K. (2021, January 3). COVID-19: Slovakia mired in chaos. *DW Made for Minds*. Retrieved April 27, 2023, from: https://www.dw.com/en/covid-19-slovakia-mired-in-chaos/a-56740390

Epidemiological waves

Slovakia has experienced three waves of COVID-19. A first wave of COVID-19 outbreaks in Slovakia was well controlled by mid-July 2020. Compared with other European countries, Slovakia had fewer than 200 weekly infected cases until mid-July 2020 around the end of the first wave, while Italy had over 1500 weekly infected cases at the same time (see Figure 29)[339]. Its initial success in doing so can be explained in part by the Slovak's government's ability to move relatively quickly in implementing pandemic regulations and restrictions. For instance, to expand its public awareness and communication resources, the Slovak Ministry of Health established the COVID-19 hotline on January 29th 2020. One month later, on 27 February 2020, the Security Council announced its first concrete pandemic measures, including health status border controls at all Slovak airports and selected border crossings, particularly at the Austrian border (Nemec, 2020).Citizens and tourists who entered Slovakia were required to file health reports and have a body temperature check at the border. Furthermore, Slovakia declared its initial state of emergency on March 15, 2020. This involved implementing measures such as prohibiting international travel, closing schools, and enforcing mandatory quarantine for people entering the country (Cheng et al., 2020).

Figure 29: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Slovakia.[340]

[339] WHO. (2020, July 20). *WHO Coronavirus (COVID-19) Dashboard*. World Health Organization. Retrieved April 27, 2023, from https://covid19.who.int
[340] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

Despite these strict measures, a second wave of COVID-19 outbreak emerged only two months after many experts announced Slovakia's anti-pandemic success[341] [342] [343](Nemec, 2020). Indeed, a second wave of COVID-19 outbreaks occurred around September 2020 and in time, would lead to a catastrophic number of COVID-19 cases. By January 2021, the number of infected cases reached an all-time high of around 20,000 people per week[344]. The government responded by implementing a second wave of policies that restricted people's movements, business activities, education, and work. In addition, the Slovakia government announced the second state of emergency on 1st October 2020. This state of emergency was extended several times until May 2021, when the new cases from the third wave of COVID-19 outbreaks have declined steadily (Cheng et al., 2020).

The third wave began in February 2021, with a peak of 9,343 new daily cases reported on March 4, 2021. This time, the government responded with not only relatively stricter measures compared to the first and second waves, but also a nationwide testing campaign that offered free antigen tests to the entire population. The campaign was widely regarded as a success, insofar as it managed to test 3.6 million people, approximately 65.7% of the total population of around 5.5 million, in just two days[345]. Moreover, the government implemented its most stringent curfew on March 3rd, 2021, starting at 8:00 pm and lasting until 1:00 am the following morning. This policy remained in effect until April 27th, 2021, when the curfew time began at 9:00 pm instead of 8:00

[341] Kottasová, I., & Etzler, T. (2020, November 2). Slovakia tested most of the country in two days. Here's how they did it and what they found. *CNN*. Retrieved April 27, 2023, from: https://www.cnn.com/2020/11/02/europe/slovakia-mass-coronavirus-test-intl/index.html
[342] Hrabovská Francelová, N. (2021,March 30). News digest: Prime-ministerial swap is on. Matovič out, Heger in. *Spectator*. Retrieved April 27, 2023, from: https://spectator.sme.sk/c/22628662/news-digest-prime-ministerial-swap-is-on-matovic-out-heger-in.html
[343] Walla, K. (2020, April 8). Slovakia looks towards an end to COVID-19's painful isolation. *Atlantic Council*. Retrieved April 27, 2023, from: https://www.atlanticcouncil.org/blogs/new-atlanticist/slovakia-looks-towards-an-end-to-covid-19s-painful-isolation/
[344] WHO. (2021, January). *WHO Coronavirus (COVID-19) Dashboard*. World Health Organization. Retrieved April 27, 2023, from https://covid19.who.int
[345] Kottasová, I., & Etzler, T. (2020, November 2). Slovakia tested most of the country in two days. Here's how they did it and what they found. *CNN*. Retrieved April 27, 2023, from: https://www.cnn.com/2020/11/02/europe/slovakia-mass-coronavirus-test-intl/index.html

pm (Cheng et al., 2020). These measures proved effective, as they significantly reduced the number of daily cases to 42, allowing the government to lift the state of emergency[346].

Overall, at the onset of the first outbreak, the government responded swiftly with a series of regulations and restrictions. However, the swift reactions of the Slovakian government in controlling the spread of the virus during the first wave of the COVID-19 pandemic have been criticized by experts for wasting the "rally 'round the flag" effect (Turska-Kawa et al., 2022). This effect is a political phenomenon where a leader's popularity and public support increase during times of crisis, such as during a war or a natural disaster, with the public uniting behind the leader. In Slovakia, the decisions regarding COVID-19 made during the first year of the pandemic kept changing, leading to a loss of citizen's trust in the government (Turska-Kawa et al., 2022). The constant changes in restrictions made it extremely difficult for people to have a normal life (Kramarova et al., 2022). The Spectator reported that an unauthorized protest against COVID-19 measures turned violent in Bratislava, Slovakia, on October 17, 2020, with the protesters demonstrating against the government's pandemic-related restrictions[347].

Transition period between governments and positive impact of leadership

Slovakia initially garnered widespread media recognition for its exceptional success in containing the spread of COVID-19 in Europe during the first wave, particularly noteworthy given the confluence of a new government and the onset of the pandemic (Nemec, 2020). Prime Minister Peter Pellegrini was in office when Slovakia reported its first confirmed case of COVID-19 on March 6th, 2020, and was faced with limited time to prepare and respond to the crisis amidst the rapidly-spreading global outbreak. Nonetheless, the Pellegrini government was able to swiftly initiate a range of measures

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[346] WHO. (2021, April). *WHO Coronavirus (COVID-19) Dashboard*. World Health Organization. Retrieved April 27, 2023, from https://covid19.who.int

[347] spectator. (2020, October 18). *Unauthorized protest against COVID-19 measures turns violent in Bratislava*. Retrieved April 27, 2023, from: https://spectator.sme.sk/c/22512977/unauthorised-protest-against-covid-19-measures-turns-violent-in-bratislava.html

to address the pandemic, including the establishment of a COVID-19 hotline, the announcement of the first concrete measures in the fight against the COVID-19 pandemic and declared a state of emergency.

Shortly after the first confirmed case, a new coalition government led by Prime Minister Igor Matovic took over and continued the fight against COVID-19, implementing policies to control the virus's spread. The transition period was viewed positively by experts (Nemec, 2020), as both the outgoing and incoming governments prioritized the need to combat the pandemic over political disputes. The proactive approach of Prime Minister Pellegrini in the final days of his term in office, marked by the implementation of a comprehensive set of measures aimed at containing the virus, represented a departure from the typical political focus and highlights the importance of a shift towards a common goal during times of crisis.

However, the transition of power between Prime Minister Pellegrini and Igor Matovic was not the only leadership change that occurred during the pandemic. On March 30, 2021, Prime Minister Matovic resigned from his position. After his resignation, Eduard Heger became the new Prime Minister of Slovakia in April 2021. The second power transfer during the pandemic was triggered by a disagreement over the use of Russian COVID-19 vaccines. “I ask your forgiveness for all the mistakes I have committed” said by Matovic in his speech after resigning[348]. The Prime Minister at the time, Igor Matovic, negotiated a secret deal to import 2 million doses of Russia's Sputnik V vaccine without the approval of his coalition partners. This move was highly controversial, as the vaccine had not yet been approved by the European Union's regulatory agency. In addition, some members of the government were skeptical of the vaccine's safety and effectiveness. When the first batch of 200,000 doses arrived in Slovakia, they failed to be authorized by Slovakia's drug regulator, further exacerbating concerns and criticisms[349].

The controversy surrounding the use of the Russian COVID-19 vaccine ultimately led to the resignation of Prime Minister Matovic and the failure of the coalition government. In the aftermath of the Sputnik V crisis, four ministers of the Matovic government resigned

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[348] Hrabovská Francelová, N. (2021, March 30). News digest: Prime-ministerial swap is on. Matovič out, Heger in. *Spectator.* Retrieved April 27, 2023, from: https://spectator.sme.sk/c/22628662/news-digest-prime-ministerial-swap-is-on-matovic-out-heger-in.html

[349] Kalan, D. (2021, May 4). The Rise and Fall of Igor Matovic. *Foreign Policy*. Retrieved April 27, 2023, from: https://foreignpolicy.com/2021/05/04/slovakia-igor-matovic-resignation-coronavirus-pandemic-corruption/

from their posts. As one of the four parties in the coalition government, the SaS (Freedom and Solidarity) party openly criticized Matovic's leadership abilities during the challenging situation[350]. The Prime Minister's popularity also plummeted, with his approval ratings declining by almost 17 points since October. By April, Matovic had become the least popular member of the government, with almost 84 percent of the Slovakian population expressing their disapproval of him[351].

Slovakia's early success in managing the COVID-19 pandemic was a result of the Pellegrini government's swift and proactive approach. The peaceful transition of power to the Matovic government, which continued to prioritize pandemic response, was viewed positively by experts. However, the controversy surrounding the use of the Russian COVID-19 vaccine resulted in the resignation of Prime Minister Matovic and ultimately led to the failure of the coalition government. This highlights the importance of responsible decision-making by leaders during times of crisis and the potential consequences of divisive actions. While Slovakia's initial success may have been overshadowed by political turmoil, it serves as a reminder of the critical role of effective leadership and solidarity in combating a global pandemic.

Slow vaccination campaign and vulnerable healthcare system

Slovakia's vaccination campaign progressed at a slower pace compared to some other EU member states. In March 2021, the coalition government fell apart due to disagreements over the handling of the COVID-19 pandemic and Russian vaccine. As elaborated above, Eduard Heger was appointed as the new Prime Minister, leading a government with the same parties but with a different composition of ministers. Since becoming Prime Minister, Heger has focused on continuing the country's COVID-19 vaccination campaign. On 1st April 2021, the millionth vaccine was administered in Slovakia[352]. One month later, approximately 28% of the Slovak population had received

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[350] Hrabovská Francelová, N. (2021, March 17). The fate of the ruling coalition is in Igor Matovič's hands. *Spectator.* Retrieved April 27, 2023, from: https://spectator.sme.sk/c/22619504/the-fate-of-the-ruling-coalition-is-in-igor-matovics-hands.html

[351] Kalan, D. (2021, May 4). The Rise and Fall of Igor Matovic. *Foreign Policy*. Retrieved April 27, 2023, from: https://foreignpolicy.com/2021/05/04/slovakia-igor-matovic-resignation-coronavirus-pandemic-corruption/

[352] Hrabovská Francelová, N. (2021, December 26). Covid vaccination in Slovakia: What went wrong? (timeline). *Spectator.* Retrieved April 27, 2023, from:

at least one COVID-19 vaccine dose. However, in the following four months, the percentage of the population who had received at least one dose increased by less than 20%, and it never exceeded 50% of the population. In contrast, between May and September 2021, more than 30% of the German population had received at least one vaccine dose. By the end of September, the total number of vaccinated individuals in Germany had reached 69%, which slowly increased to approximately 77% the following months (Mathieu et al., 2021).

Slovakia's vaccination campaign was slow due to several factors, including the shortage of COVID-19 vaccines in the early months, less developed healthcare system and vaccine hesitancy. The main difference with other countries was the long-term underfunding of the healthcare system and infrastructure, which was the crucial factor that led to the insufficient vaccination campaign in Slovakia. According to the World Bank database, Slovakia's current health expenditure has consistently been 3% lower than the European average[353]. In 2019, Slovakia spent less than half the EU average on healthcare, with only 1,513 euros per capita. This low investment has lasted for years, and it has left Slovakia massive problems in its healthcare system. For example, Slovakia has one of the lowest numbers of doctors and nurses per capita in the European Union, especially nurses. According to the Country Health Profile by the Organization for Economic Cooperation and Development (OECD), the number of nurses has been declining since 2000. The shortage of healthcare professionals in Slovakia can be attributed to various factors, including an aging workforce, comparatively low salaries compared to neighboring countries, poor working conditions over time, and a low status of the profession (OECD & European Observatory on Health Systems and Policies, 2021).

In addition to the underinvestment in the healthcare system, the low vaccination rate in Slovakia can also be attributed to vaccine hesitancy. This hesitancy stems in part from a lack of trust in the government among the population, due to numerous corruption scandals involving government officials in recent years that have been reported by the

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https://spectator.sme.sk/c/22804783/covid-vaccination-in-slovakia-what-went-wrong-timeline.html

[353] *World Bank Open Data*. (n.d.). World Bank Open Data. Retrieved April 27, 2023, from: https://data.worldbank.org

media[354], including the Russian vaccine crisis led by Prime Minister Igor. Since 2020, dozens of high-ranking officials, including the former attorney general, and ex-chiefs of police and tax administration, have been brought to justice by Slovakian authorities.

Slovakia has implemented several measures to increase transparency in recent years. The most significant step was the establishment of the Public Procurement Office, which is responsible for overseeing public procurement processes and ensuring compliance with regulations. In addition to these measures, Slovakia has created a public register of beneficial owners of companies, which requires companies to disclose information about their ownership structure. This helps to prevent hidden ownership and increases transparency in the business sector. The government has also increased access to information by implementing freedom of information laws, allowing citizens to request information from public institutions[355]. Despite these efforts to increase transparency and accountability, corruption remains a significant issue in Slovakia, with high-profile cases of corruption and lack of trust in public institutions. This has eroded public trust in the government's ability to manage the vaccine rollout effectively and efficiently[356] [357].

The prevalence of misinformation during the COVID-19 pandemic in Slovakia has been identified as one of the contributing factors to vaccine hesitancy. Tkáčová's (2022) suggests that false claims about the effectiveness of treatments and vaccines were among the most common types of misinformation in Slovakia during the pandemic. These false claims included rumors that certain medications or natural remedies could cure or prevent the virus, creating doubts about the safety and efficacy of vaccines. Such doubts can fuel vaccine hesitancy, potentially leading individuals to forgo vaccination and thereby undermine public health efforts to control the spread of the virus. Moreover,

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[354] Hrabovská Francelová, N. (2021, December 26). How Slovakia failed to vaccinate its population. *Spectator*. Retrieved April 27, 2023, from: https://spectator.sme.sk/c/22804737/less-than-half-of-slovakia-vaccinated-what-went-wrong.html

[355] BTI. (2022). *BTI 2022: Slovakia*. Retrieved April 27, 2023, from: https://bti-project.org/en/reports/country-dashboard?isocode=SVK&cHash=41e2af26115602eb94e4092ac1779693

[356] Hrabovská Francelová, N. (2021, December 26). How Slovakia failed to vaccinate its population. *Spectator*. Retrieved April 27, 2023, from: https://spectator.sme.sk/c/22804737/less-than-half-of-slovakia-vaccinated-what-went-wrong.html

[357] Hudec, M. (2021, September 21). The fight against high-level corruption cleared by Slovakia’s new government, has lost some of its momentum. *Euractiv*. Retrieved April 27, 2023, from: https://www.euractiv.com/section/politics/short_news/the-fight-against-high-level-corruption-cleared-by-slovakias-new-government-composed-of-former-opposition-parties-has-lost-some-of-its-momentum/

the spread of misinformation about treatments and vaccines can erode public trust in healthcare institutions and professionals, further exacerbating vaccine hesitancy. Therefore, it is crucial to combat misinformation and promote accurate information from credible sources to address vaccine hesitancy and support effective public health measures.

Slovakia's COVID-19 vaccination campaign was slow due to a combination of factors, including a less developed healthcare system, vaccine hesitancy, and a shortage of vaccines in the early months. The long-term underfunding of the healthcare system has left Slovakia with major problems, such as a shortage of healthcare professionals, and contributed to the insufficient vaccination campaign. In addition, corruption scandals involving government officials and misinformation during the pandemic have eroded public trust in the government's ability to manage the vaccine rollout effectively and efficiently, further fueling vaccine hesitancy. To address these issues, it is crucial to increase investment in the healthcare system, combat corruption and misinformation, and promote accurate information from credible sources to support effective public health measures.

Conclusion

Slovakia has encountered a range of challenges in managing the COVID-19 pandemic, with varying opinions on the government's response. While some experts, like Nemec (2020) believe that Slovakia's initial response to the pandemic was successful, Turska-Kawa's et al (2022) argue that the government's irresponsible decisions have eroded people's trust in it and undermined the "rally 'round the flag" effect. The pandemic has also highlighted weaknesses in Slovakia's healthcare system, leading to a lower vaccination rate and contributing to vaccine hesitancy. Furthermore, the government's strict measures have had adverse effects on citizens and different economic sectors, prompting protests against COVID-19 policies. The two power transfers within Slovakia's government have also revealed a disordered political background to some extent.

To improve future pandemic responses, the government of Slovakia could consider implementing certain changes. For instance, it could prioritize effective communication and transparency with the public. This can help to establish trust and cooperation between the government and citizens, which in turn may lead to increased adherence to measures like wearing masks and practicing social distancing. Moreover, the government could provide support to sectors that have been severely impacted by the pandemic, such as tourism and hospitality, in order to minimize economic damage. Finally, the government may benefit from investing in strengthening the healthcare system to enhance its capacity to handle potential future pandemics.

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Spain: Country Report of COVID-19 Government Responses by Ömer Ucar

Introduction

Spain had its first confirmed COVID-19 case in one of its distant islands at the end of January 2020[358]. At the time, the incident was not perceived as a grave case, nor did it catalyze considerable action to be taken by the government to offset its effects. Be that as it may, with the case numbers escalating throughout Europe and the globe, Spain embarked on its management of the situation in March 2020.

This country report delves into the political and social dynamics of the COVID-19 pandemic in Spain, which was among the first countries to be hit by the virus. Starting from its onset in January 2020 up to the present situation, this report examines the measures taken by the country's government to contain the virus, while also touching upon its twofold approach. In addition, it provides an overview of Spain's performance in terms of infection rates, highlighting the strengths and weaknesses of its response to the pandemic.

COVID-19 policy responses

This section explores what policies Spain implemented in response to the COVID-19 pandemic. It first provides a brief overview of Spain's governmental structure and the policies it implemented more generally before discussing how these policy responses changed with respect to different waves of the pandemic.

The distinctive character of the Spanish case lies in its governmental structure, where we see how power is dispersed into several regions and layers of actors. According to the Regional Authority Index (Shair-Rosenfield et al., 2021), which annually evaluates the degree of self and shared-rule power held by regional governments within 96 nations, Spain's governmental mechanism is one of the most fragmented in the world, dating back to the Constitution of 1978, in which its 17 autonomous regions were vested with substantial powers (European Commission. Directorate General for Regional and Urban Policy., 2018). Consequently, each region is entitled to decide what specific measures to implement and formulate solutions to public issues, and this practice applied to the

[358] Linde, P. (2020, February 3). Spain confirms first case of Wuhan coronavirus. *EL PAÍS*. Retrieved April 27, 2023, from: https://english.elpais.com/international/2020-02-03/spain-confirms-first-case-of-wuhan-coronavirus.html

decision-making processes regarding COVID-19 as well. Indeed, in its battle against the pandemic, Spain implemented policies both at a national and subnational level.

We can draw on the data provided by the CoronaNet Project in order to gauge how the number of policies coming from each side compares to each other. The results exhibit that the number of provincial policies exceeds those of national ones, the former amounting to 2280 and the latter to 207. This does not come across as a surprise, as Spain relied predominantly on its autonomous regional governments during most of the pandemic, especially in the periods after the first wave. During the most intense first wave, nearly all policies were enacted at the national level.

When we take a further look at the policy types in general , we can realize that “restriction and regulation of businesses” and “restrictions of mass gatherings” are the highest in number. They are followed by other policy types “health resources”, “curfew”, “restriction and regulation of government services” and “internal border restrictions”. All these measures topping the list, excluding “health resources”, can be associated with Spain’s state of alarm announcement and the lockdown procedures thereby in the first wave of the crisis due to case numbers solemnly increasing each passing day. These policy types can be viewed as ancillary and complementary to the lockdown policy, as a full-scale lockdown entails the limitation of all activities precipitating physical contact in society.

Epidemiological waves and political developments

The severity of the pandemic is defined by phases called ‘waves’, which are contingent on the number of cases and death tolls. Spain went through four distinct waves from the onset of the pandemic until mid-2021, which can be seen in Figure 30, visualizing new cases daily.

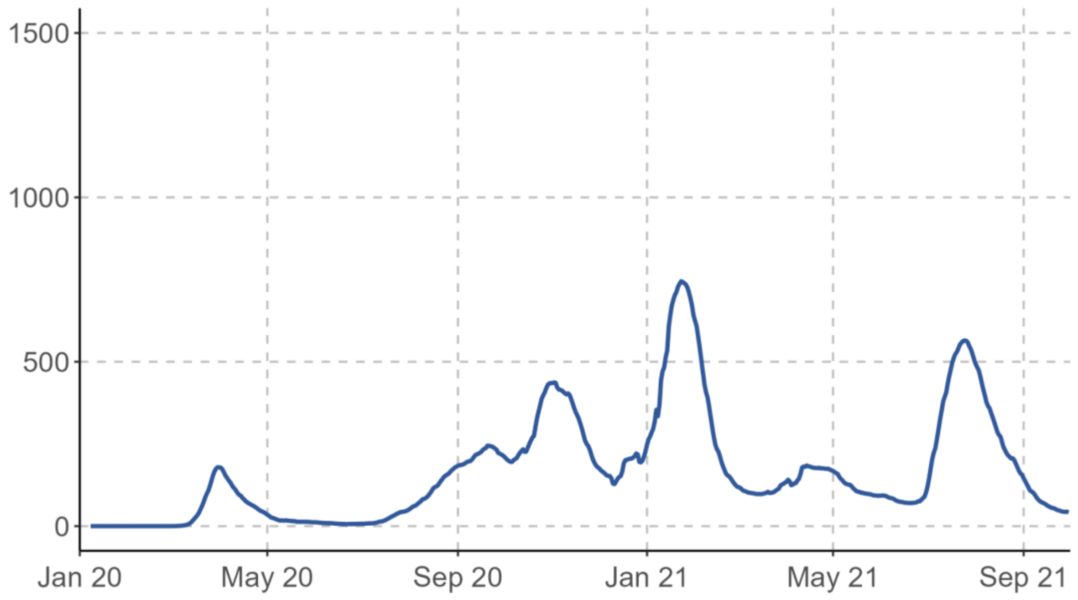

Figure 30: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Spain.[359]

The first wave

The first wave in Spain took off with the first imported case appearing on January 31, 2020, on the Canarian island of La Gomera, and went on until June 2020. At the beginning of this wave, the spread of the virus was not considered a public health threat, and the central government of Spain was rather aloof in its policy response. Indeed, following the detection of the initial cases in late January, precautionary action was mostly taken by the autonomous regions rather than the central government. For instance, in February 2020, around 700 tourists were put under quarantine in a hotel, as mandated by the Canary Islands government (Navarro and Velasco, 2022).

The first case of locally acquired COVID-19 was confirmed on 26 February 2020[360]. Subsequently, the disease started to be seen as a bigger threat and the administration in Madrid opted to close schools and universities on March 9. Whilst these measures were being taken by the regional administrations, the federal government was not

[359] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

[360] Carlos III Health Institute. (2020, February 11). Informes Anteriores Covid-19.Año 2020. *Isciii*. Retrieved April 27, 2023, from: https://www.isciii.es/QueHacemos/Servicios/VigilanciaSaludPublicaRENAVE/EnfermedadesTransmisibles/Paginas/Informes_Previos_COVID-19_2020.aspx

involved in any visible process to curtail looming cases, pointing to the tensions and the inadequate cooperation between the two early on (Royo, 2020).

That said, shortly after the World Health Organization declared COVID-19 a worldwide pandemic on March 11, the federal government ordered a state of alarm on March 14 and acted as the driving force behind completely revamping how the crisis was tackled. From this point onwards, the decision-making level shifted from local to central as the central government of Spain became the chief political actor while the autonomous regions' role was made more subservient. This allowed for a country-wide lockdown to be enacted on March 14, 2020[361], leading to all non-food stores, restaurants, bars, leisure venues, lodgings, and educational institutions being closed down (Navarro and Velasco, 2022). The law also required people to stay home and made exceptions only for essential activities such as heading to the supermarket or the pharmacy if need be. Although Spain had begun taking proactive action, the virus reached a peak, and the country's second-highest death toll was recorded in May 2020. With approximately 10% of the infected people deceased, the death percentage in Spain was right behind Italy, where the virus was taking the lives of 13% of the infected populace (Royo, 2020).
Moving forward, the government designed a four-phase de-escalation plan to relax the confinement measures, which was applied asymmetrically across the country, depending on the epidemiological situation in each region. The plan started in early May and was expected to last until late June when the country would reach the new normal. The de-escalation phase ended on June 21, 2020, when the state of alarm officially expired and Spain entered into the new normal[362]. Local governments were put under the limelight to handle policymaking in their regions throughout the summer. Although the surge of cases and deaths decelerated to some extent in the weeks to follow, this slight improvement was halted in the mid-summer of 2020 when the cases numbers bounced back to amounts closer to that of March.

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[361] Jones, Sam (2020, March 14). Spain orders nationwide lockdown to battle coronavirus. *The Guardian.* Retrieved April 28, 2023 from: https://www.theguardian.com/world/2020/mar/14/spain-government-set-to-order-nationwide-coronavirus-lockdown

[362] Mouzo, J., & Pontevedra, S. R. (2020, June 11). Spain prepares for next phase change of coronavirus deescalation plan. *EL PAÍS*. Retrieved April 27, 2023, from: https://english.elpais.com/society/2020-06-11/spain-prepares-for-last-phase-change-of-coronavirus-deescalation-plan.html

The second wave

Following an initially mild summer with low numbers, cases slowly rose in time and the second wave of the virus began in August 2020 when the case numbers commenced shooting upward again. In order to circumvent this spike in numbers, Spain introduced yet another state of alarm, in which the conditions were less severe than in the first wave, and the main course of action came in the form of an overnight curfew in all of Spain (Navarro and Velasco, 2022). Here, the central government in Spain stepped in once again and the character of decision-making took a turn toward centralism. However, according to Navarro and Velasco (2022), this second centralization attempt followed a lighter approach. Indeed, the government held each of the regions accountable for the implementation of the 'state of alarm' and did not remain the sole source of executive power. On this occasion, the regions could modify the policies to fit their needs, having the option to strengthen or relax them. In addition, it was in the hands of the autonomous regions to suspend intra or cross-border travels. The second wave came to an end in December 2020, marked by a significant decrease in daily new confirmed cases. Shortly thereafter, the national vaccination campaign against COVID-19 began on December 27, 2020[363].

The third and fourth waves

Briefly after these developments, the COVID-19 incidence rate in Spain reached a new peak, signaling a third wave in January 2021. Mainly playing out on account of Christmas holidays and family gatherings, this wave had different characteristics such as higher bed occupancy in hospitals and record-high death rates compared to the first two waves[364]. Though these developments gave the third wave a grim character, the introduction and distribution of COVID-19 vaccines were a game-changer. Starting from late December 2020, Spain established vaccination campaigns and the positive repercussions of this on case numbers were visible toward the end of this wave, e.g. nursing home deaths fell by 33%[365]. In the wake of a few months, the fourth wave emerged in April 2021. As reported by the Carlos III Health Institute, Spain started

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[363] Reuters. (2020, December 18). Spain to begin vaccinating against coronavirus on Dec. 27. Retrieved April 27, 2023, from: https://www.reuters.com/business/healthcare-pharmaceuticals/spain-begin-vaccinating-against-coronavirus-dec-27-2020-12-18/

[364] Sanitaria. (n.d.). Características de la tercera ola Covid-19 en España. *Redacción Médica*. Retrieved April 25, 2023, from https://www.redaccionmedica.com/recursos-salud/faqs-covid19/cuales-han-sido-las-caracteristicas-de-la-tercera-ola-covid-en-espana

[365] Ibid.

portraying a favorable epidemiological outlook, in which it had entered its stabilization phase concerning the incidence and case numbers[366]. Followingly, the second state of alarm put into force by the government back during the second wave was lifted in May 2021.

The public reaction to the government's COVID-19 measures in Spain was mixed and varied across regions and periods. The pandemic has brought to the forefront several existing issues in Spain, which have worsened as a result. One such issue is the strain placed on the national healthcare system due to the increased demand for public health, social services, and individual healthcare services, which has been exacerbated by austerity measures and budget cuts over the past ten years (Royo, 2020). Moreover, according to a study conducted by COVID-SCORE in June 2020, the public perception of the government response was measured to be low (White et al., 2021). The study found Spain to have a mean average COVID-SCORE of 44.68 out of a maximum of 100, one of the lowest scores across the 19 countries examined. The way some pandemic control measures implemented by the government, like communication, were perceived, differed greatly based on socio-demographic characteristics and whether or not individuals had been directly impacted by COVID-19. This suggests that there is room for improvement in customized approaches to the government's communication and management strategies, along with a need to strengthen essential healthcare and social services to safeguard the health and well-being of the population.

Conclusion & Discussion

Overall, Spain stands out as one of the worst-hit countries by COVID-19 in the European Union. In the period from January 2020 until October 2021, almost 5 million people were reported to be infected, and more than 88,000 people died from the virus in the country[367].

In the very beginning, the central government did not engage in proactive actions and failed to exercise sufficient attention vis-à-vis the transmission of the virus. Before the case numbers went into turmoil in March 2020, devolution of power to the regions could

[366] Hernández, C. (2021, April 9). Cuarta ola: España suma 10.875 contagios y la IA se sitúa en 182 casos. *Redacción Médica*. Retrieved April 27, 2023, from: https://www.redaccionmedica.com/secciones/sanidad-hoy/cuarta-ola-covid-incidencia-espana-casos-9528

[367] Mathieu, E., Ritchie, H., Rodés-Guirao, L., Appel, C., Giattino, C., Hasell, J., Macdonald, B., Dattani, S., Beltekian, D., Ortiz-Ospina, E., & Roser, M. (2020). Coronavirus Pandemic (COVID-19). Our World in Data. Retrieved April 28, 2023, from: https://ourworldindata.org/coronavirus

be seen in its fight against the virus, in parallel with the country's governing mechanism. Citizens accused the central government of being late to the game and acting without preparation[368]. In the first wave, with daily cases numbering 8,000, the situation became insufferable, and the central government intervened by instigating one of the strictest lockdowns in Europe. As a consequence, Spain reaped the benefits of its hands-on approach in the period following up to June, when daily reported cases fell to as low as 300 (Royo, 2020). As this gave the governing bodies the impression that the situation was under control, Spain resorted back to its decentralized approach in the summer, only to reencounter spiking case numbers. At the start of the second wave as a counteract, Spain introduced a lighter state of alarm alongside devolved governance within regions, which lasted until the middle of the third and fourth waves. The situation seemed to have entered a steady state subsequently.

[368] EFE. (2020, April 23). Spanish government criticised over handling of health crisis. *Euractiv*. Retrieved April 27, 2023, from: https://www.euractiv.com/section/coronavirus/news/spanish-government-criticised-over-handling-of-health-crisis/

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Sweden: Country Report of COVID-19 Government Responses by Ida Steineck Nilsson

Introduction

When COVID-19 first spread across Europe in the spring of 2020, Sweden gained international media attention for how its pandemic strategy placed a large emphasis on voluntary measures and the individual responsibility of citizens and businesses (Pierre, 2020). These lenient measures can be contrasted against the harsh lockdowns that were being imposed across different parts of the world, and Sweden's policy response stood out as relaxed even in comparison to its politically similar Scandinavian neighbors. However, by October 2020, Sweden's pandemic strategy became markedly more restrictive, placing it closer in line with the rest of Europe (Ludvigsson, 2023). Within the European context, Sweden's pandemic response is of interest for several reasons. Firstly, Sweden's public administration system affords a high degree of autonomy to administrative agencies (Petridou, 2020). Secondly, the Swedish case also illustrates the intricacies of coordinating a pandemic response in a highly decentralized healthcare and social care system. Finally, Sweden's shift from a less to a more restrictive pandemic response highlights how critical societal discourse can spur a government to re-think its original crisis management approach.

This country report covers the period between December 31, 2019, and October 1, 2021. During this time, Sweden experienced three main "waves" of heightened infection rates due to COVID-19 (see Figure 31). Societal discourse and the government's policy actions were closely tied to these changing epidemiological conditions. The first wave hit Sweden in mid-March 2020 and lasted until early June. After a summer of low community transmission, the cases increased dramatically from late October 2020. This second wave lasted until January 2021, but there was only a short period of respite before the cases shot up again for a third wave which lasted until the end of spring 2021. In late September there was evidence of a possible fourth wave, but policy actions associated with this phase are beyond the scope of this report. The country report first addresses the tone and content of Sweden's societal and political COVID-19 discourse throughout the three waves. Then, it moves on to detail the Swedish policy response to COVID-19 using the CoronaNet Research Project's data (Cheng et al., 2020). The country report concludes with a summary and assessment of Sweden's COVID-19 response.

Figure 31: Number of COVID-19 Cases per Million between January, 1, 2020, to October 1, 2021 in Sweden.[369]

Societal and political discourse about COVID-19

In this section, the report covers the societal and political discourse in Sweden concerning COVID-19, and also refers to how public trust in the government and health authorities developed over time. Firstly, it details public discourse during the first wave, wherein the Swedish Public Health Authority (PHA), which is the expert agency responsible for national-level public health issues,, set the tone for the public debate and general society was overwhelmingly supportive of the Swedish pandemic strategy. Then, the report moves on to describe how public discourse became politicized and more critical towards Sweden's COVID-19 strategy after the first wave when Sweden was left to grapple with how it had experienced far higher COVID-19-related death counts than its neighboring states.

The first wave

During the first wave, discussions regarding COVID-19 and Sweden's strategy were mostly held at the expert level, dominated by scientific voices from the medical community and expert administrative agencies (Johansson and Orla Vigsø, 2021). The

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[369] Source: WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

PHA was the dominant force in shaping news coverage and public discussion regarding COVID-19. From early March 2020, the PHA held daily press conferences about changes in the epidemiological situation and any new recommendations or guidelines they were planning to put into place. These press conferences received heavy domestic media coverage, and Anders Tegnell, who was the state epidemiologist and the public face of the PHA, practically became an overnight celebrity (Blach-Ørsten et al., 2023). The government and politicians were mostly silent in the public discourse beyond re-affirming the PHA's communication and the importance of individual responsibility, which is in line with a strongly rooted belief in Sweden that politicians should largely leave agencies alone to apply their expertise as they see fit (Jacobsson and Sundström, 2007). The central role of the Swedish strategy and the PHA did not receive wide-scale criticism in the wider public sphere during the first wave. Most of the first wave was characterized by a strong "rally around the flag" effect in general society, even though Sweden was experiencing comparably high COVID-19-related hospitalization and death rates[370]. Trust in institutions and the government soared (Johansson et al., 2023), and the PHA and the Social Democratic-led government received support from other political parties (Johansson and Vigsø, 2021). Similarly, the media largely framed both the Swedish strategy and Anders Tegnell in a positive light and presented them as having the appropriate scientific expertise to handle the crisis (Johansson and Vigsø, 2021). Criticism of the PHA and the government was typically limited to expert voices in the medical field[371] or workers' organizations pointing out unsustainable working conditions for essential workers in the healthcare sector[372]. Most notably, a group of 22 medical researchers published a scathing editorial in one of Sweden's most-read daily newspapers on April 14, 2020[373]. They questioned the PHA's expertise and demanded

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[370] Mathieu, E., Ritchie, H., Rodés-Guirao, L., Appel, C., Giattino, C., Hasell, J., Macdonald, B., Dattani, S., Beltekian, D., Ortiz-Ospina, E., & Roser, M. (2020). Coronavirus Pandemic (COVID-19). *Our World in Data*. Retrieved April 27, 2023, from: https://ourworldindata.org/covid-deaths

[371] Lundkvist, Å., Vahlne, A., Sandström, T., Gustavsson, Å., Frisén, J., Lundbäck, Å., Hanson, C., Marklund, S., Lötvall, J., Wahlin, A., & King, C. (2020, April 14). DN Debatt. "Folkhälsomyndigheten har misslyckats—Nu måste politikerna gripa in". *Dagens nyheter*. Retrieved April 27, 2023, from: https://www.dn.se/debatt/folkhalsomyndigheten-har-misslyckats-nu-maste-politikerna-gripa-in/

[372] Gustafsson Hedenström, M. (2020, April 17). *Kommunal kräver andningsskydd – Kommunalarbetaren*. Retrieved April 27, 2023, from: https://ka.se/2020/04/17/kommunal-kraver-andningsskydd/

[373] Lundkvist, Å., Vahlne, A., Sandström, T., Gustavsson, Å., Frisén, J., Lundbäck, Å., Hanson, C., Marklund, S., Lötvall, J., Wahlin, A., & King, C. (2020, April 14). DN Debatt. "Folkhälsomyndigheten har misslyckats—Nu måste politikerna gripa in". *Dagens nyheter*. Retrieved April 27, 2023, from: https://www.dn.se/debatt/folkhalsomyndigheten-har-misslyckats-nu-maste-politikerna-gripa-in/

that the government should step in and enforce heavier restrictions. However, many influential figures in the media landscape, such as journalists and social commentators, reacted negatively to these critical voices. Some researchers have argued that critical “dissident voices" were stigmatized (Simonsen, 2022, p. 227) and that the news coverage was overall “corona-nationalistic” in tone (Blach-Ørsten et al., 2023, p. 274).

Developments during summer 2020, the second wave, and the third wave

By the end of the first wave, it became clear that Sweden had fared far worse in terms of COVID-19-related death counts than its Nordic neighbors (see Figure 32). This had an impact on public opinion and the tone of public discourse. By the end of May 2020, the public discourse shifted away from being generally supportive of the PHA and the government towards becoming more critical. There was a general sense of dissatisfaction with Sweden’s performance across the political spectrum, with the oppositional parties on the right being especially harsh in their criticism. For example, during a televised party leader debate in early June 2020, the leader of the Christian Democrats accused the government of “deliberately [allowing] the virus to spread” (Dahlström and Lindvall, 2021, p. 19). Parliament demanded that the government should order an inquiry into the Swedish strategy, and the government subsequently announced the creation of the Corona Commission on June 20, 2020, which would be tasked with independently evaluating the Swedish COVID-19 response (Ludvigsson, 2020). These developments towards a more critical public discourse are also mirrored in public opinion polls. Between March 31, 2020, and mid-January, 2021, trust in the PHA decreased from 75% to 50% and trust in the government decreased from 64% to 30% (Warren et al., 2021).

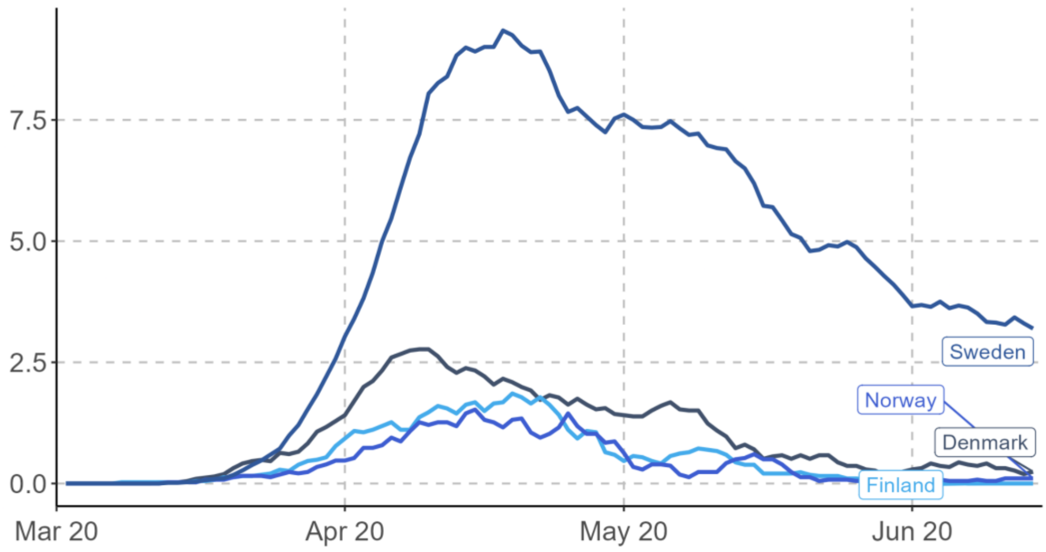

Figure 32: Daily new confirmed COVID-19 deaths per million people in Sweden[374]

Likely spurred by the negative reactions after the first wave, the Swedish government initiated stronger restrictions when cases once again started to rise in October 2020. For example, the number of people allowed at public gatherings was decreased to eight on November 16, 2020. Throughout spring and early summer of 2021, there were several highly publicized demonstrations against these harsher COVID-19 restrictions[375] [376]. However, it seems like these critical voices only constituted a loud minority. A national opinion poll conducted by Gothenburg University between March and June of 2021 found that only 5% of respondents thought that the COVID-19 restrictions had been too harsh, while 60% of respondents in fact believed that Sweden had not done enough in response to COVID-19[377]. Similarly, most of Sweden's political parties were supportive of the

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374 Mathieu, E., Ritchie, H., Rodés-Guirao, L., Appel, C., Giattino, C., Hasell, J., Macdonald, B., Dattani, S., Beltekian, D., Ortiz-Ospina, E., & Roser, M. (2020). Coronavirus Pandemic (COVID-19). *Our World in Data*. Retrieved April 28, 2023, from: https://ourworldindata.org/coronavirus

375 Asker, A. (2021, May 1). Hundratals deltog i covid-protester. *Svenska Dagbladet*. Retrieved April 27, 2023, from: https://www.svd.se/a/Ga9zj9/viten-mot-fyra-arrangorer-av-ny-demonstration

376 Salmaso, E., & Balcer Bednarska, J. (2021, March 6). Polisen upplöser demonstration mot coronarestriktioner. *SVT Nyheter*. Retrieved April 27, 2023, from: https://www.svt.se/nyheter/inrikes/polisen-upploser-demonstration-mot-coronarestriktioner

377 Carlander, A. (2022, March 11). *Undersökningen om coronaviruset*. SOM-institutet. Retrieved April 27, 2023, from: https://www.gu.se/som-institutet/resultat-och-publikationer/rapporter/som-undersokningen-om-coronaviruset

government implementing restrictive measures, and opposition parties made public and frequent demands that the government should take more action. The Moderate Party, which is Sweden's largest opposition party, for example, offered strong criticism of the government when signs of a possible third COVID-19 wave started to appear in February 2021. They argued that the government had been too passive and suggested that the voluntary recommendations to wear face masks in public transport should be a legal requirement[378].

One overarching aspect that helped to set the critical tone for this national discourse throughout the second and third waves was the publication of the Corona Commission's interim reports. The Commission published one report in December 2020 which focused on how the elderly care sector was impacted by the pandemic and another report in October 2021 which was an overall assessment of Sweden's disease prevention measures and the healthcare system (Ludvigsson, 2023). Both reports offered strong criticism on the high number of deaths in the elderly care systems and the lack of harsh restrictions during the first wave. The Commission's findings featured heavily in the media and were referenced by political actors in their criticism of the government and national agencies[379] [380] [381].

Sweden's policy response to COVID-19

In this section, the country report will provide an overview of Sweden's policy response to COVID-19. First, it addresses how Sweden's institutional context influenced the policy response throughout the pandemic. Then, the report will use the CoronaNet database to cover key COVID-19 policy actions which were made by the Swedish government and national agencies during the three waves.

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[378] Kristersson, U., & Svantesson, E. (2021, February 21). DN Debatt. ”Konkret handlingsplan krävs för att klara den tredje vågen”. *Dagens nyheter*. Retrieved April 27, 2023, from: https://www.dn.se/debatt/konkret-handlingsplan-kravs-for-att-klara-den-tredje-vagen/

[379] Nilsson, M. (2021, October 29). Kristersson: ”Regeringen dröjde orimligt länge med beslut”. *SVT Nyheter*. Retrieved April 27, 2023, from: https://www.svt.se/nyheter/inrikes/hallengren-hade-kunnat-gora-saker-annorlunda

[380] Sveriges Radio (2020, December 20). Hur påverkar coronakommissionen politiken?. Retrieved April 27, 2023, from: https://sverigesradio.se/artikel/7630860

[381] Wallberg, P. (2021, October 29). Åkesson: Ängslighet kostade över 15 000 liv. *Svenska Dagbladet*. Retrieved April 27, 2023, from: https://www.svd.se/a/g644p9/m-om-coronakommissionen-svidande-kritik

Institutional context

Sweden's COVID-19 response was heavily influenced by two key features of its public administration system. Firstly, Sweden is a unitary state with a political structure that is decentralized. This means that Sweden's regions and municipalities have a high degree of autonomy. Sweden's 21 regions are responsible for their healthcare systems, and the 250 municipalities hold the responsibility for providing elderly care and care homes to the population (Johansson and Vigsø, 2021). Some countries are able to centralize power to the national government during crises by declaring a national emergency, but the Swedish constitution only allows the government to declare a state of emergency during war (Pierre, 2020). Secondly, Sweden's national administrative agencies enjoy a high degree of autonomy. The government can issue guidelines and new responsibilities to these agencies, but the Swedish constitution forbids the executive branch from interfering in the agencies' decision-making process and recommendations in specific cases (Brommesson and Edström, 2021). As a result, the day-to-day activities of the agencies are mostly operationally independent from the government. This does not mean that the executive branch is always bound to follow all the recommendations that the agencies issue, but there is a long tradition of doing so due to a belief that public agencies make the most appropriate and evidence-based decisions (Petridou, 2020).

As a result of these administrative features, the executive government never sidelined the PHA from its usual responsibility of public health issues during the pandemic, nor enforced centralized control over areas that are normally handled at the local level by municipalities and the regions. Instead, a large portion of the government's actions consisted of coordinating the pandemic response on the national level. They commissioned the expert agencies to investigate possible new restrictions or develop guidelines which the regions and municipalities could then follow in their local pandemic response in the health and elderly care sectors (Brommesson and Edström, 2021). For example, vaccinations against COVID-19 fell under the regional authorities' healthcare responsibility, so on December 16, 2020, the government commissioned the PHA to aid the regions with the vaccination effort. The PHA was instructed to help spread information to the public about where to get vaccinated, as well as coordinating communication between the national and regional levels. Throughout the pandemic, several similar requests were also made to the National Board of Health and Welfare (NBHW), which is a national-level agency responsible for evaluating and developing recommendations for health and social care institutions. For instance, the government turned to the NBHW when municipalities and regions struggled to procure enough PPE for their patients and employees during the first wave. On April 29, 2020, the NBHW was therefore tasked with helping regions and municipalities to purchase and distribute protective equipment (Askim and Bergström, 2022).

The first wave

The PHA was the leading force in managing the national policy response to COVID-19 during the first wave. It provided recommendations for the national government, local authorities, and individual citizens (Johansson and Vigsø, 2021). The PHA took the actions it deemed necessary from an epidemiological standpoint and legally possible under the Communicable Diseases Act, where restrictive measures must be proportional and "based on science and proven experience"[382]. During the first wave, the government put the following major restrictions into place upon the request of the PHA: a ban on gatherings of over 500 on March 12 (which was later decreased to 50 at the end of March), and the closure of high schools and universities from March 18. The government also implemented a national ban against visits to elderly care centers, although this was less so on the direct behest of the PHA and more so because regional bans had already been put into place in Västra Götaland and Stockholm (Ludvigsson, 2020). However, when the visitation ban ended on September 1, 2020, this decision was taken in close cooperation with the PHA and the NBHW[383]. Overall, the pandemic strategy primarily relied on emphasizing that everyone in Sweden had a personal responsibility to limit the spread of COVID-19 rather than legally mandated restrictions. The PHA issued non-binding recommendations to businesses and the citizenry throughout the first wave, such as advising shopping centers to limit the number of visitors from April 1, 2020, and asking those aged over 70 to avoid social contact with others as much as possible from March 16, 2020.

Most of the restrictions were phased out by the summer, and the period of low community transmission between the first and second wave was accompanied by less policy action across most policy areas, except for the external border restrictions where the government was continually active in trying to limit the spread of disease from abroad

[382] Ministry of Health and Social Affairs. (2020, December 15). *Summary of SOU 2020:80 Elderly care during the pandemic* [Text]. Regeringskansliet; Regeringen och Regeringskansliet. Retrieved April 27, 2023, from: https://www.government.se/legal-documents/2020/12/summary-of-sou-202080-elderly-care-during-the-pandemic/

[383] Ministry of Social Affairs. (2020, September 15). *Besöksförbudet på äldreboenden upphör 1 oktober*. Regeringskansliet; Regeringen och Regeringskansliet. Retrived April 27, 2023, from: https://www.regeringen.se/artiklar/2020/09/besoksforbudet-pa-aldreboenden-upphor-1-oktober/

(see Figure 3). In summary, the policy response during the first wave was markedly more relaxed than that of Sweden's Scandinavian neighbors. By mid-March 2020, both Denmark and Norway had closed all educational institutions, while Sweden never ordered the closure of schools for children under 16 years of age. Similarly, Sweden's 50-person cap for public gatherings was far higher than the other Scandinavian countries, where the number of people allowed to gather was as low as five or ten during the first wave (Saunes et al., 2022).

The second and third waves

Once the second wave hit Sweden, the policy response started to move away from being relaxed in comparison to other European states. The administrative agencies were still dominating forces in determining the national policy response and non-binding recommendations remained a large part of the pandemic strategy, but the government also started to take more initiative than before. As the second wave hit Sweden in October 2020, some of the more restrictive policies were initiated by the government rather than upon the direct request of the PHA (Ludvigsson, 2020). This included a ban on selling alcohol in restaurants after 10 pm from November 11, 2020. The government and the parties in parliament were also interested in expanding the range of possible disease-prevention measures, which resulted in parliament passing a new pandemic law on January 10, 2021. This legislation gave the government additional powers to, for example, limit opening hours of businesses and mandate social distancing in shopping centers[384].

However, the government taking more of an active role in the COVID-19 policymaking process did not mean that the PHA was necessarily opposed to a less relaxed approach. The PHA remained a guiding force in the pandemic response, and it also started to issue more restrictive recommendations in response to the second and third waves. The PHA had been skeptical about the scientific merit of face masks during most of 2020, but from January 7, 2021, it started to recommend the use of face masks for those over 17 years of age during rush hours in public transport. Once community transmission started to increase again during the third wave, the PHA also took advantage of the new pandemic law and requested that the government implement a ban against shopping centers having more than 500 visitors at once from March 6, 2021. Thus, the government,

[384] Nordlund, F. (2021, January 8). Riksdagen röstar ja till ny pandemilag. *SVT Nyheter*. Retrieved April 27, 2023, from: https://www.svt.se/nyheter/inrikes/riksdagen-rostar-ja-till-ny-pandemilag

parliament, and public health authorities all seemed to have a broad aim of implementing harsher restrictions during the second and third waves.

Throughout 2021, the Swedish COVID-19 strategy also focused heavily on vaccination. The first person in Sweden was vaccinated against COVID-19 on December 27, 2020, and the vaccination efforts then proceeded across the entire country guided by prioritization guidelines developed by the PHA. By mid-June 2021, the third wave was over, and more than half of Sweden's adult population had received the COVID-19 vaccine[385]. Both these aspects contributed to the government and PHA relaxing the pandemic restrictions. For example, on July 1, 2021, the government removed regulations on how long restaurants could be open, and the number of people allowed at indoor events was increased from eight to 50.

Conclusion

In summary, the Swedish COVID-19 policy response was characterized by a reliance on expert agencies, voluntary recommendations, and decentralized health governance. The strategy was however dynamic over time, with the first wave being a major turning point for Sweden's overall approach. Sweden's high death and hospitalization rates were a catalyst for harsh criticism of the PHA and the government. In turn, the government became motivated to take a more active role in the pandemic response when the case numbers increased again after the summer of 2020. Voluntary recommendations were still a key part of Sweden's strategy, but the Swedish government imposed more legally mandated limitations on citizens' and businesses' day-to-day life throughout late 2020 and early 2021. At the same time, the government was still criticized by the political opposition for not going further in limiting the spread of COVID-19, and opinion polls reveal that similar sentiments were shared by the general public.

Even though the restrictions became harsher throughout the pandemic, Sweden still fared far worse than its Scandinavian neighbors in relation to COVID-19-related death counts. By the end of September 2021, Sweden's cumulative death count per million people was over three times higher than in Denmark, which was the second hardest-hit

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[385] Public Health Agency of Sweden. (2021, June 14). Över hälften av Sveriges vuxna befolkning har fått vaccin mot covid-19. *Folkhalsomyndigheten*. Retrieved April 27, 2023, from: https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2021/juni/over-halften-av-sveriges-vuxna-befolkning-har-fatt-vaccin-mot-covid-19/

Scandinavian state in terms of COVID-19 related deaths[386]. The Corona Commission attributed the high death toll to Sweden's high community transmission of COVID-19 and an overall failure to protect its elderly and vulnerable populations[387]. Sweden's high COVID-19 infection rates during the first wave meant that the virus quickly found its way into elderly care homes where the municipalities were ill-prepared to deal with increased staffing and PPE demands. As a result, many elderly care residents who were particularly vulnerable to the virus lost their lives to COVID-19. The Corona Commission argues that a more restrictive COVID-19 policy-making in the early days of the pandemic could have mitigated the number of deaths in the elderly care sector[388].

At the time, a faster policy response to COVID-19 was limited by Sweden's decentralized elderly care and healthcare systems. The PHA and the government could provide aid and recommendations to the healthcare and elderly care sectors, but most of the ultimate responsibility for preventative COVID-19 efforts was located on the municipal and regional levels. Before the COVID-19 pandemic, there was no clear oversight on the national level of how prepared the municipalities were for the demands of a potential pandemic crisis, and there was also a lack of clear channels of communication between local authorities and national-level agencies like the NBHW[389]. The difficulties that emerge from this problem can be illustrated by the municipalities' struggles with PPE during the early stages of the COVID-19 pandemic. Many municipalities did not have large enough stocks built up prior to the pandemic and therefore struggled to get hold of protective equipment that were suddenly very high in demand (Johansson and Vigsø, 2021). By the time the municipalities' issues with procuring PPE became known and the Swedish government commissioned the NBHW to assist them, the municipal elderly care facilities had already been hit hard by the first wave.

Finally, it is also possible to criticize the Swedish government for relying almost exclusively on the PHA for scientific expertise since that is a key reason why Sweden's policy response to COVID-19 was initially less restrictive than other countries. The COVID-19 pandemic thrust the world into an unprecedented situation where scientific

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[386] Mathieu, E., Ritchie, H., Rodés-Guirao, L., Appel, C., Giattino, C., Hasell, J., Macdonald, B., Dattani, S., Beltekian, D., Ortiz-Ospina, E., & Roser, M. (2020). Coronavirus Pandemic (COVID-19). *Our World in Data*. https://ourworldindata.org/covid-deaths

[387] Ministry of Health and Social Affairs. (2020, December 15). *Summary of SOU 2020:80 Elderly care during the pandemic*. Regeringskansliet; Regeringen och Regeringskansliet. Retrieved April 27, 2023, from: https://www.government.se/legal-documents/2020/12/summary-of-sou-202080-elderly-care-during-the-pandemic/

[388] Ibid.

[389] Ibid.

evidence of how to best avoid adverse social and economic consequences was scarce. While many countries introduced lockdowns as a precautionary measure during these conditions of intense uncertainty, the PHA remained skeptical of unproven intrusive measures (Formgren et al., 2022; Nordgren, 2023). Already prior to the pandemic, the PHA had also expressed doubt about the effectiveness of non-medical pandemic interventions such as total lockdowns (Dahlström and Lindvall, 2021). Since the government almost completely deferred to the PHA, the views of the PHA came to form the basis of the early Swedish COVID-19 strategy. When voices in the medical research community started to advocate for a more restrictive approach, the Swedish government and the PHA could have taken these diverging views into account and adjusted the overall strategy. The Corona Commission took a similar position and suggested that a "precautionary principle" should guide Swedish crisis management going forward, meaning that there should be a greater readiness to take drastic precautionary action even if there is no established evidence that the actions will be effective[390].

[390] Ibid.

Askim, J., & Bergström, T. (2022). Between lockdown and calm down. Comparing the COVID-19 responses of Norway and Sweden. Local Government Studies, 48(2), 291–311. https://doi.org/10.1080/03003930.2021.1964477

Blach-Ørsten, M., Jönsson, A. M., Jóhannsdóttir, V. A., & Guðmundsson, B. (2023). The role of journalism in a time of national crisis: Examining criticism and consensus in Denmark, Iceland, and Sweden during the Covid-19 pandemic. https://doi.org/10.48335/9789188855688-12

Brommesson, D., & Edström, Z. (2021). *Coronapandemin och de upplevda styrningsproblemen: det svenska fallet i nordisk jämförelse*. Lunds universitet, Samhällsvetenskapliga fakulteten.

Cheng, C., Barceló, J., Hartnett, A. S., Kubinec, R., & Messerschmidt, L. (2020). COVID-19 Government Response Event Dataset (CoronaNet v.1.0). *Nature Human Behaviour, 4(7)*, 756–768. https://doi.org/10.1038/s41562-020-0909-7

Dahlström, C., & Lindvall, J. (2021). Sweden and the COVID-19 Crisis. *Working paper series 2021:9.* University of Gothenburg, The Quality of Government Institute.

Formgren, L. A., Boin, A., Ekengren, M., Engström, A., Luesink, M., Rhinard, M., Shields, H., & Vashishtha, S. (2022). Orsakerna till EU-ländernas skilda hantering av Covid-19-krisen: En forskningsagenda för jämförande studier. Statsvetenskaplig tidskrift, 124(1), Article 1. https://journals.lub.lu.se/st/article/view/24090

Jacobsson, B., & Sundström, G. (2007). Governing state agencies: Transformations in the Swedish administrative model. *ECPR Conference in Pisa, 6 – 8 Sept, 2007*. Retrieved April 28, 2023, from: https://www.regulation.upf.edu/ecpr-07-papers/bjacobsson.pdf

Johansson, B., & Vigsø, O. (2021). Sweden—Lone hero or stubborn outlier? In D. Lilleker, I. A. Coman, M. Gregor, & E. Novelli (Eds.), Political Communication and COVID-19 (1st ed., pp. 155–164). Routledge. https://doi.org/10.4324/9781003120254-15

Ludvigsson, J. F. (2020). The first eight months of Sweden's COVID-19 strategy and the key actions and actors that were involved. Acta Paediatrica, 109(12), 2459–2471. https://doi.org/10.1111/apa.15582

Ludvigsson, J. F. (2023). How Sweden approached the COVID -19 pandemic: Summary and commentary on the National Commission Inquiry. Acta Paediatrica, 112(1), 19–33. https://doi.org/10.1111/apa.16535

Nordgren, A. (2023). Pandemics and the precautionary principle: An analysis taking the Swedish Corona Commission's report as a point of departure. Medicine, Health Care and Philosophy. https://doi.org/10.1007/s11019-023-10139-x

Petridou, E. (2020). Politics and administration in times of crisis: Explaining the Swedish response to the COVID-19 crisis. European Policy Analysis, 6(2), 147–158. https://doi.org/10.1002/epa2.1095

Pierre, J. (2020). Nudges against pandemics: Sweden's COVID-19 containment strategy in perspective. Policy and Society, 39(3), 478–493. https://doi.org/10.1080/14494035.2020.1783787

Saunes, I. S., Vrangbæk, K., Byrkjeflot, H., Jervelund, S. S., Birk, H. O., Tynkkynen, L.-K., Keskimäki, I., Sigurgeirsdóttir, S., Janlöv, N., Ramsberg, J., Hernández-Quevedo, C., Merkur, S., Sagan, A., & Karanikolos, M. (2022). Nordic responses to Covid-19: Governance and policy measures in the early phases of the pandemic. Health Policy, 126(5), 418–426. https://doi.org/10.1016/j.healthpol.2021.08.011

Simonsen, S. (2022). Swedish exceptionalism and the Sars-CoV2 pandemic crisis: Representations of crisis and national identity in the public sphere. Risk, Hazards & Crisis in Public Policy, 13(3), 277–295. https://doi.org/10.1002/rhc3.12247

Warren, G. W., Lofstedt, R., & Wardman, J. K. (2021). COVID-19: The winter lockdown strategy in five European nations. Journal of Risk Research, 24(3–4), 267–293. https://doi.org/10.1080/13669877.2021.1891802

Discussion

As these country reports demonstrate, despite the apparent similarity of countries in the EU along a number of dimensions (e.g. wealth, education, adherence to the rule of law), different countries had markedly different pandemic experiences. Indeed, there is much rich and qualitative detail unpack from the 19 reports presented above. During the early stages of the pandemic, accidents of geography and timing played a comparatively outsized role in explaining different government's pandemic performance. Italy, as Booth argues, had the arguably random misfortune of being the first country with a major COVID-19 outbreak not only in the EU but outside of China, while other countries by luck of geography like Bulgaria and Portugal were granted comparatively more grace in dealing with the virus as Ucar and Fochler point out respectively.

Over time however, no country in the EU was able to escape the ravages of the pandemic completely with all countries experiencing multiple waves of cases and policy responses through October 1, 2021. While generally most countries were able to deal with the first wave relatively well, almost all countries struggled with the following waves though to varying degrees. Different starting positions with regards to health care capacity to some extent helps explain the effectiveness of government response. While, as Booth shows, the Italian government had been systematically underfunding public health long before the start of the pandemic. Ye also finds that Slovakia's poor healthcare infrastructure also negatively affected its ability to deal with pandemic cases and roll out its vaccination campaign. Meanwhile, as Hussain points out, Luxembourg's comparatively well-financed health care system helped it stage an effective medical response to the pandemic. Its small population size moreover, likely helped it succeed in its mass COVID-19 testing campaign. Greece's relatively elderly population and ongoing refugee crisis conversely, made it more difficult for the government to get a handle over the pandemic.

Meanwhile countries also differed to a large extent in existing levels of public trust. Northern European countries like Finland, Denmark and the Netherlands enjoyed relatively high levels of public trust compared to other EU states, as both Desai, Wesel and Schönfeld point out respectively, which arguably helped lead to greater compliance with COVID-19 PHSMs. In contrast, misinformation campaigns in a wide variety of countries, including Austria, Bulgaria, the Czech Republic Latvia, which Öksüz, Ucar, Kahraman and Rizvi highlight respectively, likely played a role in high levels of vaccine hesitancy there.

The longer the pandemic went on, the more that concerns other than public health played a role in pandemic response. Chief among such alternative concerns was the impact of the virus and policy responses to them on the economy. The Croatian government, as Bechler and Desai point out, chose to allow those who could substantiate they were traveling in the pursuit of economic or business interests enter the country. Portugal similarly, lifted travel restrictions for tourism by Christmas 2020 likely in deference to the large role tourism plays in its economy.

Considerations of politics and power meanwhile never remained far from shaping pandemic response, though they expressed themselves differently depending on the country. In Lithuania, regularly scheduled elections in October 2020 resulted in both a change in government and pandemic policies, as Rizvi shows. Elections in Croatia meanwhile, sparked vigorous debate as to whether those infected should be allowed to vote, with the ruling ultimately coming down in favor of franchisement. Meanwhile, Booth discusses how conflict among different political parties and levels of government in Italy led to clashes among different governmental levels during the early stages of the pandemic. While Italian COVID-19 PHSMs became more centralized over time however, Fochler finds that in Germany similarly conflicts between subnational regions, largely divided by the east and west, led to a more decentralized response.

Such common themes aside, a notable advantage of presenting qualitative, descriptive reports of course, is that it allows for proper space to explore potentially idiosyncratic factors that shaped a country's pandemic experience. For instance, though most governments in the EU experienced a decline in public trust as the pandemic has gone on, Hungary is a notable exception. As Hartmann notes, Hungarians have rated Orban's pandemic measures to be remarkably successful, an evaluation that arguably reflects Orban's skill as a political communicator given that Hungary has been one of poorest pandemic performers. Meanwhile Lithuania, despite also being bombarded by misinformation campaigns, eventually was able to achieve a vaccination rate comparable to other EU countries. Sweden also bucked the trend in implementing more stringent measures over time while most countries opted for less stringent measures over time. Indeed, for all the fanfare that Sweden received for its initially light COVID-19 response, this description perhaps better typifies the Dutch response, which to a great extent, tried to avoid implementing mandatory measures.

As we stated in the introduction to this deliverable but which we hope this chapter drives home, readers looking for easy, simple explanations for explaining policy responses in EU countries will not find them here. Instead of silver bullets, we seek to show that pandemic response in EU countries was shaped by a wide variety of factors, including those beyond any government's control (e.g. geography, population size) as well as those of their own making both positive (e.g. high levels of public trust) and negative (e.g. lack of investment in health care, previous partisan strife).

Though quantitative empirical studies can help tease out the average effects of various potential drivers of policy response, which the next chapter will explore in greater detail, the qualitative reports presented here hopefully will remind the reader that the devil is, as ever, in the details. Researchers interested in understanding a particular country's pandemic experience will not be able to find such explanations in large N quantitative studies but will need to dig into the particularities of each country or groups of countries. That being said, there is certainly more to say about these countries than in the, on average, 8-10 pages that we have devoted to each country here. In presenting the countries that we have chosen in the time frame that we have set, we have sought to balance coverage over time and space with our own capacities to document them. Meanwhile, given the apparent importance of swift response to limiting the spread of infectious diseases more generally, we hope that this focus on the initial 22 months of the pandemic can help governments address future public health threats before they morph into years-long battles.

Ultimately better understanding of these different dynamics can hopefully reduce the number of fatalities, regardless of the time frame in which the public health threat plays out. Indeed, while each individual country report presented in this chapter has taken great pains to describe the considerable over time variation of the pandemic since its beginning until October 1, 2021, the across-country variation in pandemic response has also been considerable. Table 1 provides a breakdown of the total number of tests per thousand, cases per million, deaths per million, and population for each EU country, sorted in descending order by deaths per million by October 1, 2021. While the Table 1 suggests that in general, Nordic EU countries fared the best in terms of deaths per million, Sweden is an exception to this trend, a pattern also found in the country reports. Meanwhile, the worst performing countries with regards to deaths per million were former Soviet bloc countries, though again an exception can be found with Estonia's performance in particular.

country	Total Tests per Thousand[391]	Total Cases per Million[392]	Total Deaths per Million[393]	Population
Finland	1296	3e+04	202	6e+06
Denmark	7036	6e+04	452	6e+06
Cyprus	14858	1e+05	633	9e+05
Malta	2446	7e+04	859	5e+05
Estonia	1458	1e+05	1023	1e+06
Netherlands	963	1e+05	1034	2e+07
Ireland	1501	8e+04	1061	5e+06
Germany	NA	5e+04	1148	8e+07
Luxembourg	5516	1e+05	1289	6e+05
Sweden	1186	1e+05	1411	1e+07
Greece	NA	6e+04	1428	1e+07
Latvia	2325	9e+04	1470	2e+06

[391] Mathieu, E., Ritchie, H., Rodés-Guirao, L., Appel, C., Giattino, C., Hasell, J., Macdonald, B., Dattani, S., Beltekian, D., Ortiz-Ospina, E., & Roser, M. (2020). Coronavirus (COVID-19) Testing. *Our World in Data*. Retrieved April 28, 2023, from: https://ourworldindata.org/coronavirus-testing

[392] WHO (2023). *WHO COVID-19 Dashboard*. Retrieved April 27, 2023, from: https://ourworldindata.org/explorers/coronavirus-data-explorer

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Austria	9804	8e+04	1497	9e+06
Portugal	1819	1e+05	1749	1e+07
France	2145	1e+05	1771	7e+07
Lithuania	1875	1e+05	1826	3e+06
Spain	1258	1e+05	1862	5e+07
Romania	NA	6e+04	1884	2e+07
Poland	NA	7e+04	1899	4e+07
Croatia	NA	1e+05	2144	4e+06
Belgium	1735	1e+05	2209	1e+07
Italy	1566	8e+04	2218	6e+07
Slovakia	7714	7e+04	2241	6e+06
Slovenia	750	1e+05	2326	2e+06
Czechia	3707	2e+05	2914	1e+07
Hungary	669	8e+04	3030	1e+07
Bulgaria	NA	7e+04	3079	7e+06

Table 1: Tests per thousand, cases per million and deaths per million by country as of October 1, 2021 sorted by deaths per million.

These general patterns that we observe however, are just that and as above, we caution readers against inferring a causal story from them. An alternative reading of Table 1 for instance, would be that countries with smaller populations generally fared better with regards to their pandemic response compared to larger countries. Though it is beyond the scope of this deliverable to rigorously investigate how different policies or different policy bundles affected COVID-19 cases (Barrat et al., 2021, Bartolucci et al., 2021, Cencetti et al., 2021, Giordano et al., 2021, Gros et al., 2021, Krueger et al., 2022, Le et al., 2022), or to untangle the endogeneity between these two variables (Giudici et al., 2023)[394], or other potential drivers or outcomes (Ahelegbey et al., 2022, Asper et al., 2022, Dreger and Gros, 2021, Pagnottoni et al., 2021, Spelta and Pagnottoni, 2021, Winkler et al., 2021, Woskie et al., 2021)[395] by spending substantial time and effort investigating the interaction between government responses, COVID-19 cases and deaths and the political discourse around, we hope our nuanced, qualitative, account of these dynamics may aid in future causal research on the topic.

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[394] For more information in this regard, see PERISCOPE Deliverable 6.1 Dynamic SIR models: publication and infographics; and 6.2 Spatio-temporal modelling tool: publication and infographics or PERISCOPE Deliverable 5.2: Report on Behavorial Experiments on Social Distancing.

[395] A number of different PERISCOPE deliverables explore this issue with regards to different potential outcomes and drivers including: economic outcomes (PERISCOPE Deliverable 1.2 Report on the Socioeconomic impacts of COVID-19 and related measures), mental health (PERISCOPE Deliverable 2.1 Analytical report on mental health impacts), and health inequalities (PERISCOPE Deliverable 2.2 Analytical report on health inequalities with emphasis on vulnerable groups)

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Chapter 3

Explaining Government COVID-19 PHSM Response

Introduction

The sheer variety and scale of PHSMs that have been made in response to the COVID-19 pandemic over time begs the following question: are there factors that can systematically separate out the signal from the noise in order to explain the adoption of these policies? While the previous chapter, which details the responses of X different countries within the European Union, shows that government responses were shaped by factors like the level of government centralization or decentralization and previous adherence to democratic principles, in this section we seek to move beyond a descriptive, qualitative assessment of these relationships toward a systematic and empirical one.

Ongoing work that has investigated these issues both in Europe and beyond find that a number of factors influence the timing, severity and types of COVID-19 PHSMs governments have adopted. Indeed, previous experience with epidemics likely explains the ability of Asian countries to both recognize and react to the COVID-19 threat more quickly than Western ones (Capano, 2020, Anttiroiko, 2021). The relative preparedness of countries' health systems also appears to be linked to COVID-19 PHSMs, with Aristodemou et al. (2021) finding that those with less prepared health systems were more likely to implement stricter confinement measures. Engler et al. (2021) find meanwhile, that countries that have historically defended democratic principles were less likely to implement restrictive COVID-19 PHSMs. Finally, still others argue that existing social welfare systems influenced how governments designed their COVID-19 policies, particularly those that targeted the social and economic effects of the pandemic (Cantillon et al., 2021).

In this chapter, we delve deeper into the drivers of COVID-19 PHSMs by presenting two studies we conducted which explore the extent to which (i) government structures (federal vs. unitary) (ii) previous governmental repression can play on influencing policy choices made in response to the COVID-19 pandemic. The first study explores whether countries with federal political structures develop more or less effective policies compared to those with unitary political structures. In a paper developed by Tim Büthe, Joan Barceló, Cindy Cheng, Paula Ganga and Luca Messerschmdt and available on SSRN, we seek to resolve this long-standing theoretical debate by arguing that the extent to which federalist countries reap the benefits or suffer the costs of giving sub-national units greater autonomy depends on whether a given policy is itself more optimally implemented homogenously or heterogeneously across different regions. Using both statistical and qualitative case study methods, we analyze national and sub-national policy responses to COVID-19 in 2 federal (Germany and Switzerland) and 2 unitary countries (France and Italy) in Europe. To preview our results, we find that overall, federal countries are more likely to possess heterogeneity in their policy responses than unitary countries. We find mixed evidence as to whether federal or unitary countries' policies are more responsive to the severity of the COVID-19 crisis at the sub-national level

Meanwhile, the second study paper seeks to explain the great variation in the adoption, timing, and duration of lockdown and curfew policies made in response to the COVID-19 pandemic. This study was developed into a paper by Joan Barceló, Robert Kubinec, Cindy Cheng, Tiril Hoye Rhan and Luca Messerschmidt and published in the *Journal of Peace Research.* In this paper, we explore whether government incentives to repress domestic dissidents influence their responses to the COVID-19 pandemic. We argue that containment policies are observationally equivalent to those that abusive governments would use to limit domestic dissent --- i.e., policies that restrict citizen's freedom of movement. This creates an opportunity for abusive governments to engage in repressive behavior without countervailing pressure from citizens and the international community. Following this logic, we expect abusive governments to be more likely to adopt restrictive policies, adopt them earlier in the course of the pandemic, and take longer to relax restrictions. Empirically, we find that governments that have recently engaged in state violence against civilians or abused citizens' human rights were about 10 percent more likely to enact lockdown and curfew policies, and these policies were implemented approximately 48 days earlier in the course of the pandemic and kept in place for approximately 23 more days than less repressive countries. Overall, our results advance our understanding of how the repressiveness of state institutions can shape policy responses to a global health crisis.

Together, these two papers showcase that while it is possible to identify, isolate and estimate the effect of different drivers on the adoption of various COVID-19 PHSMs, it is impossible to do so without a nuanced understanding of the historical context in which they take place nor the dynamic interactions between different actors at both the national, subnational and supranational levels.

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Study 1: Patterns of Policy Responses to the COVID-19 Pandemic in Federal vs. Unitary European Democracies

Introduction

In this study, based off of our working paper, Büthe et al. (2020), we examine federalism as a possible driver of the variation in COVID-19-related policies at the national and the sub-national level across four European countries: federal Germany and Switzerland, as well unitary France and Italy. As a common and at least initially exogenous shock, the pandemic provides an ideal opportunity to advance our understanding of the consequences of institutional differences (Gourevitch, 2010; Katzenstein, 1978).

Theoretically, we seek to resolve a prominent debate over the beneficial or detrimental consequences of federalism for public policy. Louis Brandeis famously praised federalism for providing a democratic policy 'laboratory.' Numerous scholars similarly emphasize the democratic responsiveness of federalism because it facilitates experimenting and adopting differing policies in response to sub-nationally divergent preferences and conditions. Other scholars focus on the centrifugal tendencies and the pathologies of the inherent greater number of veto players in federal political systems, which arguably make them more likely to adopt counterproductively divergent, conflict-inducing policies and impede the selection of maximally effective, cohesive policy responses, 'especially when problem-solving is urgent' (Scharpf, 1988, p.267).

We propose a synthesis of these two contrasting perspectives. Rather than constituting strictly incompatible understandings of federalism, each might correctly capture opportunities and risks of federal political institutions, depending on the particular challenges policymakers seek to address.

Empirically, we conduct statistical analyses of government responses to the COVID-19 pandemic at the level of specific policies. Our quantitative data are drawn from the CoronaNet-Project (https://coronanet-project.org), which allows us to analyze COVID-19 policies at the national and sub-national level in federal as well as non-federal states.

In our statistical analyses we find that federal countries adopt more heterogeneous policies than countries with unitary policy-making, especially when it is theoretically more important to take sub-national differences into consideration for a particular policy. Does federalism also make it more likely to adjust the policy response for the severity of the

COVID-19 pandemic at the sub-national level? Our statistical analysis suggests greater severity at the sub-national level prompts both federal and unitary countries to adopt more homogenous policies.

Strengths and Weaknesses of Federalism: A Synthesis

We focus in this paper on a long-standing debate within the rich and diverse literature on the consequences of federalism – between the federalism-as-policy-laboratory perspective and the subnational-units-as-veto-players perspective. We suggest a synthesis that transforms the debate into a set of conditional hypotheses.

The federalism-as-policy-laboratory perspective: One major school of thought in federalism research emphasizes the opportunities federalism provides to respond to sub-nationally differing conditions with differentiated policies (Brandeis, 1932; Karch, 2007). Federalism inherently involves the devolution of at least some policymaking authority to sub-national units, allowing those units to adopt policies that differ from each other without the need for prior central government authorization. It enables sub-national units to be responsive to locally differing needs or demands, about which they are likely to have better information than a central government (Oates, 1999; Saam and Kerber, 2013) – or to experiment with different solutions if policy uncertainty is high (Kerber and Eckardt, 2007; Weingast, 1995).

This feature of federalism has several observable implications. First, while unitary countries can, in principle, also adopt different policies for their different sub-national units, diversity ('heterogeneity') of policies at the sub-national level should be more likely in countries with federal political systems. Second, public policies of federal states should be more responsive to sub-nationally differing conditions. Third, and conditional on such policy differentiation, federalism creates opportunities for experimentalist learning (De Burca et al., 2014; Rangoni and Zeitlin 2021; Sabel and Zeitlin, 2012), which in the medium run should lead to convergence – through learning – on the most effective policies.

The subnational-units-as-veto-players perspective: Another major school of thought emphasizes the institutional pathologies of federalism. The federalism-defining additional layer of political decision-making creates a political system with a large number of veto players. Even if only a bare majority of the sub-national units needs to support a collectively binding decision, the extra level at which a supporting coalition must be built, increases the number of veto points. And although additional veto points might be advantageous for bargaining (Mayer, 1991; Putnam, 1988) and for making more credible commitments (Büthe and Milner, 2008; Henisz and Zelner, 2001), additional veto points impede adapting policy in light of new information (Tsebelis, 1995). The veto player status of the sub-national units also creates incentives for sub-national governments to engage in rent-seeking (Besley and Coate, 2003) and for the central government to impose unfunded mandates upon the units (Posner, 1998).

As a result, scholars adopting this perspective expect federalism to impede the selection of a maximally effective, cohesive policy response, 'especially when problem-solving is urgent' (Scharpf, 1988, p.267), resulting instead in a patchwork of different, inconsistent policies. Common policies, if they are achieved at all, will be less efficiently and/or more slowly adopted than in unitary political systems (see also Wibbels, 2005).

Toward a Synthesis: The two views of federalism are often presented as competing, and they certainly lead to rather different normative assessments of federalism. We submit, however, that the theoretical logics underpinning them are not mutually exclusive (and hence not strictly competing). They can both be correct if we understand them as highlighting features of federal systems whose salience is conditional upon circumstances.

Specifically, we argue that the negative consequences of federal systems, emphasized by the subnational-units-as-veto-players perspective, should be most pertinent when the optimal policy is a single common or homogenous policy throughout the entire country. The particular circumstances under which such policy homogeneity is needed include facing a challenge that affects the entire country evenly (such as a crisis in the country's financial system or a country-wide natural disaster) or having a high level of interdependence between the units, such that sub-national unit A adopting a policy that differs from the policy in B has substantial negative externalities for B (and vice versa).

The history of standardization provides a wealth of examples of such 'spatial externalities' due to 'horizontal spillovers' (Biela et al., 2012, p.450), such as when deciding whether to drive on the right or the left side of the road. Either choice solves the basic public safety problem (once speed and traffic create the policy challenge), but agreeing on one common policy is critical for those who travel on the same roads (Büthe and Mattli, 2010; Lay, 1992). Similarly, public provision of health care against infectious diseases in, e.g., an urban sub-national unit such as the Swiss canton Basel Stadt or the

German city-state of Bremen ('A') is undermined by a lack of such care in neighboring provinces, such as Basel Land or Niedersachsen, respectively ('B'), if the inhabitants of A and B regularly interact, creating interdependence (Büthe, 1998; De Swaan, 1988; Simmons, 2001).

We submit that these conditions are in fact usually (if only implicitly) assumed by scholars subscribing to the subnational-units-as-veto-players critique of federalism. The assumption, however, does not universally hold and might hence better be treated as a scope condition.

The experimental benefits of federal systems, by contrast, should be most pertinent when the optimal policy is a sub-nationally differentiated policy. Those circumstances may arise from the particular policy challenges a country faces. The threat of flooding from local (i.e., geographically delimited) heavy rains, for instance, calls for reinforcing the river banks, but only in select locations, not country-wide. A strong but geographically well circumscribed earthquake will require emergency supplies to be massively ramped up in one province while it may reasonably be temporarily drawn down below 'normal' levels in other provinces. Likewise, an epidemic or pandemic that nonetheless affects different parts of a country very differently (in the context of low interdependence between the country's subunits) might similarly exogenously create a 'need' for differentiated policies.

Circumstances under which the most effective policy is a highly differentiated one might also arise endogenously, e.g., from divergent preferences regarding policy choices that involve trade-offs. Anti-COVID policies that carry a high economic cost, such as lockdowns, might despite the costs be welcome in communities with precautionary preferences regarding the health risks, while the same policies might be strongly opposed in communities that value freedom more highly. Conditions that make a sub-nationally differentiated policy response desirable also include high uncertainty about the most effective policy, which makes it advantageous to be able to try out alternative policy responses and 'see what works.' We submit that proponents of the federalism-as-policy-laboratory perspective often (albeit only implicitly) assume what we suggest to turn into a scope condition, namely that conditions differ at the sub-national level or that policy uncertainty is high.

Figure 33 summarizes the resulting expectations:

		Policymaking	
		FEDERAL (DECENTRALIZED)	UNITARY (CENTRALIZED)
Optimal Policy	SUB-NATIONALLY DIFFERENTIATED	Policies will be - more heterogeneous across sub-national units* ... - better adjusted to local conditions*... - converging over time due to learning... - more effective in containing COVID-19 - or more effective to achieve sub-nationally determined goals...	... than with centralized policymaking
	NATIONAL-HOMOGENOUS	Policies will be - more slowly adopted ... - less effective ... - less efficient (incl. more rent-seeking)...	... than with centralized policymaking

Figure 33:Theoretical Expectations

Note: Decentralized policy making may also occur in unitary systems if they exhibit decentralized policymaking with regard to a given issue (see texts). Expectations marked with an asterisk are conditional on a permissive environment for differentiated policies.

Differentiated vs. National-Homogenous Optimal Policies Operationalized

Central to any test of our argument about the conditional strengths and weaknesses of federalism is our ability to distinguish circumstances, under which a common or nationally homogenous policy constitutes the best policy response, from circumstances, under which a sub-nationally differentiated policy response is warranted. We now try to operationalize this distinction.

We identify lockdowns and school closures as two measures for which we would expect sub-nationally differentiated policies to be the optimal policy response. Our rationale is the same for both policies: Lockdowns, i.e., requiring every person in a particular location not to leave home for several days or even weeks (with possible, narrow exceptions) and the closure of nurseries, primary schools, secondary schools, and corresponding daycare centers are among the policy responses considered most effective to break the chains of transmission of the virus. Both policies, however, also impose severe economic costs (in the case of lockdowns directly on everyone who cannot entirely switch to a virtual work environment; in the case of school closures indirectly via the lost productivity of working parents). Extended school closures also threaten serious losses in learning opportunities, exacerbating social inequalities. Given such high costs, it would be clearly suboptimal to adopt these policies throughout an entire country when only some sub-national units are seriously at risk of seeing the pandemic spread. We therefore consider sub-nationally differentiated lockdown and school closure policies warranted whenever the pandemic risks varied at the sub-national level.

We also identify two policies as warranting a nationally-homogenous policy throughout a jurisdiction: restriction on mass gatherings and mask wearing policies. Our rationale for choosing these two policies is as follows:

Restrictions on mass gatherings are supposed to prevent events where a large number of people come together and spend an extended amount of time in close proximity to each other, since such proximity carries a high risk that any infected attending person might infect numerous others through direct contact or respiratory droplets, especially if the event involves speaking loudly (due to noise level), shouting (such as at a sporting event) or singing (e.g., at a religious service). Restricting mass gatherings carries political costs (because it interferes with the freedom of assembly and because such mass gatherings are by definition popular) and economic costs on the organizers and service-providers for such events. At the same time, 'mass' gatherings are virtually by definition events with non-local attendees. Given such 'horizontal spillovers,' a ban on mass gatherings in any particular sub-national unit will likely be effective only if also put in place in other, spatially proximate sub-national units, suggesting that, if such restrictions are warranted at all, then a nationally homogenous adoption of the policy is warranted.

Government recommendations or requirements for the general public to wear masks warrants a national homogeneity for a slightly different reason: Until early April, the World Health Organization and most national epidemiological experts advised members of the general public not to wear masks (for various reasons, including supposed ineffectiveness and concerns over supply shortages). On April 6, however, the WHO and epidemiological experts around the world radically changed their tune (most of them within 48 hours of each other). In light of new research suggesting mask-wearing was highly effective for limiting the airborne spread of the virus, they now suddenly and strongly recommended that everyone wear masks, at least when in close proximity to others. Given this sudden, European-wide change in the recommended policy, which from any particular country's perspective was completely exogenous and applicable everywhere, we would expect nation-wide (homogenous or common) mask wearing recommendations (very soon after April 6).

Based on the foregoing discussion, we specify two main operationalized hypotheses, which we will examine empirically using a mixed-methods approach in the remainder of this article:

H1 If a country has a federal political system, its COVID-19 policies will be more heterogeneous than the COVID-19 policies of countries with a unitary political system.

If our theoretical synthesis holds, which suggests that such heterogeneity is beneficial for policies where differentiated policies are called for, whereas it is detrimental when a homogenous national policy is called for, and if governments recognize these strengths and weaknesses – and adjust their pandemic responses accordingly – we might also expect:

H1a Countries with federal/decentralized policy making adopt substantially more heterogeneous lockdown and school closure policies than countries with unitary/centralized policymaking.

H1b Countries with federal/decentralized policy making adopt marginally more heterogenous mass gathering and mask wearing policies than countries with unitary/centralized policymaking.

Where federalism coincides with the need for differentiated policies, we also expect greater responsiveness to local conditions at the sub-national level, based on our synthesis argument:

H2 If a country has a federal political system, its COVID-19 policies will be more severity-adjusted than the COVID-19 policies of countries with unitary/centralized policymaking.

Policymaking Authority in 4 European Democracies

We test our operationalized hypotheses by analyzing government responses to COVID-19 in four European democracies.

The **Swiss Confederation** consists of 26 cantons, which reflect historical religious, linguistic, and cultural divisions, some of which remain politically salient (Hooghe et al., 2016, pp. 398-404; Fleiner, 2002). The Swiss cantons are widely considered to be more powerful relative to the Swiss central government than the sub-national units of any other federal country in Europe. They exercise a high level of policy making autonomy, including on health care and education (especially schools) and considerable autonomy regarding the governance of economic activity (Dardanelli and Mueller, 2019). Moreover, any law or regulation which interferes with a canton's authority must pass the Ständerat (Council of States). At the same time, the Emergency Law (Notrecht; Article 185(3)) and the Epidemic Law (EpG; SR 818.101) allow the federal government under certain conditions, including an epidemic, to declare escalating states of emergency: A 'particular situation' allows cantonal governments to act without approval from the cantonal legislature and allows the federal government to announce policies after consultation with the cantons. An 'extraordinary situation' (Art. 7) lifts the necessity for the government to consult with cantonal authorities in advance. Each canton can, under these circumstances, still adopt sub-national emergency legislation but only to the extent that it is compatible with central government measures[396].

Germany is a federal republic consisting of 16 Bundesländer, which exercise substantial autonomy in, for instance, culture, education, and the oversight of the health system and share competences with the federal government in many other realms, where the Länder

[396] Bundesrat (2020). *Bundesgesetz vom 28. September 2012 über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz, EpG).* Retrieved April 28, 2023 from: https://www.admin.ch/opc/de/classified-compilation/20071012/index.html

often enjoy de jure and/or de facto discretion in implementation and enforcement (Benz, 1999; Burkhart, 2008; Hooghe et al., 2016, pp. 378-386; Kaiser and Vogel, 2019). The competencies of the Länder also include the right to impose curfews and quarantines, as well as restrictions on businesses and public spaces.

The German constitution gives the central (federal) level the power to unilaterally announce a state of emergency, which allows the federal government to overrule the competencies of the Länder. The Infection Protection Act (Infektionsschutzgesetz, IfSG) of 2000 provides an additional basis for the central government to interfere with the policymaking authority of the Länder regarding health issues, though the sub-national Länder governments retain the competence to execute measures taken under this law (Art. 83 GG)[397].

Italy has long been considered close to the ideal type of a unitary state (Lijphart 1999), but reforms in the 1970s and 2000s have created a hybrid multilevel regime with important policymaking and administrative authority delegated to the first sub-national level of Italy's 20 regions (Breton and Fraschini, 2003; Fabbrini and Brunazzo, 2003; Hopkin, 2009; Palermo and Wilson, 2014; Putnam et al., 1993; Roux, 2008). This process of decentralization has also been mirrored in the Italian National Health System. Reforms in the 1990s and early 2000s gave sub-national governments more resources, as well as fiscal, organizational, and managerial autonomy – though it also increased disparities between the rich North and the poor(er) South (Pavolini and Vicarelli, 2012; Di Novi et al., 2019).

The politico-administrative system of **France** centralizes power more than in any other European democracy; it is the prototype of a unitary system (Bezes et al., 2013; Meny, 1984; Schmidt, 2007). 1983 and 2002 legislation, followed by the 2004 constitutional reform, gave more powers to France's 13 regions, but the 2008 financial crisis prompted the central government to claw back power from regional and local authorities (Bezes and Parrado, 2013). French health governance experienced a similar partial and later retracted decentralization of authority (Bach, 1994; Pegon-Machat et al., 2016), where initial reforms in the 1990s were followed by 2009 reforms that ended up reinforcing the

[397] Bundesministerium der Justiz und für Verbraucherschutz (2020). *Gesetz zur Verhütung und Bekämpfung von Infektionskrankheiten beim Menschen*. Retrieved April 26, 2023, from: https://www.gesetze-im-internet.de/ifsg/

central government as the most important player in the medical field (Rodwin and Le Pen, 2004; Simonet, 2013; 2017).

Did Differences in Sub-National Policy Autonomy Survive COVID-19?

Given that all four countries (in different ways to different degrees, but nonetheless all four) allow its national government to centralize policy making authority in the event of a health emergency, we examined, in a preliminary step, whether the institutional differences, sketched above, have remained intact in the context of the pandemic, with federal systems exhibiting more decentralized policymaking. To do so, we created a network analysis-based centralization index (described in greater details in the Appendix), indicating to what extent policies with regard to a given issue are adopted at the national rather than at the sub-national level.

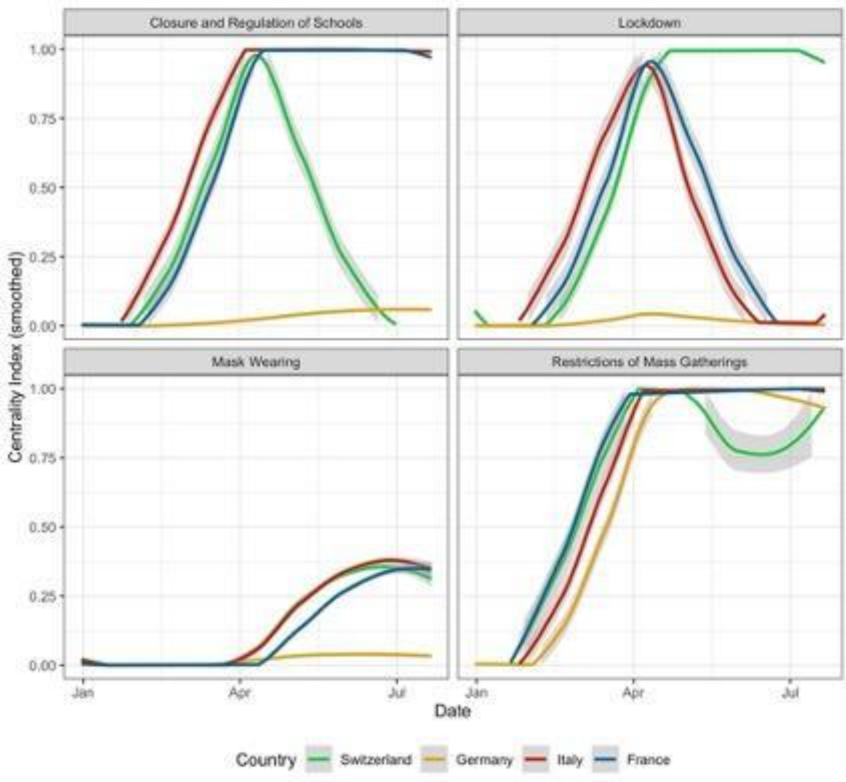

Figure 34: Policy Centralization by Country and Policy Type

Note: Daily index values are smoothed using a loess function. Gray bars represent confidence intervals around this smoothed function.

Figure 34 presents plots of the policy centralization index for our 4 different policy types for Switzerland, Germany, Italy, and France over time, based on daily observations from

1 January through 21 July 2020. It shows that, once the pandemic hit, unitary France and Italy moved quickly to adopt policies predominantly at the national level, though they have not followed a uniform pattern for all four policy types. Germany, one of our federal countries, has implemented 3 of the 4 policies in a much more (and persistently) decentralized way. Switzerland, by contrast, has deviated with its (at least temporarily) more centralized COVID-19 responses from what we would expect in a federal country.

A complementary statistical analysis (see Appendix 1 in Büthe et al. (2020)) essentially confirms this finding. Overall, countries whose sub-national governments hold greater formal powers – Germany and Switzerland –tend to adopt policies in a more decentralized way than countries with unitary political systems. The one clear exception is Switzerland's lockdown policy, unilaterally adopted by the central government early on, which foreclosed policymaking at the sub-national level, as discussed below.

Quantitative Empirical Analysis: Data and Methods

We now turn to examining how federalism shapes COVID-19 policies. For the analysis of our first hypothesis, our unit of analysis is the country-policy-day; for the analysis of our second hypothesis, it is the (sub-national) unit-policy-day. For both, analysis covers 1 January 2020 to 21 July 2020.

Dependent Variables

For our first hypothesis, the outcome of interest is policy heterogeneity, i.e.: How different are the policies across a country's sub-national units at a given time? We operationalize this idea using the following equation:

$$\text{Heterogeneity Index}_{cpi} = -2 \times |\pi_{cpi} - 0.5| + 1$$

where π_{cpi} represents the proportion of sub-national units in country c for which policy x is in force at time i. The index is constructed to range from 0 (no heterogeneity = homogeneity), to 1 for maximum policy heterogeneity. Note that the index varies independently of the political system, since governments of unitary states, if they adopt policies that differ across their sub-national units, would be recorded as having high heterogeneity, whereas the units of a federal system, if they all adopt the same policies, would be recorded as exhibiting no heterogeneity.

Figure 35 shows the distribution of the heterogeneity measure, by policy and by country, over time. Unitary France exhibits the lowest level of policy heterogeneity across all four policies, while Germany demonstrates generally the highest level heterogeneity. Italy and Switzerland lie somewhere in between.

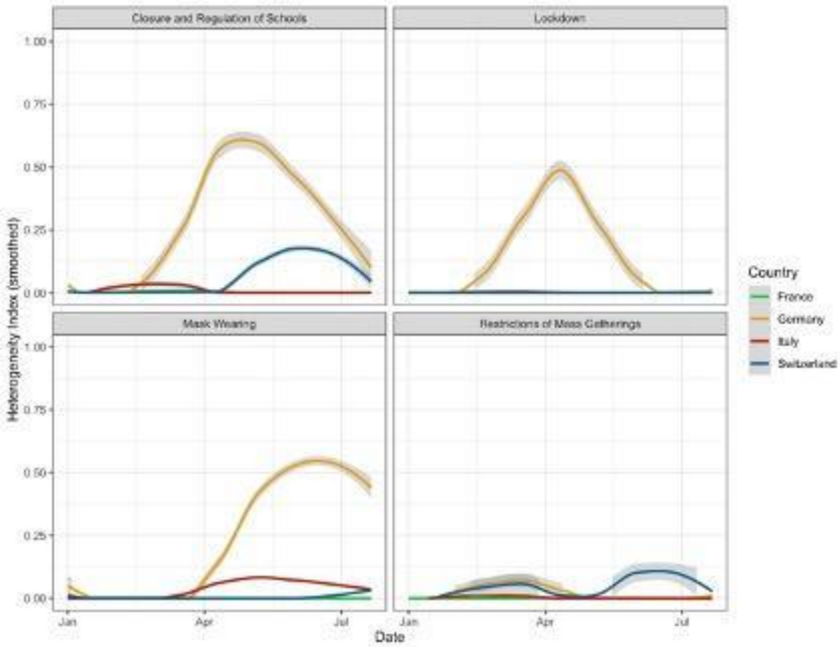

Figure 35: Policy Heterogeneity by Country and Policy Type

Note: Daily index values are smoothed using a loess function. Gray bars represent confidence intervals around this smoothed function.

To test our second hypothesis – that federal countries are more likely to apply differentiated policies based on the severity of the crisis in a particular sub-national unit – our dependent variable is a dichotomous indicator whether a policy of the specified type was in force (1) or not (0) for each sub-national unit.

Independent Variables

Our main independent variables of interest are measures of each country's political system and the type of policy. To allow findings to differ among countries with the same political system, we use for our main analyses country dummies rather than an indicator for federal vs. unitary political systems.

Our data about restrictions of mass gatherings , mask wearing , lockdowns and school closures , is taken from the CoronaNet Research Project (Cheng et al., 2020). For this paper, we analyze the 692 policies adopted for the 4 policy types by the 4 countries between 1 January and 21 July 2020 (see Appendix A1 in Büthe et al., 2020 for details). Please see Chapter 4 for more information about the CoronaNet dataset.

As discussed above, we differentiate between policy types where nationally-homogenous policies are called for (restrictions of mass gatherings and mask wearing policies) and realms where sub-nationally-differentiated policies are warranted (lockdowns and school closures). Since we have only two policies of each type, we use dummy variables for the individual policies.

To test H2, we also need a measure of the severity of a crisis in a region relative to the country as a whole. We use (the 7-day moving average of) subnational mortality – specifically, the number of sub-national COVID-19 deaths divided by the sub-national population relative to the number of national deaths divided by the national population – as our measure of sub-national severity. Data on COVID-19 deaths, from national health ministry and infectious disease agency websites, were validated with the Johns Hopkins database and the New York Times country reports.[398]

Control Variables

In the analyses for H1, we also include the Herfindahl-Hirschman concentration of deaths across a country's sub-national units as a control variable. This measure of how equally distributed across the country the deaths (HHI minimum=0) or concentrated in one or

[398] Bundesamt für Gesundheit (2020). *Coronavirus: Bundesrat erklärt die «ausserordentliche Lage» und verschärft die Massnahmen*. Retrieved April 26, 2023, from: https://www.bag.admin.ch/bag/de/home/das-bag/aktuell/medienmitteilungen.msg-id-78454.html ; Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) (2020). *Coronavirus COVID-19 (2019-nCoV)*. Retrieved April 26, 2023, from: https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6 ; ECDC (2020). *COVID-19 situation update for the EU/EEA and the UK, as of 31 August 2020*. Retrieved April 26, 2023, from: https://www.ecdc.europa.eu/en/cases-2019-ncov-eueea ; Etalab (2020). *COVID-19-France*. Retrieved April 26, 2023, from: https://dashboard.covid19.data.gouv.fr ; Protezione Civile (2020). *COVID-19 - Italia*. Presidenza del Consiglio dei Ministri Dipartimento della Protezione Civile. Retrieved April 26, 2023, from: http://opendatadpc.maps.arcgis.com/apps/opsdashboard/index.html#/b0c68bce2cce478eaac82fe38d4138b1 ; New York Times (2020). *Coronavirus Map: Tracking the Global Outbreak*. Retrieved April 26, 2023, from: https://www.nytimes.com/interactive/2020/world/coronavirus-maps.html

few sub-national units (HHI maximum = 1) allows us to control for subnational severity of the COVID-19 crisis when the country-day is the unit of analysis. We further control for the 7-day average of the national count of COVID-19 cases.

All statistical models also additionally control the date to the third polynomial degree to account for potential non-linear time trends during the pandemic.

Results

To test H1 – that federalism leads to more heterogeneous policies in response to COVID-19 – we regress the policy heterogeneity index on the interaction between policy types and country dummies. Model 1 in Table 2 reports the OLS estimates; Figure 36 shows the substantive results. For most countries and most policy types, policy heterogeneity is low, except for Germany, which exhibits significant heterogeneity, albeit not only for lockdown and school closures, for which sub-nationally-differentiated policies should be warranted, but also for mask-wearing requirements.

Overall, the results suggest: Following our theoretical expectations, unitary countries have responded in a homogeneous way to the COVID-19 pandemics across both differentiated and homogeneous policies. The federal countries, Germany and Switzerland, have implemented school closures (and Germany also lockdowns) more heterogeneously, consistent with our theoretical expectations for these policy types (H1a), which warrant sub-nationally differentiated policies. Switzerland's homogenous lockdown policy, however, contradicts H1a.

Germany and Switzerland implemented restriction of mass gathering policies only marginally more heterogeneously than Italy and France, consistent with H1b. Germany's highly heterogeneous mask wearing policies, meanwhile, may be seen as evidence of the pathologies of federalism, which have long been the concern of proponents of the subnational-units-as-veto-players perspective.

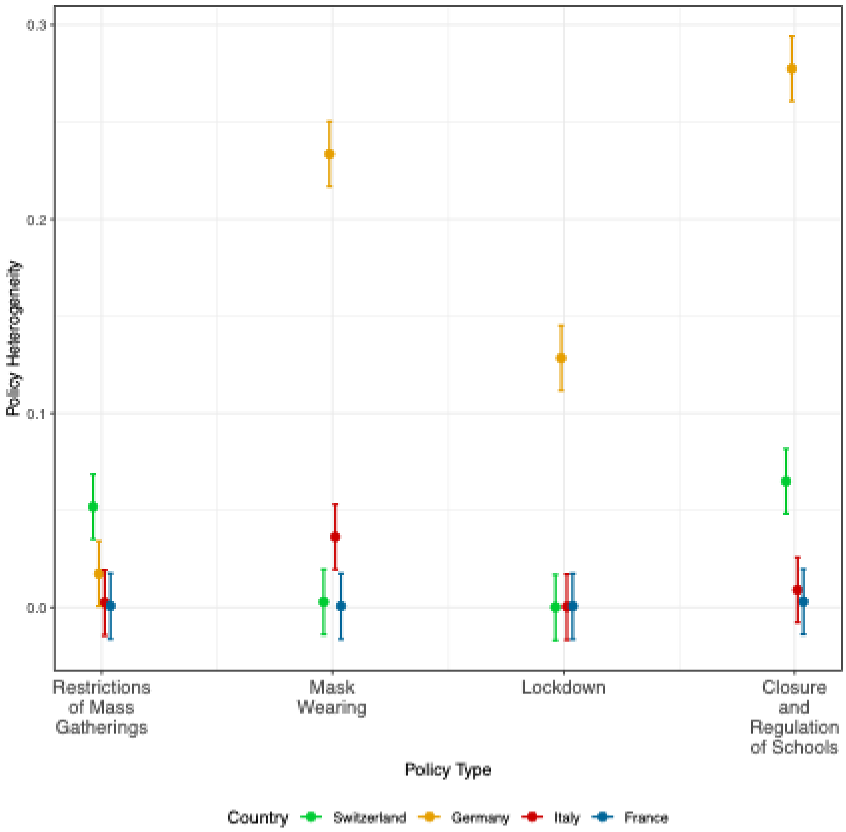

Figure 36: Predicted Values of Policy Heterogeneity by Policy Type, OLS Models.

Finally, we assess whether a federal political structure implies a greater responsiveness to the sub-national variance in the severity of the pandemic. For this, we regress sub-national policy adoption on a three-way interaction between policy type, country and the regional death rate relative to the death rate in the rest of the country, as is shown in Model 2 in Table 2.

We plot the predicted effects of this three-way interaction in Figure 37. We observe virtually no difference across the four countries in the likelihood of restriction on mass gatherings and mask wearing requirements (though the latter are overall less likely than the former). The likelihood increases for more severely affected sub-national units, but generally only very slightly and not at all for France for mass gathering restrictions and Germany (both policies). With regard to more differentiated policies (lockdown and school closure), the federal countries (Germany and Switzerland) appear generally less likely to adopt such policies than unitary countries. They also do not appear more likely to adopt such policies when the regional death rate is higher than the national one. With regard to unitary countries' responsiveness to sub-national differences, the findings are mixed: Italy appears to adopt more lockdown and school closure policies when the regional death rate is higher than the national one while France appears to adopt fewer such policies. Overall then, we find little support for H2.

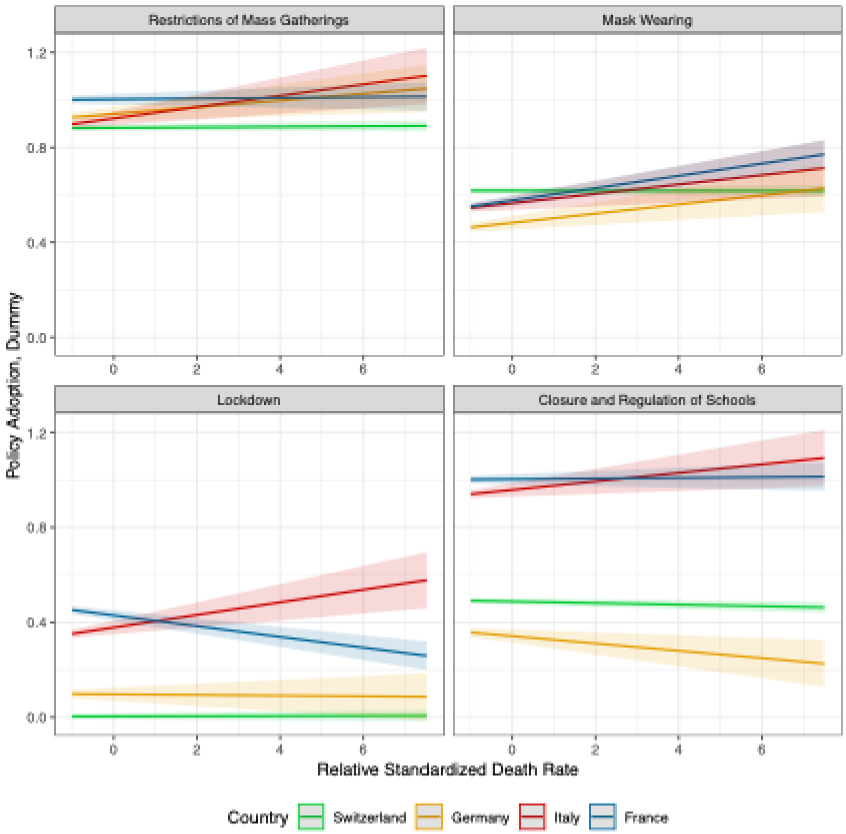

Figure 37: Predicted Values of Policy Adoption, OLS regression

Table 2: OLS Regression of Policy Adoption

	H1	**H2**
Switzerland	0.051***	-0.12***
	(0.012)	(0.010)
Germany	0.017	-0.062***
	(0.012)	(0.011)
Italy	1.7e-3	-0.08***
	(0.012)	(0.01)

Lockdown Dum	-1.2e-4	-0.57***
	(0.012)	(0.011)
Mask Wearing Dum	-8.8e-5	-0.43***
	(0.012)	(0.01)
Schools Dum	2.2e-3	-6.8e-5
	(0.012)	(0.011)
Lockdown Dum * Switzerland	-0.052**	-0.31***
	(0.017)	(0.014)
Lockdown Dum * Germany	0.11***	-0.27***
	(0.017)	(0.016)
Lockdown Dum * Italy	-2.0e-3	0.030
	(0.017)	(0.016)
Schools Dum * Switzerland	0.011	-0.39***
	(0.017)	(0.014)
Schools Dum * Germany	0.26***	-0.60***
	(0.017)	(0.016)
Schools Dum * Italy	4.3e-3	0.035*
	(0.017)	(0.015)
Mask Wearing Dum * Switzerland	-0.049**	0.16***
	(0.017)	(0.014)
Mask Wearing Dum * Germany	0.22***	-0.033*
	(0.017)	(0.016)
Mask Wearing Dum * Italy	0.034*	0.069***
	(0.017)	(0.016)
Std. Death Rate		1.5e-3
		(3.9e-3)

Std. Death Rate * Germany	0.013
	(7.6e-3)
Std. Death Rate * Italy	0.022**
	(8.6e-3)
Std. Death Rate * Switzerland	-4.3e-4
	(4.1e-3)
Std. Death Rate * Lockdown Dum	-0.024***
	(5.5e-3)
Std. Death Rate * Mask Wearing Dum	0.024***
	(5.5e-3)
Std. Death Rate * Schools Dum	-1.0e-4
	(5.5e-3)
Std. Death Rate * Lockdown Dum * Germany	8.6e-3
	(0.011)
Std. Death Rate * Lockdown Dum * Italy	0.027*
	(0.012)
Std. Death Rate * Lockdown Dum * Switzerland	0.024***
	(5.8e-3)
Std. Death Rate * Schools Dum * Germany	-0.030**
	(0.011)
Std. Death Rate * Schools Dum * Italy	-5.9e-3
	(0.012)
Std. Death Rate * Schools Dum * Switzerland	-4.3e-3
	(5.5e-3)

Std. Death Rate * Mask Wearing Dum * Germany		-0.019
		(0.011)
Std. Death Rate * Mask Wearing Dum * Italy		-0.029^{*}
		(0.012)
Std. Death Rate * Mask Wearing Dum * Switzerland		-0.026^{***}
		(5.8e-3)
HHI (new deaths)	0.015	
	(0.011)	
National Cases Count	-0.13	
	(1.02)	
R^2	0.37	0.40
Adj. R^2	0.36	0.40
Num. obs.	3168	43916
RMSE	0.12	0.38

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Intercept and polynomial time variables estimated but not shown.

Discussion and Conclusion

In his recent stock-taking of the literature on comparative federalism, Alan Fenna calls for federalism research to 'focus on topics with the greatest relevance to the challenges of the modern world' (Fenna, 2019: Abstract). This study has taken up his call by examining policy responses to COVID-19 in two European countries with federal political systems, Switzerland and Germany – in comparison with two unitary European states, Italy and France – to contribute to our understanding of government responses to this major public health threat. At the same time, we have used the 'shock' of the pandemic to advance more generally our understanding of the impact of institutional differences on public policy.

One major school of thought in federalism research emphasizes that the decentralized power structure of federalism facilitates adapting policies to sub-nationally divergent conditions. This argument relies on subnational political units retaining the freedom to take policy decisions even in the context of a major crisis. Our preliminary analysis of this scope condition found that the German Länder retained policymaking autonomy to a greater extent than Swiss canton, which after the first few weeks – due to the Swiss national government's emergency declaration –only engaged in policy making to a marginally greater extent than the regions of unitary France and Italy.

However, not all policy types are the same, as we argued at the outset. For some policy types, such as lockdowns and school closures, sub-nationally differentiated policies are warranted to balance effectiveness in lowering the epidemiological threat against high economic or other societal costs. For other policies, such as restrictions of mass gatherings and mask-wearing policies, a common (i.e., homogenous) policy at the national level is best.

We have therefore argued that federalism should be beneficial when the optimal policy is a sub-nationally differentiated policy (but might be detrimental when homogeneity is needed, especially in a crisis, because federal systems' additional layer of veto players hinders achieving such homogeneity efficiently). Consistent with this theoretical expectation, we have found that the COVID-19 policies of federal Germany have been more heterogeneous than the policies of unitary France and Italy, especially for policies for which sub-national differentiation is needed; less so for policy types where a common national, homogeneous policy is warranted. Strongly federal Switzerland, by contrast, quickly shifted from sub-nationally heterogenous policies to largely homogenous policies more consistent with unitary countries, though this homogeneity appears to have been largely an artifact of the Swiss central government's decision to temporarily centralize policymaking.

The key question, of course, ultimately is whether the federal units use their greater autonomy to adopt horizontally differentiated policies in such a way that they more effectively respond to sub-nationally divergent conditions. We find little or at best mixed evidence of greater federal responsiveness to the horizontally divergent severity of the pandemic. While the paradigmatically federal Germany responded to the pandemic in a more decentralized and heterogeneous way, it has not been significantly more likely to adopt restrictive policies in areas where such policies are most needed.

The analysis leading to these findings is subject to several limitations. Most importantly, we have examined just four policy types in four countries during a very particular moment in time. External validity might therefore be limited. At the same time, the federal and the unitary countries examined here are unusually comparable, boosting internal validity. And a key element of our argument seems to also find support far afield: In her analysis of rural China, Tsai (2007) finds that the existence of decentralized power structures, even when informal, such as in the case of village lineage groups, encourages public officials to provide more local public goods than they otherwise would, provided that public officials are sensitive to their social standing within such local institutions and thus embedded in them. Decentralization improves the provision of geographically differentiated goods. Mattingly (2016) meanwhile finds that the existence of such decentralized power structures diminishes local public officials' compliance with, or implementation of, unitary policies, specifically the protection of property rights.

If the decentralization and heterogeneity in the adoption of differentiated responses in federal European countries are not a function of greater responsiveness to the severity of the pandemic, then what explains the heterogeneity? Though a systematic answer to this question is beyond the current paper, in general, our findings suggest that federalism – and more generally the decentralization of political power – appears to be no guarantee for more effective policies.

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Study 2: Windows of repression: Using COVID-19 policies against political dissidents?

Introduction

Emergency powers should not be a weapon governments can wield to quash dissent, control the population, and even perpetuate their time in power

— Michelle Bachelet, UN High Commissioner for Human Rights, 27 April 2020.

Governments around the world have adopted a variety of policies to limit the spread of the COVID-19 virus, many of which restrict citizens' rights and civil liberties. By late April 2020 in the Philippines for example, over 120,000 people were cited for quarantine violations and over 30,000 were arrested over COVID-19 related breaches. Instead of issuing citations to alleged violators, the Philippine police threatened to arrest them immediately. In Peru, President Mart´ın Vizcarra mobilized the army and policy to enforce one of the earliest COVID-19 lockdowns in Latin America on 16 March. In contrast, far from enforcing a strict lockdown, the Swedish government, as well as other Scandinavian governments, allowed the vast majority of their populations to engage in voluntary social distancing. What explains the great variation in the adoption, timing and duration of policies made in response to the COVID-19 pandemic not only in the EU but around the world?

In this study, which draws on Barceló et al. (2022), we argue that the global COVID-19 pandemic has created a scenario that impairs the international community and citizens' capacity to exert pressure on states to limit violent actions against civilians. Policies implemented to fight against the spread of the disease are observationally equivalent – or sufficiently observationally-similar to be distinguished only with great uncertainty – to policies commonly used to fight domestic dissent, including curfew and lockdown policies. This observational equivalence or similarity limits the capacity of the international community and citizens to exert pressure over repressive regimes. Hence, governments that have underlying incentives to oppress their citizens can take advantage of the global health crisis to strengthen repressive measures to control domestic dissidents without bearing the costs of greater international and domestic pressure.

Following this logic, we hypothesize three connected processes. First, in the wake of the global pandemic, governments with a history of repressing citizens are more likely to order restrictive preventive measures at all compared to governments that do not. Similarly, repressive governments also have greater incentives to embrace restrictive policies earlier because such policies not only allow them to achieve public health objectives, but also allow them to respond to domestic dissent. And, finally, governments with a history of repressing citizens are also more likely to impose these policies for longer periods compared to governments that do not.

To evaluate our hypotheses, we make use of the CoronaNet Government Response Dataset (CoronaNet) with data collected until 31 August 2020 (Cheng et al., 2020). We complement this dataset with geo-located information on violence against civilians reported in the Armed Conflict Location and Event Dataset (ACLED) (Raleigh et al., 2010) and the Latent Human Rights Protection Scores (e.g., Fariss et al., 2020). Meanwhile, we assess our data on a set of countries in Europe and beyond in order to leverage differences in history of repression to evaluate our hypotheses.

Based on a variety of statistical models and model specifications, we find that abusive governments are between 10 and 15% more likely to restrict citizens' freedom of movement through stay-at-home orders compared to non-abusive ones. Furthermore, such governments are also more likely to implement such policies earlier in the pandemic by approximately 48 days and to keep them in place by an additional 23 days compared to governments without such track records.

Our results have implications for understanding how the repressiveness of state institutions shapes policy responses to a global health crisis, which speaks to several strands of literature. First, it builds on the rich literature studying the behavioral and institutional causes and consequences of various forms of political violence, including wartime violence, terrorist attacks, rioting, and state repression (Balcells and Stanton, 2020). In a recent contribution, Aksoy et al. (2020) specifically evaluate the political consequences of curfews in Turkey, showing that curfews increase support by the majority group for the ruling party, while having the opposite effect on the minority group. Closer to this paper, Grasse et al. (2020) show that African countries have intensified their repressive campaigns after imposing lockdowns. This paper complements this work by arguing that the COVID-19 public health emergency has opened a window of opportunity for governments to engage in repressive behavior without countervailing pressure from citizens and the international community. Additionally, our empirical evidence showing that abusive governments are more likely to adopt stay-at-home orders is fully consistent with Grasse et al.'s (2020) results showing that lockdowns, once adopted, serve to intensify state violence in areas of dissent.

Second, it speaks to the literature on the dynamics of political violence in the context of natural disasters. Some work considers when and how droughts, floodings, earthquakes, and other disasters impact political violence with no clear-cut consensus (e.g., Koubi, 2019; Lehrs, 2022). Other work on disasters has looked at their effects on violence with evidence showing that disasters reduce conflict in the short-term (Haer and Rezaee Daryakenar, 2022), and increase the chances of rebel groups to seek negotiations with the government (Nemeth and Lai, 2022). Similarly, Koehnlein and Koren (2022) show that COVID-19 prevalence increases the likelihood of attacks against civilians by pro-government non-state actors. We specifically contribute to this literature by showing that states' response to a global health disaster depends on their pre-existing incentives to repress domestic dissent.

This paper also contributes to the emerging literature of the causes and consequences of the COVID-19 pandemic. Social scientists have, thus far, provided a wealth of research on the social and political correlates of COVID-19 policy responses. Some have focused on explaining what has driven citizens' reaction to the pandemic and the associated policies, including partisanship (e.g., Kubinec et al., 2021), political polarization (e.g., Allcott et al., 2020), institutional trust (Goldstein and Wiedemann, 2020), institutional messaging (e.g. Arriola and Grossman, 2021), and social norms (e.g. Barceló and Sheen, 2020). Other scholars have uncovered the cross-national determinants of the policy response to the pandemic, including democratic institutions (e.g., Frey et al., 2020), federal institutions (see previous study 1: Patterns of Policy Responses to the COVID-19 Pandemic in Federal vs. Unitary European Democracies), and state capacity (e.g., Frey et al., 2020). Our study contributes to this literature by emphasizing the role of incentives to repress and, more specifically, by demonstrating that a recent history of political violence and a lack of human rights protection is associated with cross-country variation in government responses to the COVID- 19 pandemic.

Dissent takes place when non-state actors collectively genuinely do, or threaten to, impose costs on their government to encourage a change in the status quo (Ritter et al., 2016). Violent and non-violent acts, such as strikes, boycotts, riots, and non-violent protests, taken by dissenters can endanger the government's hold on power. One way in which states can respond to these challenges to its power include repressing the dissidents (Ritter et al., 2016).

State repression "involves the actual or threatened use of physical sanctions against an individual or organization, within the territorial jurisdiction of the state, for the purpose of imposing a cost on the target as well as deterring specific activities and/or beliefs perceived to be challenging to government personnel, practices or institutions" (Davenport, 2007, drawing on Goldstein 1978, xxvii). Repression can be targeted toward individuals or particular groups (e.g., arrests) or indiscriminately applied toward entire collectives (e.g., curfews or lockdowns). Lockdowns and curfews, which are imposed on everyone within a geographical area and, thus, apply equally to political dissenters as well as apolitical civilians, are one common form for indiscriminate repression (Aksoy et al., 2020). Though most have non-violent enforcement mechanisms (e.g. fines), in some cases, violations can be punished, lead to imprisonment and, in extreme cases, even death (Brass, 2006).

Why do governments choose to repress dissenters as opposed to give in to their demands? Scholarly consensus suggests authorities repress their citizens to control dissent (e.g., Davenport, 2007). States are more likely to use collective repression, as opposed to relent to dissenters' demands, when the state's capacity to survive a wide-spread rebellion is weak, when cross-group polarization is strong, and when there are grievances across the entire society (Rozenas, 2020). Repression and dissent are, however, endogenous (Ritter et al., 2016). Governments often respond to threats to its authority with repressive behavior. At the same time, state repression strongly raises the likelihood of dissent. That is, though governments engage in repressive behavior in the hopes that forceful action will deter further dissent, repression often provides incentives for the very behavior governments intend to deter (Hill Jr and Jones, 2014; Siegel, 2011).[399] Nonetheless, the same literature also suggests that violent collective

[399] However, see Lyall (2009) or Barceló (2018) for null or inconsistent findings for the backfire theory of state repression.

repression is at best ineffective and at worst counter- productive when responding to dissident challenges (Valentino, 2014).

The literature identifies two major arguments as to why states still use collective repression despite potential backfire effects: state capacity and signaling. With regards to state capacity, states often do not have the resources to apply targeted repression and therefore must use low-cost collective repressive measures. To repress individual citizens, the state must obtain costly intelligence about their behaviors. As such, only states that have the resources to control, monitor, and collect taxes from the population will have the capacity to selectively crack down on domestic dissidents. Even states with high capacity may choose to engage in relatively low-cost collective repression. Indeed, Hitler was quoted as saying, "I shall spread terror through the surprising application of all means. Why should I deal otherwise with all my political opponents? These so-called atrocities save me hundreds of thousands of individual actions against protesters and discontents" (Hitler, quoted in Gurr (1986, 46-47)). In general then, while states with low capacity cannot apply selective repression and must therefore rely on less efficient forms of collective repression (Kalyvas, 2006), all states may plausibly choose collective repression over targeted repression because of its lower costs.

Second, states may also intentionally use collective repression as a signaling device. In an environment of incomplete information with repeated interaction, strategic actors have incentives to engage in a reputation-building strategy (Kreps and Wilson, 1982). By indiscriminately repressing more civilians, states send a strong signal of resolve that they will maintain the status quo. This unwavering message to enemies that policy concessions will not be granted allows them to build a domestic reputation of steadfastness (Acemoglu and Robinson, 2000). In these settings, even if the state has the capacity to selectively repress, it can choose not to. For instance, executors of state violence in El Salvador were instructed to indiscriminately repress the indigenous population even in the absence of evident disloyalty (Lauria-Santiago and Gould, 2008).

While its theoretical logic is sound, the signaling argument is wanting on the grounds of empirical consistency. In many instances, states not only abstain from publicizing their repressive measures, but also attempt to obfuscate them (Gruffydd-Jones, 2019; Shadmehr and Bernhardt, 2015), particularly when applying large-scale indiscriminate repression. Abusive states may believe that the expected political benefit of repressing domestic challengers is positive only if it remains hidden to the international community (Afesorgbor, 2019). Indeed, repressive measures can be costly if they become publicly reported as they could damage a country’s international reputation or legitimacy and lead to significant consequences in the form of breaking clauses in preferential trade agreements (Hafner-Burton and Tsutsui, 2005), economic sanctions (Afesorgbor, 2019), and even military interventions (Conley and Hazlett, 2019).

International pressure can directly reduce the likelihood and severity of state repression. By calling attention to repressive state behaviors, external actors such as international organizations (DeMeritt, 2012), other states (Terman and Voeten, 2018), human rights tribunals (Appel, 2018), international media (Krain, 2012), and human rights NGOs (Murdie and Davis, 2012) can pressure repressive governments to align with global norms and reduce their abusive behavior.

Beyond its direct influence on state repression, public criticism may trigger further external action that makes it costly for states to continue behaving repressively. This may work through several pathways. First, repressive states may be excluded from international treaties if systematic human rights abuses come to light. Some scholars demonstrate that adding human rights clauses to economic agreements effectively reduces state repression, especially among countries that depend on foreign aid (Hafner-Burton, 2005; Donno and Neureiter, 2018). Second, foreign aid may be withdrawn as a result of state abuses. Lebovic and Voeten (2009) show that multilateral institutions (e.g., the World Bank) punish countries that violate human rights by reducing their allocated amount of foreign aid. Third, regardless of their actual effectiveness in preserving human rights, stopping state repression constitutes one of the major explanations for imposing economic sanctions (Hufbauer et al., 1990). At an extreme, public knowledge of ongoing large-scale state violence may lead to foreign military intervention to end mass atrocities (Conley and Hazlett, 2019).

The Global Pandemic Opens a Window of Repression

External states and citizens are willing to sanction countries if they engage in repressive action (McLean and Roblyer, 2017). International pressure can deter or mitigate state re- pression against civilians through several mechanisms, including international treaties, aid, sanctions, and even foreign interventions to stop large-scale violence. While collective repression itself has relatively low operational costs compared to targeted repression and may additionally provide domestic signaling benefits to its users, external pressure may raise international reputational costs enough to overcome these perks. However, international pressure crucially depends on the ability of external actors to observe repressive state actions, and such actions can only be observed imperfectly through indirect sources. As such, since sanctions are costly, international actors only impose sanctions if both the degree of a government's domestic repression and certainty that the repression is unjustified is high.

In the past, sovereign states have commonly made use of stay-at-home orders, in the form of lockdowns or curfews, as an important collective repressive tool to quell politically- motivated violence from domestic challengers (Brass, 2006). The government of Sri Lanka, for instance, has implemented several nation-wide curfews to reduce ethnic violence since 1983; the Indian national government has made use of curfews and lockdowns to tackle potential unrest in Kashmir, and the Egyptian government imposed a curfew during the 2011 uprising, just to mention a few examples. Across most cases, stay-at-home orders have had significant implications for the safety and well-being of those who live within the bounded areas, including food shortages, limited access to health and education, and even severe violations of the right to physical integrity and life (Brass, 2006).

Whereas curfews and lockdowns typically characterize repressive action by abusive governments against civilians in ordinary times; these policies have become essential components of most governments' policy toolbox amidst the COVID-19 global pandemic (Flaxman et al., 2020). The majority of national governments have implemented large-scale public health and safety measures such as lockdowns and curfews in response to the spread of the COVID-19 (Cheng et al., 2020). Figure 38 documents the sudden spike in the stay-at-home orders around the world between mid-March and mid-April 2020, reaching a peak in the second week of April, and a gradual easing of restrictions from then on.[400]

[400] The first stay-at-home order in the dataset goes back to the province of Jiangxi, China, on 6 February 2020. Before that date, stay-at-home orders had affected a few cities, counties, and districts in the provinces of Anhui, Hubei (including the city of Wuhan, the earliest epicenter of the pandemic), Liaoning, Jianxi, Shaanxi, Shandong, Sichuan, Zhejiang. However, Jiangxi provinces' stay-at-home order was the first time a stay-at-home order affected an entire first-level administrative unit in China.

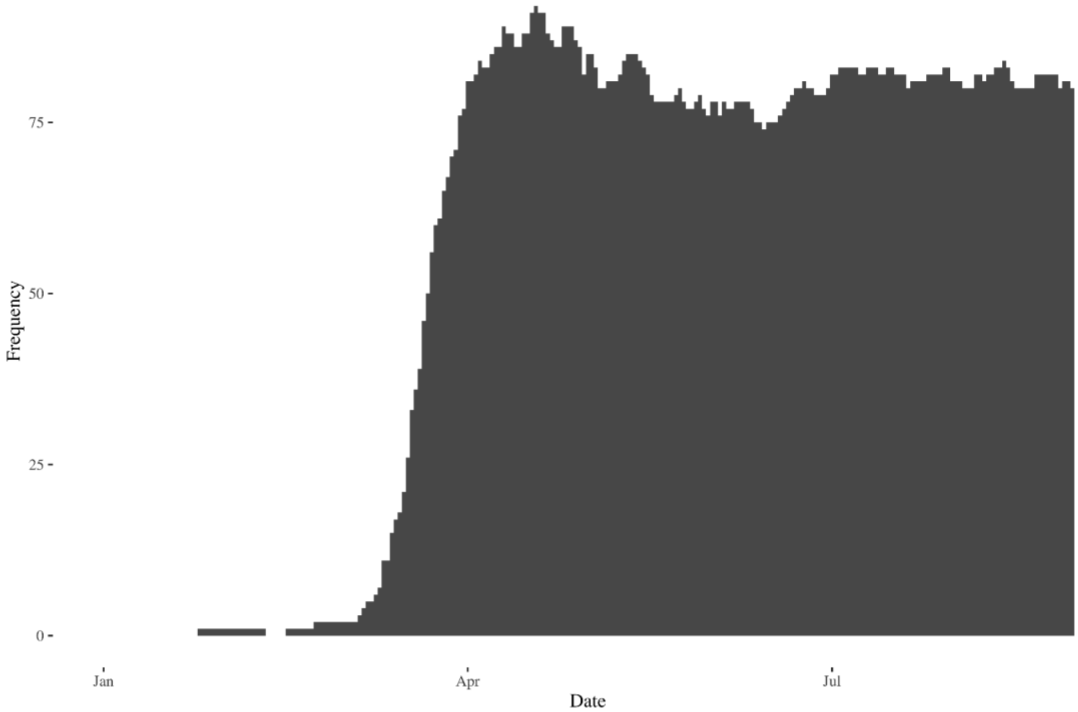

Figure 38: Timeline of stay-at-home orders around the world

Note: The barplot reflects the frequency of a stay-at-home order in place in the sample (135 countries) and the time period (243 days) in the analysis.

In the wake of the COVID-19 pandemic however, distinguishing between measures taken to limit the spread of the virus and those to address dissent against the government has become difficult. Governments have contained the spread of the virus by adopting stay-at-home orders, internal border restrictions, restrictions of mass gatherings, which, in appearance, are often observationally equivalent to repressive policies adopted to fight domestic dissent. In this scenario, even if some countries employ these policies to repress rather than prevent the spread of the virus, citizens or external actors cannot intervene or exert pressure because they are ignorant of the true reason behind those policies.

In some instances, containment and repressive policies might be not completely observationally-equivalent, but are nevertheless so sufficiently similar that there is too much potential for error to object. Whereas external states and citizens are willing to sanction countries if they engage in repressive action, doing so is costly. Citizens may find it difficult to mobilize against governments if the repression measures are for an apparently legitimate public health purpose, which may have helped stall protest movements in Hong Kong and Algeria.[401] Besides the obvious economic costs of sanctioning and intervening in foreign countries, in the context of the pandemic, international actors are particularly risk averse in interfering in domestic affairs given that a false step can send mixed signals about the efficacy of containment policies in general. Thus, they would be unlikely to raise objections, let alone intervene over a country's stay-at-home order if there is sufficient uncertainty about the true intentions of the government. Even if such policies were merely observationally similar, as opposed to observationally equivalent, international actors would still be impaired in their ability to constrain the use of such policies.

Governments with underlying incentives to oppress their citizens thus may find in the global pandemic a window of opportunity to strengthen their repressive measures to further control domestic dissent without bearing the costs of greater international or domestic pres- sure. Specifically, a public health crisis increases uncertainty about the reason for repression and permits abusive governments to repress without facing international pushback.

While we cannot directly observe the sincere intentions of specific governments, we test and evaluate three observable implications consistent with our logical argument. Due to the uncertainty about the reason for the adoption of restrictive policies, we first expect abusive governments to be, on average, more likely to adopt restrictive policies at any point in time compared to governments that have no record of state violence or a record of human rights respect and protection. This leads to our first hypothesis:

Hypothesis 1: *Governments that abuse human rights or those with a recent history of violence against civilians are likely to impose restrictive measures earlier in the pandemic than governments that protect human rights or have no recent history of violence against civilians.*

[401] See Wong, Brian. (2020) "Hong Kong's Protests Amid COVID-19: A Dying Movement or a Halted War?" *The Diplomat.* Retrieved 27 April 2023 from: https://thediplomat.com/2020/04/hong-kongs-protests-amid-covid-19-a-dying-movement-or-a-halted-war/ for a discussion of Hong Kong's protest movement amid COVID-19.

Second, we also expect that abusive governments may readily embrace the imposi- tion of restrictive policies more quickly than non-abusive governments, even controlling for public health drivers. Following this intuition, we hypothesize:

Hypothesis 2: *Governments that abuse human rights or those with a recent history of violence against civilians are more likely to adopt restrictive measures than governments that protect human rights or have no recent history of violence against civilians.*

In a scenario where repressive policies may receive little or no pushback, not only do abusive governments have incentives to impose more restrictions but they should also be more reluctant to lift restrictions once the pandemic wanes. This logic leads to our third empirical hypothesis:

Hypothesis 3: *Governments that abuse human rights or those with a recent history of violence against civilians are more likely to impose restrictive measures for longer periods than governments that protect human rights or have no recent history of violence against civilians.*

Data

Our main data source is the CoronaNet Government Response Dataset (CoronaNet) (Cheng et al., 2020). While more information is found in Chapter 4 of this deliverable,in brief, CoronaNet is an ongoing data collection project, which covers systematic information on the multitude of policy responses governments have taken to address the spread of the COVID-19 virus. We choose to use CoronaNet over other existing datasets because it has greater coverage (over 190 countries), a rigorous and systematic data validation procedure, provides portable document formats with the information source, and fine-grained information about the initiator, target, and enforcement mechanism of the policy. However, we limit our analysis to the first wave of the pandemic as this is the time where all countries had to quickly react to an unexpected global crisis. As such, the time span of our analysis to 31 August 2020 because by this time, most countries experienced the first wave of the pandemic. Please see Chapter 4 for more information about the CoronaNet dataset.

We measure the timing of implementation of stay-at-home orders, either in the form of a “Curfew” or a “Lockdown”, for at least one first-level administrative unit in the country (i.e., state, region). To define terms, a curfew is implemented if there are “government policies that limit domestic freedom of movement to certain times of the day” and a lockdown is implemented if there are “government policies that force citizens to stay at home all the day except for essential activities”.[402] See Cheng et al. (2020) for further details on the definitions of policy types.

We complement the CoronaNet data with two datasets that separately capture governments’ predisposition to repress domestic dissent. First, we use geo-located information on observed violence against civilians provided in near-real time from the Armed Conflict Location and Event Dataset (ACLED) before the COVID-19 outbreak (Raleigh et al., 2010). ACLED collects fine-grained data on the locations, dates, and actors of all reported political violence across most countries around the world. For our empirical analyses, we use the ACLED data on“violence against civilians”, which is defined as “violent events where an organized armed group deliberately inflicts violence upon unarmed non-combatants” (ACLED). By definition, the perpetrators of such acts can only be state forces and their affiliates such as rebels, militias, and external forces. We exclude from our measure of state repression any event in which the perpetrator of violence was not the state, e.g., rebel groups against unarmed civilians or civilians against civilians.[403] Importantly for our coding strategy, we include any attempts at inflicting harm (e.g., beating, rape, mutilation) against civilians or forcibly disappearing (e.g., kidnapping) civilian actors.[404] The main explanatory variables from ACLED in the models is the number of events involving violence against civilians per one million population in the country.[405] The time window for counting the number of events is the entire year of 2019. However, none of our findings are sensitive to this time window (see the online Appendix E in Barceló et al. (2022)).

While ACLED provides fine-grained data on political violence around the globe, it comes with two major limitations as a measure of state repression. First, ACLED only records

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[402] Note then, that curfews and lockdowns are different methods of restricting civilian movement and as such are mutually exclusive policies, i.e. countries that impose lockdowns cannot impose a curfew at the same time.

[403] See the Online Appendix F for how sensitive our findings are when including all episodes of violence against civilians regardless of the perpetrating actor: the results remains substantively unaltered.

[404] The three subcategories of violence against civilians that are added to create our measure of violence are: “Sexual violence”, “Attacks”, and “Abduction/Forced Dissapreance”.

[405] We use the number of events rather than the number of fatalities because the number of fatalities is associated not only with the governments’ willingness to repress domestic dissent but also with their skilfulness at doing so.

repressive events that are realized, publicly observed, and documented. That is, ACLED does not capture the uncertainty associated with count data of difficult-to-observe events. Hence, an accurate measure of a comprehensive repressive behavior is, following our own logic, complicated by the fact that governments have reasons to conceal these events from the international community. Second, while ACLED collects information from nearly every country in Africa, Asia, Latin America and the Caribbean, as well as Eastern Europe, countries from Western Europe, North America and Oceania are not available in the dataset. In total, our analysis includes 135 countries (see the online Appendix A for a list of countries, the online Appendix C for descriptive statistics, both in Barceló et al (2022)). We evaluate the potential impact of this non-random missingness in the online Appendix G in Barceló et al (2022).

We further bolster our analysis with data from the Latent Human Rights Protection Scores (Version 4). These scores measure the physical integrity rights protection in each country-year by using a dynamic item response model that aggregates a bundle of hard-to-observe repressive indicators (e.g., torture, ill-treatment, imprisonment, violence) in a summary score (Fariss, 2014; Fariss et al., 2020; Reuning et al., 2019). Fariss et al. create a single latent measure of repression for countries in a given year drawing on 16 different sources of human rights information, including the CIRI Human Rights Data Project (Cingranelli and Richards, 1999), the Ill-Treatment and Torture (ITT) Country-Year Data (Conrad et al., 2013), the Political Terror Scale (Gibney et al., 2019), and the UCDP One-sided Violence Dataset, 1989-2015 (e.g., Eck and Hultman, 2007), among others.

The Latent Human Rights Protection Scores has major benefits that complement our above-mentioned ACLED indicator of actual violence against civilians and over alternative approaches. First, it assesses states based on their aggregate level of performance on physical integrity rights across an extensive bundle of indicators. Therefore, this indicator is not just dependent on observed violence against civilians but it also incorporates other forms of state repressive behavior such as torture, ill-treatment of prisoners, unlawful imprisonment of citizens, and state-led threatening events. Second, the latent human rights protection scores cover more countries (e.g., 194 countries in 2019, including countries in Europe) than any individual data source by combining information from all other data sources. For instance, another frequently used alternative dataset of human rights protection, the CIRI dataset, was discontinued in 2011 (Cingranelli and Richards, 1999). The latent human rights protection scores, thus, enables us to evaluate our main hypotheses using a global sample of 182 countries. Finally, we include three sets of controls to our models: political, population and economic, and public health controls that we describe in detail in the online Appendix B.

Research Design

In what follows, we give an overview of our research design for testing each of our three hypotheses. First, we build a cross-sectional dataset to assess whether countries with a lower human rights record or a recent history of repression against civilians are more likely to implement restrictive measures such as stay-at-home orders. To evaluate our first hypothesis, we create a binary variable that takes the value of 1 if the country implemented a stay-at- home order anytime between 1 January 2020 and 31 August 2020, and 0 otherwise. We then implement a set of logistic regressions where the adoption of a stay-at-home order in the country is regressed on the level of protection of human rights or the repression against civilians immediately before the beginning of the pandemic together with our extensive set of control variables and region fixed-effects.

For our second hypothesis, the outcome variable is the timing of implementation of stay-at-home orders in the country. The outcome variable is operationalized as the number of days between the first confirmed case of COVID-19 in a country and the adoption of a stay- at-home order, either a lockdown or a curfew. We run a set of proportional hazard models to evaluate whether those countries with a lower protection of human rights or greater state repression against civilians before the outbreak implement restrictive measures more quickly than countries with no such background or record. Our extensive set of control variables and region fixed-effects are included in these models.

Finally, we evaluate our third hypothesis by creating a variable that captures the number of days, either consecutive or not, that a country has had a stay-at-home order in place between 1 January 2020 and 31 August 2020. We then employ OLS regression models where the number of days with a stay-at-home order in the country during our time period is regressed on the level of protection of human rights or the repression against civilians immediately before the beginning of the pandemic, as well as our extensive set of control variables and region fixed-effects.

Results

In this section, we provide our evaluation for our three hypotheses in three separate subsections.

Are Repressive States More Likely to Impose Stay-at-home Orders?

We first examine whether countries that used greater violence against civilians in 2019 are more likely to implement stay-at-home orders compared to countries with no recent history of using violence against civilians. We also re-estimate the model using a measure of human rights as opposed to state violence.

Table 3 reports a set of logistic regressions that model whether a stay-at-home order was adopted in the country as a function of the recent record of violence against civilians in the year preceding the outbreak or a country's human rights protection score. Both models sequentially incorporate region fixed effects, political, economic, and health control variables.

Table 3: Logistic regressions on the effect of state repression and human rights scores on adopting stay-at-home orders

	DV: Adoption of a stay-at-home order							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
N of violent events (log) (per one million population)	0.66** (0.24)	0.59* (0.26)	0.71* (0.28)	0.64* (0.30)				
Human rights protection score					−0.55** (0.14)	−0.58** (0.20)	−0.69** (0.21)	−0.70** (0.22)
Democracy score (V-Dem)		−0.78 (1.13)	−0.09 (1.19)	1.39 (1.44)		0.59 (1.11)	1.74 (1.20)	3.35* (1.39)
State capacity		0.06 (0.38)	−0.70 (0.53)	0.12 (0.59)		−0.02 (0.29)	−0.72† (0.42)	−0.09 (0.47)
Intrastate armed conflict (historical)		0.47 (0.45)	0.62 (0.47)	0.88† (0.52)		0.40 (0.42)	0.54 (0.44)	0.72 (0.47)
GDP per capita (log)			0.84* (0.41)	0.68 (0.46)			0.70* (0.34)	0.34 (0.38)
GDP annual growth			0.03 (0.07)	0.01 (0.08)			−0.05 (0.06)	−0.07 (0.07)
Population density ('000)			0.92 (1.18)	1.98 (1.69)			0.38 (0.39)	0.36 (0.38)
Population aged 70 or older (percentage)				−0.32* (0.14)				−0.14 (0.10)
Diabetes prevalence				0.19† (0.11)				0.26** (0.09)
Cardiovascular death rate				0.01* (0.003)				0.004† (0.002)
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	135	135	135	135	182	180	180	178

†p<0.1; *p<0.05; **p<0.01. Standard errors in parentheses. Region-fixed effects include: Africa, Asia, Europe, North America, South America, and Oceania. Constant omitted from the output.

Columns 1 through 4 show that the estimated effect of recent state repression is positive and significant at the 99% confidence level for the unadjusted model and significant at the 90% level in the fully-adjusted model, indicating that countries with a recent history of violence against civilians are more likely to adopt stay-at-home order. Figure 2 illustrates the size of the effect. For one-unit increase in the logged number of ACLED violent events[406] – e.g., going from the mean of 6 violent events to 16 violent events — increases the expected probability of a stay-at home order by approximately 10 percent when averaged over the sample values of control variables.

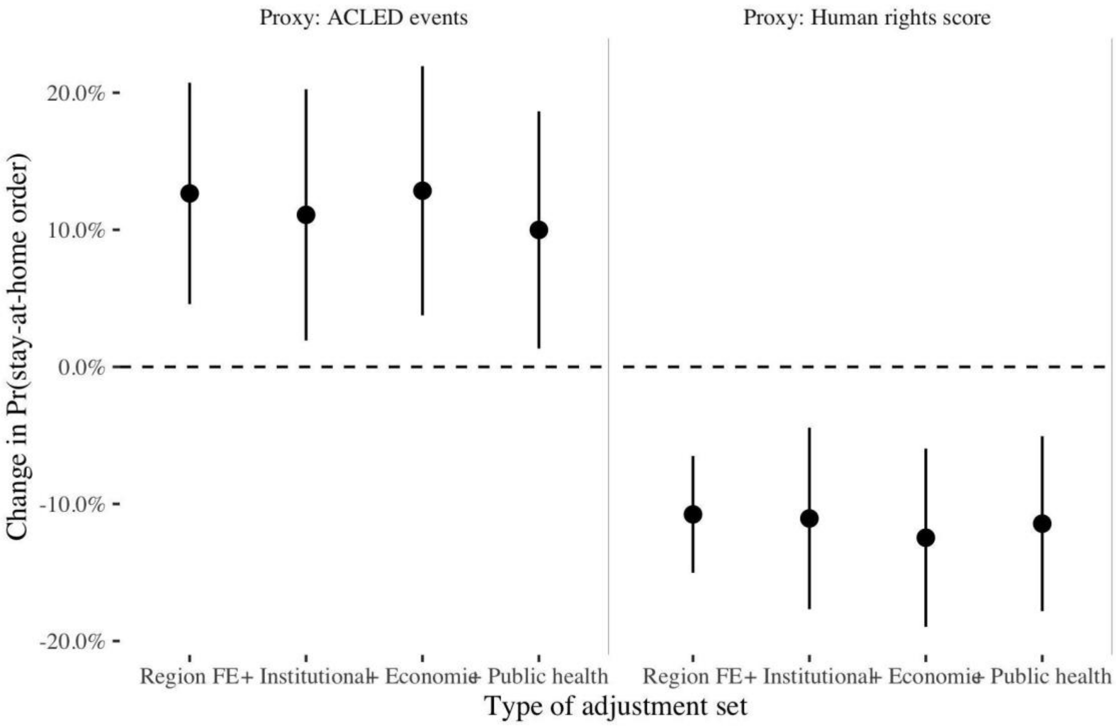


Figure 39: Change in Marginal Probabilities of Stay-at-Home Orders Given History of Repression and Human Rights Protection Scores

Note: Figure 39 shows sample average marginal changes in the probability of a stay-at-home order being imposed during the sample period given a one-unit increase in the explanatory variables. Points are point estimates and the intervals are the 5% to 95% confidence interval. Models are listed in terms of which controls are added to the model; see Table 1 for the full list of controls added to each model.

Similarly, Columns 5 through 8 also indicate that the estimated effect of human rights score before the beginning of the pandemic is significantly associated with the adoption of a stay-at-home order with a negative coefficient that is significant at the 99% confidence levels across all models. The negative coefficients indicate that countries whose human rights scores are lower are more likely to adopt stay-at-home orders. Figure 39 also shows that this effect is sizable. Countries whose human rights score increases by one unit, or approximately 1-SD, have a 10-20 percent lower chance of

[406] 1-log is roughly equivalent to one standard deviation (sd = 1.03) in the distribution of the number of ACLED events.

having a stay-at-home order imposed when averaged over the sample values of control variables.

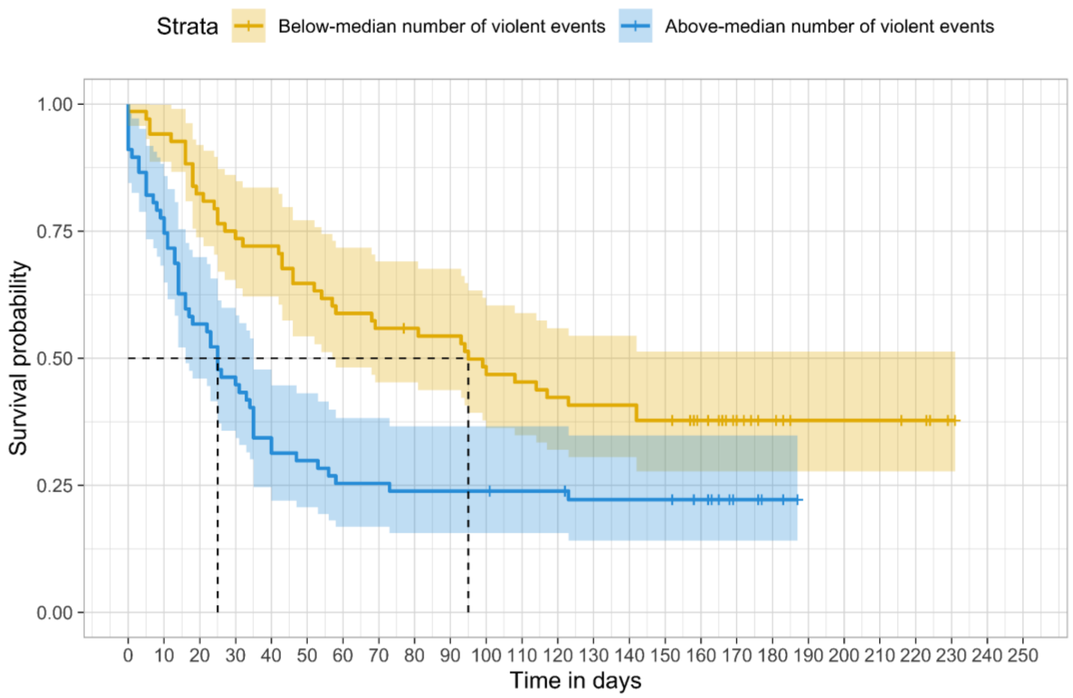
The empirical patterns provide support to the argument that abusive governments, as measured by either a measure of observed violence in the preceding year or combined human rights scores before the pandemic, are more likely to implement restrictive policies against the COVID-19.

Are Repressive States Quicker in Imposing Stay-at-home Orders?

We begin by considering some graphical descriptive evidence to evaluate our second hypothesis. Figure 40 plots the cumulative probability that a state did not implement a stay at home order starting from the day of the first COVID-19 case (right-censored at 31 August 2020) to the adoption of a stay-at-home policy in at least one of the country's regions.[407] The color of the lines and the 95% confidence intervals indicate whether the country had a below-median (blue) or above-median (yellow) level of state repression in 2019 (Figure 40a), or a below-median (blue) or above-median (yellow) combined score in the protection of human rights.

[407] Or the equivalent to the first subnational division in the country.

(a) Number of events of violence against civilians



(b) Human rights protection

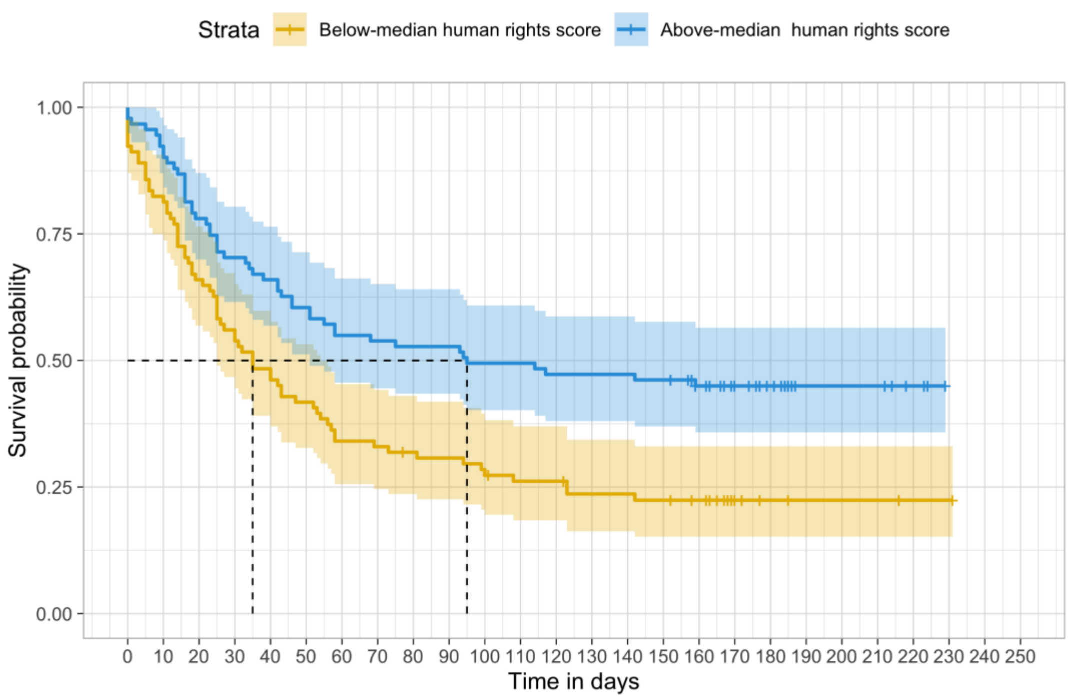


Figure 40: Survival probability plots of COVID-19 policy response by preceding violence against civilians and human rights protection scores

The difference in slopes between countries that are below versus above the median in terms of a history of repressing their citizens or violating basic human rights suggests that there is a relationship between using violence against civilians or a poor record of human rights and the timing of imposing restrictive measures in responding to the pandemic. Abusive governments implemented a stay-at-home order on average 25 days after the first confirmed case– when measured as an above-the-median number of violent events against civilians in 2019 – and 35 days – when measured as a below-the-median human rights score. In contrast, countries that had a below-the-median level of violence against civilians in 2019 take on average 35 days to implement a stay-at-home order while countries that had an above-the-median in the protection of human rights score take on average 95 days.[408]

It is clear from this descriptive evidence that countries that have used violence against civilians in the months preceding the occurrence of its first COVID-19 case or score low in the protection of human rights have implemented restrictive measures more quickly than similar countries that have had no recent history of using violence against civilians or a record of violating human rights. However, this evidence is only suggestive given that it relies on a crude measure of violence — a simple dummy based on above and below the median of events and human right scores — and does not control for potential confounders. For a more robust analysis, Table 4 reports Cox proportional hazards models that estimate the number of days from the first COVID-19 confirmed case in the country to the adoption of a stay-at-home order given the number of events involving violence against civilians and the number of fatalities in these events. We note that in Cox proportional hazards regression models, coefficients indicate the hazard rate, i.e. is the risk of “failure” (in this case, the probability of adopting a stay-at-home order), given that the event has not yet occurred (in this case, given that the country has not already implemented a stay- at-home order). Therefore, predictors with positive coefficients are factors that increase the likelihood that a policy is implemented more quickly.

[408] The differences in slopes are statistically significant when using both the number of events (log-rank test, $p < 0.01$) and the human rights scores (log-rank test, $p < 0.01$).

Table 4: Cox proportional hazards model of estimating the effect of state repression in 2019 and human rights scores on the time to adopting a stay-at-home order

	Days from 1st COVID-19 confirmed case to stay-at-home order							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
N of violent events (log) (per one million population)	0.48** (0.10)	0.43** (0.11)	0.49** (0.12)	0.45** (0.12)				
Human rights protection score					−0.32** (0.07)	−0.30** (0.11)	−0.32** (0.10)	−0.30** (0.11)
Democracy score (V-Dem)		−0.31 (0.59)	0.02 (0.62)	0.68 (0.70)		0.49 (0.59)	0.95 (0.62)	1.56* (0.69)
State capacity		−0.22 (0.20)	−0.66* (0.26)	−0.46 (0.28)		−0.29† (0.16)	−0.61** (0.22)	−0.45† (0.23)
Intrastate armed conflict (historical)		−0.09 (0.25)	0.04 (0.26)	0.12 (0.26)		0.01 (0.24)	0.11 (0.24)	0.14 (0.25)
GDP per capita (log)			0.47* (0.18)	0.42* (0.21)			0.33† (0.17)	0.19 (0.19)
GDP annual growth			0.04 (0.04)	0.01 (0.04)			−0.01 (0.03)	−0.02 (0.03)
Population density ('000)			0.46 (0.46)	0.60 (0.47)			0.20 (0.14)	0.18 (0.14)
Population aged 70 or older (percentage)				−0.10 (0.06)				−0.02 (0.05)
Diabetes prevalence				0.03 (0.04)				0.09** (0.03)
Cardiovascular death rate				0.002† (0.001)				0.001 (0.001)
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	135	135	135	135	182	180	180	178

†p<0.1; *p<0.05; **p<0.01. Standard errors in parentheses. Region-fixed effects include: Africa, Asia, Europe, North America, South America, and Oceania.

The Cox models show that countries that experienced a greater number of fatalities from violence against civilians in the months immediately preceding the pandemic are more likely to implement stay-at-home orders earlier than those with no recent record of violence against civilians. Table 4 consistently indicates a positive and statistically significant effect at the 99% confidence level with and without adjusting for control variables (columns 1 through 4). These estimated effects are also substantively sizable.

We can interpret these numbers by calculating expected duration; i.e., the average number of days until a policy is implemented holding the covariates constant (Harden and Kropko, 2019). Using our saturated model, we can calculate that the average time until adoption of a stay-at-home order varies from 120 days after the first COVID case for a country with a prior history of only 1.4 violent events in 2019 (the 25th percentile) to 72 days after the first COVID case for a country with a comparatively higher history of 5.5 violent events in 2019 (the 75th percentile), which means a difference of 48 days.

Table 4 also reports a consistent negative effect of the latent human rights protection score on the adoption of stay-at-home order, indicating that countries that often violate human rights adopted stay-at-home orders earlier in the pandemic compared to otherwise similar countries with better scores in the index of human rights protection. Based on our saturated model, we can calculate that an increase in the human rights protection score from -0.37 to +1.88, which corresponds to the 25th and 75th percentiles, is associated with a time from the first case until the implementation of a stay-at-home order that is longer by 50 days: from 86 days (25th percentile) to 136 days (75th percentile).

Are Repressive States More Likely to Impose Longer Stay-at-home Orders?

Lastly, we evaluate whether countries that had used violence against civilians in the months preceding the beginning of the pandemic and countries that have a poor record of human rights are more likely to impose longer stay-at-home orders than countries with no recent history of using violence against civilians or with a better record of human rights.

Table 5 estimates the effect of a recent history of state repression against civilians on the length of stay-at-home orders in the country using an OLS model (columns 1–4). The main explanatory predictor in columns is the log of the number of events per one million population from state-led violence against civilians. As above, models are adjusted for major predictors of repression (regime type, state capacity, economic development, domestic war history, economic growth, and population density) and country-specific predictors of the pandemic risk (population aging and two indicators of pre-pandemic health status).

Table 5: OLS regressions on the effect of recent violence against civilians and human rights score on the length of stay-at-home orders

	Number of days with a stay-at-home order in the country (log)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
N of violent events (log)	0.59**	0.47*	0.53**	0.47*				
(per one million population)	(0.18)	(0.20)	(0.20)	(0.19)				
Human rights protection score					−0.41**	−0.53**	−0.58**	−0.52**
					(0.09)	(0.15)	(0.15)	(0.15)
Democracy score (V-Dem)		−0.63	−0.12	1.02		1.11	1.78*	2.63**
		(1.19)	(1.24)	(1.19)		(0.88)	(0.90)	(1.00)
State capacity		−0.15	−0.62	−0.12		0.06	−0.60†	−0.26
		(0.31)	(0.42)	(0.40)		(0.22)	(0.33)	(0.32)
Intrastate armed conflict		0.34	0.43	0.58		0.38	0.48	0.59
(historical)		(0.41)	(0.42)	(0.42)		(0.38)	(0.37)	(0.37)
GDP per capita (log)			0.56†	0.47			0.62**	0.42
			(0.31)	(0.37)			(0.24)	(0.28)
GDP annual growth			0.01	−0.03			−0.05	−0.08
			(0.06)	(0.06)			(0.05)	(0.05)
Population density ('000)			0.33	0.59			0.28	0.25
			(0.68)	(0.94)			(0.44)	(0.55)
Population aged 70 or older				−0.25**				−0.05
(percentage)				(0.08)				(0.05)
Diabetes prevalence				0.07				0.11*
				(0.07)				(0.05)
Cardiovascular death rate				0.004†				0.003†
				(0.002)				(0.002)
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	135	135	135	135	182	180	180	178

†p<0.1; *p<0.05; **p<0.01. Robust standard errors in parentheses. Region-fixed effects include: Africa, Asia, Europe, North America, South America, and Oceania. Constant omitted from the output.

The results in Table 5 indicate that the log in the Number of events per one mil- lion population is associated with the imposition of longer stay-at-home orders during the pandemic across all models with a 99% confidence level. In the unadjusted model, column 1 shows that a 10% increase in the Number of fatalities per one million population would are associated with an increase in the length of stay-at-home orders of 4.7%

($e^{0.48 \cdot \log(1.1)}$). In the model that adjusts for all control variables, Model 4 shows that a 10% increase in the number of fatalities leads, on average, to an expected increase of the duration of a stay-at- home order in place of 4.4% ($e^{0.45 \cdot \log(1.1)}$). Simulating the extreme values in the interquantile range, our coefficient in the fully-adjusted model indicates that a number of ACLED violent events of 1.4 (25th percentile) leads to an expected stay-at-home order of 25 days long, which is 23 days shorter than the 48-day-long stay-at-home order expected in a country with 5.5 ACLED violent episodes (75th percentile).

Table 5 also shows a negative association between the latent human rights protection scores and the imposition of longer restrictive policies against the COVID-19, which indicates that countries that better protect the human rights are likely to impose restrictions for shorter periods relative to countries that have worse human right protection scores. Using the unadjusted model (column 5), the coefficient indicates that 1SD increase in the latent human rights protection score from the average – an increase from the average score of 0.77 to 2.44, equivalent to 1SD above the mean – would imply an expected decrease in the length of stay-at-home orders of 24 days – from 49 to 25 days of a stay-at-home order policy in place. After adjusting for all covariates, Model 8 shows a similar effect in which 1SD increase in the latent human rights protection scores from the mean would lead to a stay-at-home order 28 days shorter – from 48 to 20 days of a stay-at-home order policy in place.

We can illustrate the size of these effects using the country of Moldova.[409] Moldova experienced 6 violent events against civilians in 2019, which is equivalent to 1.49 violent events per one million population. In this country, we observe that the stay-at-home order was in place for 95 days during our period of study. Using the fully-adjusted model in column 4, we predict that if the number of violent events against civilians had been 12 rather than 6—from 1.48 to 2.96 per one million population—the expected length of the stay-at-home order would be 131 days – 36 days longer than its observed value. At the same time, if Moldova's human rights protection score in 2019 – 0.23 – were the same as Moldova's score back in 2015 – 0.77 – we would expect a reduction of the length of stay-at-home order in place by 23 days — from 95 days to 72 days.

[409] We choose Moldova because it has values close to the median of the sample in both the number of violent events per one million population in 2019 – the median sample is 1.15 and the value for Moldova is 1.49 – and the latent human rights protection scores – the median sample is 0.60 and score for Moldavia is 0.23.

Discussion and Conclusions

This study has investigated whether countries with a recent record of state-led violence against civilians or worse protection of human rights have been more likely to impose severe restrictions on the freedom of movement, impose them earlier on, and impose them for longer periods amidst the COVID-19 pandemic. We argue this should be the case because abusive governments may see restrictive preventive measures not only as a tool to achieve public health objectives but also to control domestic challengers. While an empirical test of the true intentions of governments is not possible, we have generated and empirically examined three observations that are consistent with our theoretical argument. We find that abusive governments have been more likely to restrict citizens' freedom of movement through stay- at-home orders at any time during our period of study. Further, we also find that abusive governments have been quicker to restrict citizens' freedom of movement through stay-at- home orders. Lastly, we also observe that abusive governments have also kept restrictive measures in place for longer.

We acknowledge that several methodological decisions have been made in the analysis and some concerns might remain. Consequently, we have subjected our empirical models to several robustness checks by: (1) varying time-to-policy thresholds (see Online Appendix D in Barceló et al (2022)); (2) time windows of the pre-outbreak measure of the ACLED violence against civilians (see the Online Appendix E in Barceló et al (2022)); (3) the actors involved in the ACLED violence against civilians (see Online Appendix F in Barceló et al (2022)); (4) using an expanded ACLED country coverage (see Online Appendix G in Barceló et al (2022)); (5) using an alternative indicator for state capacity (see Online Appendix H in Barceló et al (2022)); (6) adding two controls to capture countries' capacity to enforce a stay-at-home order, namely (i) the Number of military personnel available to the national government as a share of the total population and (ii) the Number of active police officers per 100,000 population (see Online Appendix I in Barceló et al (2022)); and, (7) controlling for Trust in government (see Online Appendix J in Barceló et al (2022)). The rationale for each of the robustness checks can be found on its corresponding Appendix in Barceló et al (2022). Our conclusions remain unaltered across all measurement decisions and model specifications.

The present paper has also significant practical implications. International organizations such as the United Nations have recently raised initial concerns about how governments may use the COVID-19 pandemic as a pretext to repress and violate fundamental civil liberties.[410] Human rights organizations have also expressed similar concerns, warning how state of emergency policies may be adopted by some governments with the intention to undermine civil and political rights[411]. In this vein, Sam Brownback, Ambassador at Large for International Religious Freedom from the U.S. Department of State, has warned that autocratic governments may be using the COVID-19 policies as a tool for political repression, "imposing additional on already marginalized ethnic communities".

While international organizations, governments, and pundits alike may have raised concerns about the unwarranted use of extraordinary measures, their statements and their evidence backing them have lacked high confidence or clear evidence because many of the large-scale non-pharmaceutical interventions implemented during this health crisis are in- distinguishable from repressive campaigns. This paper opens the black box by providing positive and systematic evidence consistent with the misuse of COVID-19 policies as a tool for political repression. Overall, our findings indicate that the international community should closely monitor the adoption of stay-at-home orders to ensure that they follow the standards of necessity and proportionality.

Whereas the empirical scope of this paper is limited to establishing these associations in the context of the COVID-19 pandemic, our theoretical logic could travel to situations other than pandemics. The general logic of our argument is that international actors only sanctions if both the degree of a government's domestic repression and certainty that the repression is unjustified is high. Hence, disasters that call for policies that are similar to policies commonly used to deter domestic dissent might create some degree of uncertainty about the reasons for the policy adoption. Contexts that create such uncertainty open windows of opportunity for abusive governments to repress their

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[410] See the UN document submitted by Irene Kahn, the UN Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, A/HRC/44/49: UN (2020). *Disease pandemics and the freedom of opinion and expression Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression*. Human Rights Council. Retrieved April 27, 2023, from: https://undocs.org/A/HRC/44/49.

[411] Hammadi, S. (2020). World Press Freedom Day: COVID-19 must not be a pathogen of repression. *Amnesty International*. Retrieved May 9, 2020, from: https://www.amnesty.org/en/latest/news/2020/05/covid-19-must-not-be-a- pathogen-of-repression/

citizens. For instance, we expect that abusive governments might be more likely to embrace restrictive policies when environmental conditions predict disasters such as hurricanes, volcanic eruptions, and storms, which usually require residents to shelter at home. Additionally, abusive authorities may also use events like significant air pollution (e.g., wildfire smoke) and radioactivity hazards to implement restrictive measures. Though further research will be required to ascertain whether our logic extends to these other types of disasters, given that climate change-induced disasters are only likely to increase over time, the importance of such work cannot be overstated.

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Discussion

The deus ex machina nature of the COVID-19 pandemic has allowed social scientists to empirically and rigorously test old and new social phenomena, sometimes with surprising results. As shown in the country reports in the previous chapter and in Study 1 in this chapter, countries with historically centralized or decentralized policy-making traditions did not always stick with them in response to the COVID-19 pandemic, with some countries overcoming this institutional stickiness and others remaining relatively beholden to them. Meanwhile, as Study 1 further illustrates, while countries that pursued decentralized policy making did implement relatively more heterogeneous results compared to countries that pursued comparatively centralized policy making, it is unclear whether such heterogeneity actually led to substantively better health outcomes.

Study 2 hints at a potential reason why government COVID-19 PHSMs were not always effectively able to limit the spread of the virus: governments may be motivated by reasons other than addressing public health policy goals in implementing PHSMs. Indeed, Study 2 finds consistent and strong evidence to suggest that governments with a history of repressing their citizens were more likely to implement lockdowns or curfews at all, earlier and longer compared to other governments without such a history. We argue that such governments were motivated to take advantage of the observational equivalence of implementing lockdowns to suppress their domestic population and addressing the public health threat .

These studies join a burgeoning work of existing literature which also seeks to explain the drivers of COVID-19 PHSM policies. To complicate the picture further, other studies find a number of other factors that influenced pandemic policymaking, which range from the systematic (e.g. historical political institutions or administrative cultures (Stasavage, 2020; Engler et al., 2021, Kuhlmann et al., 2021); previous health care preparedness (Aristodemou et al., 2021) or experience with serious infectious diseases (Anttiroiko, 2021) to the idiosyncratic (the timing of winter holidays (Björk et al., 2021); the attention of wealthy donors (McNamara and Newman, 2020) and the dynamic policy diffusion processes (Sebhatu et al., 2020); psychology of elite leadership (Maor and Howlett, 2020). Related work also highlights the need to consider public support for conditioning pandemic response. For example, Oana et al. (2021) find that in the initial wave of the pandemic that people who reported that their primary concern was the potential economic consequences of the COVID-19 pandemic were not more likely to support less restrictive PHSM policies. Others find that polarization can and has played an influential role in shaping perceptions about the pandemic (Altiparmakis et al., 2021, Heinzel and Liese, 2021).

These studies point to a complex picture of COVID-19 policy response. While we urge policy makers and researchers to heed Churchill's famous advice to "never let a good crisis good to waste" we also hasten to point out that ideally, policy makers would be able to take action to prevent the next public health threat to develop into a full blown public health crisis. As Stasavage (2020) also points out, the more preventative action can be taken to avoid this outcome, the better. In that respect the EU's investment in the EU4Health program represents a promising avenue for future pandemic prevention for the EU.

Meanwhile, any lessons learned for either taking preventative action or figuring out how to navigate a serious public health crisis should one develop must always be based on robust data. When timely, high quality data may not realistically be possible to collect in a crisis situation, then appropriate caveats should be applied to the resulting analyses on which it is based. In the next chapter, we explore the issue of data collection, completeness and quality much further and explore how the data collected by the CoronaNet Research Project in particular can be used to forward future research on the pandemic.

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Chapter 4

Building a Data Foundation for future research on COVID-19 pandemic response

The rigor, precision and value of any analysis lies in the quality of the underlying evidence and given the potential public health consequences, it is all the more important to take this into account when conducting research on the drivers of COVID-19 PHSMs. Indeed, given the scale of the pandemic response as well as the speed at which analyses of the pandemic has been produced, both policymakers and researchers should be attentive to the possibility that that the desire to generate some kind of policy response or analysis can blind spots with regards to real and predictable modeling limitations and data constraints (Manski, 2020). Unfortunately, evidence of such blind spots were already apparent with regards to predictions about pandemic preparedness before COVID-19 hit. As Baum et al. (2021) point out, though the Global Health Security Index's 2019 assessment, which measures preparedness for pandemics, accurately predicted that countries overall were ill-prepared to face a pandemic, it was decidedly less accurate at predicting which individual countries were more or less well-prepared. As Forman and Mossialos (2021) similarly flag, while several EU countries, especially in Western Europe, were projected to have been the best equipped with dealing with infectious disease outbreaks (Nuclear Threat Initiative, 2019) or epidemics (Oppenheim et al., 2019), they failed to live up to these expectations when faced with the reality of the COVID-19 pandemic.

In this final chapter of this deliverable, we provide an overview of the CoronaNet Research Project's dataset on EU COVID-19 PHSMs in order to aid future research on this topic. Despite the mountain of research that we have already presented in this deliverable[412], we recognize that there are surely more peaks to climb and more valleys to explore before the full terrain of COVID-19 PHSM responses in the EU can be fully mapped and explained. We hope that this corpus can help future research to that end.

To that end, we first provide some descriptive statistics and summaries of the XX policies of PHSMs implemented by EU policies identified, documented and organized by the

[412] Thus far in this deliverable we have already provided a chapter which explores the role that the EU played in shaping COVID-19 PHSM in EU countries, presented country reports for X countries which summaries both the policy response and political discourse they experienced from the beginning of the pandemic until October 1, 2021 and presented two in depth studies of how governmental structure on the one hand (Büthe et al., 2020), and historical authoritarian tendencies on the other hand (Barceló et al., 2022) can explain government responses to the COVID-19 pandemic

CoronaNet Research Project. We then provide an overview of summary indices developed by members of both the CoronaNet Research Project and the Oxford Government Response Measures (OxCGRT) dataset, Robert Kubinec, Joan Barceló, Rafael Goldszmit, Vanja Grujic, Timothy Model, Caress Schenk, Cindy Cheng, Thomas Hale, Luca Messerschmidt and Anna Petherick which has been developed into a research note that is currently under review. We outline our efforts to harmonize data from 7 other datasets in order to provide the most complete data resource of COVID-19 PHSMs in Europe which draws from our working paper detailing this process developed by Cindy Cheng, Luca Messerschmidt, Isaac Bravo, Marco Waldbauer, Rohan Bhavikatti, Caress Schenk, Vanja Grujic, Timothy Model, Robert Kubinec and Joan Barceló. In presenting this work, we also provide a comparative analysis of the depth, quality and scope of our data collection efforts compared to other data collection efforts on PHSMs taken in the EU. We end this section by giving an overview of the state of COVID-19 PHSM tracking efforts which we base on a commentary published in *Scientific Data* written jointly with COVID-19 data tracking efforts from the CoronaNet Research Project, ACAPS, CCCSL, John Hopkins HIT-COVID, OxCGRT as well as two conferences we organized on the topic of COVID-19 PHSM data tracking and research which we also organized with the partners listed above.[413]

In providing this review of COVID-19 PHSM data from a variety of different angles, we seek to encourage greater understanding of both the necessity and difficulty in collecting such data which we hope can inform not only research on this current pandemic but data collection efforts for future public health threats.

[413] The discussions we conducted during this conferences and in Cheng et al. (2022) complement the discussions that members of WP8 describe in PERISCOPE Deliverable 8.1 PERISCOPE Workshop on Holistic Policy Guidance for Pandemic Response for Policymakers and PERISCOPE Deliverable 8.2 PERISCOPE Workshop on Holistic Policy Guidance for Pandemic Response for Health Authorities.

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CoronaNet Research Project database of EU PHSMs

The CoronaNet Research Project (CoronaNet) documents 49,926 policies made by governments in the EU from the beginning of the pandemic until October 1, 2021.[414]

In the following, we provide more descriptive detail on how the policies we collected for EU countries are distributed over time, across countries and different levels of government. We will further provide an assessment of the quality of this data as well as a comparison of the completeness of this dataset compared to other, similar, efforts to collect data on COVID-19 PHSMS made in the EU.

For more background on the CoronaNet data taxonomy and methodology, we refer readers to Cheng et al (2020) for the baseline methodology we used to collect this data. The CoronaNet Research project provides additional resources and documentation for understanding how it collected this data overall, for both EU and non-EU countries (CoronaNet is generally focused on documenting COVID-19 PHSMs worldwide), including:

- The CoronaNet Codebook: This provides definitions for the different variables that we collect in the survey: https://www.coronanet-project.org/assets/CoronaNet_Codebook.pdf
- The CoronaNet Survey: This is a markdown version of the data collection instrument we use to collect the data: https://www.coronanet-project.org/survey
- The CoronaNet Skeleton: This provides additional information about on how the data is structured https://www.coronanet-project.org/coronanet_skeleton

This data is publicly available on to peruse with interactive visualizations and filters on the PERISCOPE COVID Atlas (https://atlas.periscopeproject.eu/pewg/)[415]. It is available in raw form from the CoronaNet website (https://www.coronanet-project.org). Users of the PERISCOPE COVID Atlas are invited to read through PERISCOPE Deliverable 1.1

[414] This is based on the version of the data published on April 18, 2023.

[415] For more information, please refer to the various deliverables relevant to WP4: Deliverable 4.1 List of Data Sources and Data Models, Specifications of Atlas Software Component, Deliverable 4.2 Semantic data models, data repository and software components; Deliverable 4.2 (Data Atlas) Dashboards and WebGIS; Deliverable 4.4 Data Atlas - release 1.0; Deliverable 4.5 Data Atlas - release 2.0). Other visualizations of the CoronaNet data were produced in cooperation with the ifo institute and were previously available on their DICE platform which have since been discontinued (Cheng et al. 2021, Albrecht et al. 2021).

Taxonomy of policy responses and impact assessment mapping and “Study 1: Summary Indices of COVID-19 PHSMs” in this deliverable for more information about the taxonomy of the data available there.

Data Volume and Distribution

In what follows, we provide readers with a sense of how many policies have been made by EU countries over the initial 22 months of the pandemic for the 23 EU countries aside from France, Germany, Italy and Spain. Because we have systematically focused on collecting subnational data for these latter 4 countries, we will present our data on them in separate sections later on.

We start with the total number of policies made and then explore variation in the data across time, policy types and governmental levels. In total, CoronaNet captures 23,657 policies made for these 23 countries. We have focused on capturing policies made at the national level for these countries though our data collection instrument also provides flexibility for capturing data for these countries at the provincial, municipal, or other levels of government as well. Note however, that data collected at governmental levels other than those made at the ‘National’ level should not be considered as complete or systematically collected for these countries as it was beyond our project resources to do so for these countries.

Table 6 shows the breakdown of the total number of policies by country, the average number of policies made by these countries, and the breakdown of the number of policies made by governmental level (National, Provincial, Municipal and Other) during the first 22 months of the pandemic. We can see, for instance, that the CoronaNet dataset captures around 1900 such policies for Austria at the high end and more than 300 for Malta at the low end. Overall, countries made an average of 46 policies a month during this period, with the average pulled down by smaller countries like Cyprus, Malta and Lithuania.

Table 6 also shows that the CoronaNet data documents a fair number of policies at the ‘Provincial’ level of government for Austria and Belgium and at the ‘Municipal’ level for Austria, Finland and Denmark. Meanwhile, aside from Finland, the CoronaNet dataset documents very few policies for policies made at levels of government other than national, provincial and municipal. However, we reiterate that in general, policies documented at levels other than the national level for these countries should not be considered representative of policy making in any of the 23 countries presented here.

Table 6: Distribution of COVID-19 PHSM policies made by 23 EU countries from December 31, 2019 to October 1, 2021.

country	Total	Average per Month	National	Provincial	Municipal	Other
Austria	1907	86.68	1581	195	124	7
Belgium	1051	47.77	883	151	16	1
Bulgaria	1020	46.36	822	63	135	0
Croatia	847	38.50	840	3	4	0
Cyprus	553	25.14	506	27	19	1
Czechia	1027	46.68	985	8	33	0
Denmark	1335	60.68	1107	71	151	6
Estonia	1154	52.45	1115	9	17	13
Finland	1228	55.82	849	30	181	168
Greece	1308	59.45	1204	69	34	1
Hungary	1886	85.73	1878	0	8	0
Ireland	898	40.82	897	0	1	0
Latvia	890	40.45	878	9	3	0
Lithuania	473	21.50	439	2	32	0

Luxembourg	626	28.45	623	0	3	0
Malta	334	15.18	333	0	1	0
Netherlands	1433	65.14	1415	8	10	0
Poland	1356	61.64	1285	69	2	0
Portugal	779	35.41	765	6	8	0
Romania	1330	60.45	1276	30	24	0
Slovakia	553	25.14	535	4	14	0
Slovenia	974	44.27	957	10	7	0
Sweden	695	31.59	605	73	15	2
Total	23657	46.75	21778	837	842	199

Figure 41 further unpacks these aggregate numbers by showing the number of policies made over time for the 23 EU member states. As the figure shows, there has been substantial variation in policies captured for these countries over the first 22 months of the pandemic. As described in more detail in the country reports in the previous chapter, while most countries dithered in their policy response in the initial two months of the pandemic, most countries implemented a surge of policy making around March 2020, though as Figure 41 shows there is substantial variation in how high this initial surge was depending on the country. For example, according to our dataset, Austria implemented more policies initially compared to Sweden around March 2020. As the figure shows, during the first 22 months, there was substantial variation in the number and timing of policies over time.

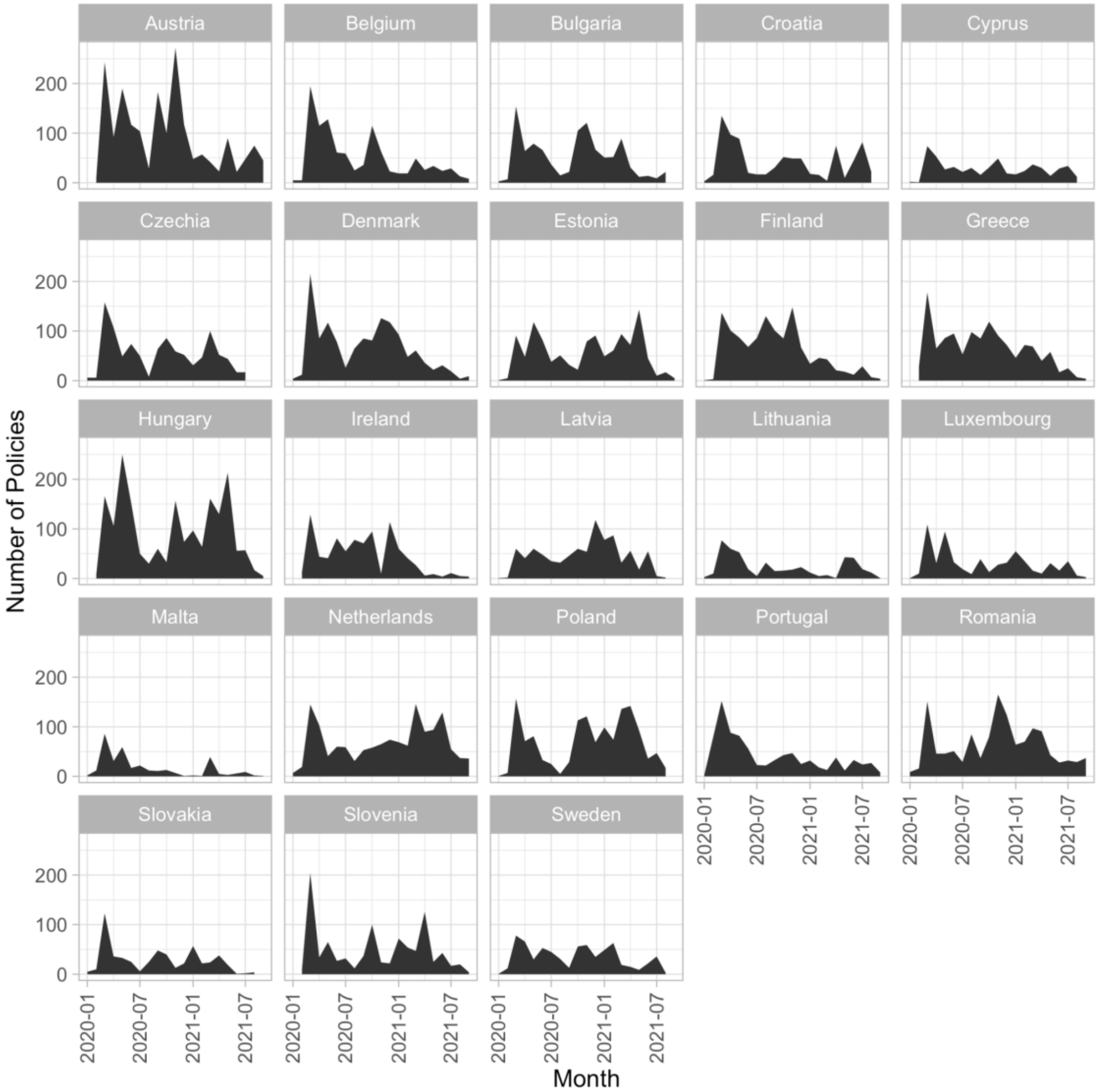

Figure 41: Number of COVID-19 PHSM policies implemented from January 1, 2020 to October 1, 2021 for 23 EU countries

In what follows, we provide more detail on the data we have collected Germany, France, Italy and Spain in particular as we have also concentrated on providing subnational data for these countries.

Germany

The CoronaNet dataset has systematically sought to document policies for all 16 Bundeslander (provincial) level as well as the federal (national) level government for Germany until October 1, 2021. It has documented 6,790 policies for Germany in total, with Table 7 providing a breakdown of these policies by government type, with around 5,800 such policies documented at the provincial level. Overall, governments at the national and provincial levels in Germany made on average around 18 policies a month during this time period, with the most number of policies documented for Bavaria, and the least number for Mecklenburg-Vorpommern. Note that while the CoronaNet dataset additionally captures some number of policies made at the "Municipal" level for Germany, with the most number of such policies captured for Saxony-Anhalt, these should not be considered as systematically representative of municipal COVID-19 PHSMs made in Germany.

Table 7: Distribution of COVID-19 PHSM policies made by German national and subnational governments from December 31, 2019 to October 1, 2021.

province	Total	Average per Month	National	Provincial	Municipal	Other
National	860	39.09	860	0	0	0
Baden-Wuerttemberg	646	29.36	0	644	2	0
Bavaria	1142	51.91	0	1136	6	0
Berlin	294	13.36	0	282	12	0
Brandenburg	193	8.77	0	193	0	0
Bremen	508	23.09	0	487	21	0
Hamburg	693	31.50	0	692	1	0
Hesse	221	10.05	0	212	9	0
Lower Saxony	175	7.95	0	171	1	3
Mecklenburg-Vorpommern	108	4.91	0	108	0	0
North Rhine-Westphalia	144	6.55	0	127	17	0
Rheinland-Pfalz	165	7.50	0	163	2	0

Saarland	516	23.45	0	515	1	0
Saxony	258	11.73	0	256	2	0
Saxony-Anhalt	173	7.86	0	145	28	0
Schleswig-Holstein	282	12.82	0	278	3	1
Thuringia	412	18.73	0	393	18	0
Total	6790	18.16	860	5802	123	4

Figure 42 meanwhile plots the distribution of COVID-19 PHSMs made over time for the federal level government as well as the 16 Bundesländer. The figure shows that most provincial governments did not start enacting policies until March 2020, though there is great variation in the number of policies implemented over time. For instance, there was a spike in policy-making in Hamburg in the early months of the pandemic while Thuringa demonstrated relatively even policy making over time.

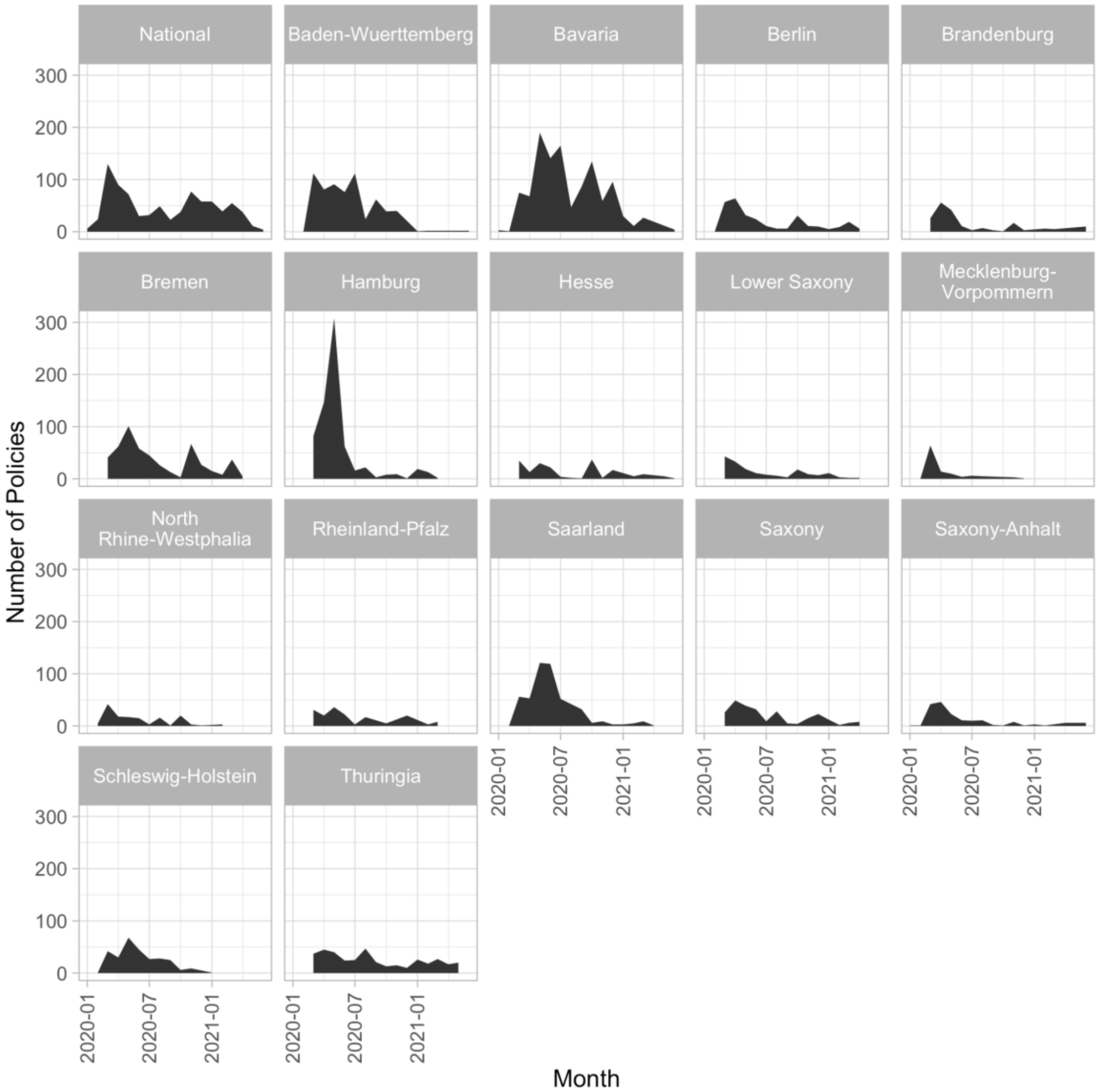

Figure 42: Number of COVID-19 PHSM policies implemented from January 1, 2020 to October 1, 2021 for German national and subnational regions.

Italy

The CoronaNet dataset has collected 12,321 observations for Italy with the majority of this data, more than ten thousand policies, concentrated on national-level policy making. This is because in large part, the Italian national government played a central role in implementing policies in its 20 regions through October 1, 2021 through Decrees of the President of the Council of Ministers (DPCM).[416] DPCMs, which had different durations but lasted on average about a month, assigned different types of restrictions according

[416] In the original Italian, they are 'Decreto del Presidente del Consiglio dei Ministri'.

to different severity levels of the pandemic, each of which were associated with different colors :

- White (no risk, level 1)
- Yellow (low-risk, level 2)
- Orange (medium-risk, level 3)
- Red (high-risk, level 4)

The Italian Ministry of Health further assigned different Italian regions as having different risk levels or colors every 14 to 15 days in documents called 'Ordinanza'.[417] While DPCM and Ordinanza were sometimes issued simultaneously, sometimes they were not. As such, it is possible that while a given region might be assigned the same color for one 14 or 15 day period, the type of restrictions associated with that color could change if a new DPCM was issued during this period. Though this system resulted in a highly complex policy environment, the degree of centralization through which these policies were implemented allowed the CoronaNet team to automate a proportion of the policies implemented by the Italian central government by preprocessing the respective DPCM and Ordinanza into a form suitable for automation.

The national level policies captured for Italy are a mix of manually coded and automated policies. By and large, manually coded policies capture general policies that applied to the country as a whole until October 1, 2021 and automated policies capture policies made at the national level but which were targeted toward distinct subnational regions depending on their assigned risk color. These automated policies currently apply through July 2021, and work is ongoing to automate the last months until October 1, 2021. Table 8 provides an overview of the distribution of these policies across Italy nationally and subnationally.

While policies were generally implemented in a highly centralized matter, subnational governments did have some discretion to implement some policies independently . As such, aside from these national level policies, at the subnational level, the CoronaNet data focuses on capturing provincial level policies for 4 regions in particular: Campagnia, Sardinia, Sicily and Veneto. These regions were chosen to provide even geographic coverage of subnational regions and coverage for these regions is available systematically through 2020. While policies are also documented for other subnational

[417] Note that these applied directly without a parliamentary vote.

regions overall as well as for Campagnia, Sardinia, Sicily and Veneto after 2020, these should not be considered as complete. Note that while it was possible for subnational regions and municipalities to also apply the color system described above to even smaller geographic units like cities, this was also beyond the scope of our resources to capture.

Table 8: Distribution of COVID-19 PHSM policies made by Italian national and subnational governments from December 31, 2019 to October 1, 2021.

province	Total	Average per Month	National	Provincial	Municipal	Other
National	10212	464.18	10212	0	0	0
Abruzzo	36	1.64	0	35	1	0
Aosta Valley	22	1.00	0	19	3	0
Apulia	22	1.00	0	22	0	0
Basilicata	23	1.05	0	23	0	0
Calabria	36	1.64	0	26	10	0
Campania	249	11.32	0	248	1	0
Emilia-Romagna	75	3.41	0	66	9	0
Friuli Venezia Giulia	29	1.32	0	28	1	0
Lazio	46	2.09	0	44	2	0
Liguria	55	2.50	0	53	2	0
Lombardy	158	7.18	0	149	9	0
Marche	43	1.95	0	33	10	0

Molise	28	1.27	0	20	8	0
Piedmont	66	3.00	0	51	15	0
Sardinia	196	8.91	0	186	10	0
Sicily	217	9.86	0	215	2	0
Trentino-Alto Adige	24	1.09	0	17	7	0
Tuscany	48	2.18	0	34	14	0
Umbria	21	0.95	0	16	5	0
Veneto	715	32.50	0	704	11	0
Total	12321	26.67	10212	1989	120	0

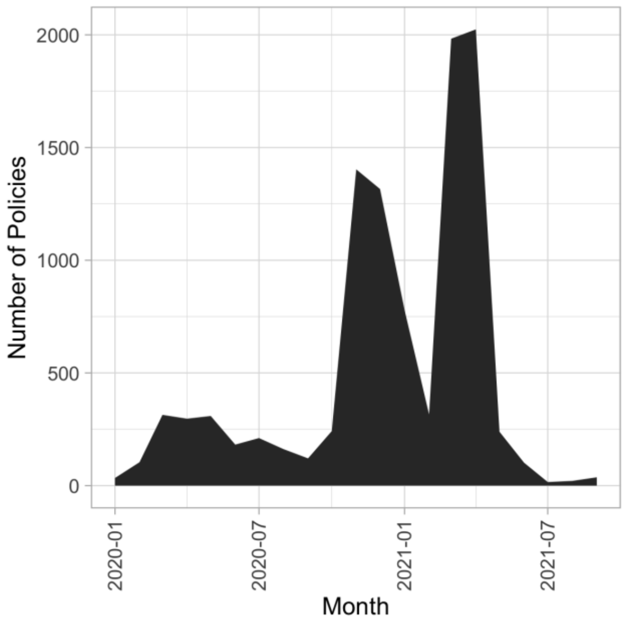

Figure 43: Number of COVID-19 PHSM policies implemented from January 1, 2020 to October 1, 2021 for Italian national government.

Figure 43 and Figure 44 shows the number of COVID-19 PHSM policies implemented by Italian governments over time for the national level and subnational levels respectively. Figure 43 shows that after an initial period of policy activity during the first months of the pandemic, policy making spiked both in the fall of 2020 and spring of 2021 at the national level. Meanwhile, Figure 44 suggests that of the 4 regions which the CoronaNet dataset covers for 2020, Sardinia and Sicily peaked in its policy making activity in the early months pandemic while Veneto peaked toward the summer months. Meanwhile, policy making in Campagnia was relatively stable for the early months before dropping in the summer months.

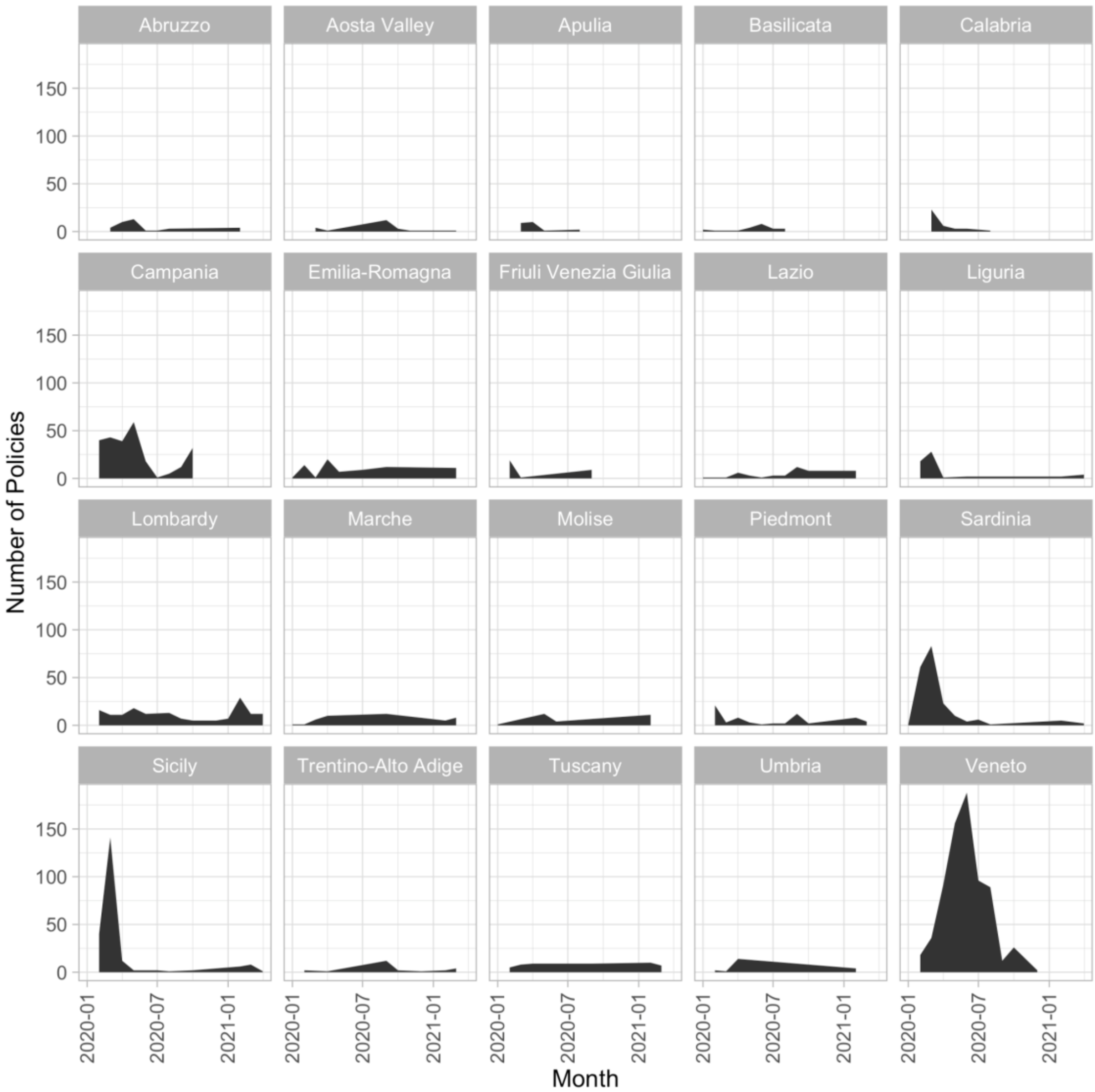

Figure 44: Number of COVID-19 PHSM policies implemented from January 1, 2020 to October 1, 2021 for Italian subnational regions.

Spain

The CoronaNet dataset documents 4,416 policies for the national government of Spain and its 17 autonomous regions and 2 autonomous cities. Given existing project resources, the Spanish data in particular concentrates on systematically collecting data at the national level as well as for Andalusia, the Canary Islands, Catalonia, Madrid, Murcia and Valencia. Data for other provinces in Spain should be considered incomplete. Table 9 shows the distribution of policies captured for Spain at both the national and subnational levels.

Table 9: Distribution of COVID-19 PHSM policies made by Spanish national and subnational governments from December 31, 2019 to October 1, 2021.

province	Total	Average per Month	National	Provincial	Municipal	Other
National	1063	48.32	1063	0	0	0
Andalusia	373	16.95	0	232	141	0
Aragon	178	8.09	0	144	34	0
Asturias	95	4.32	0	93	2	0
Balearic Islands	132	6.00	0	109	23	0
Basque Country	137	6.23	0	135	2	0
Canary Islands	188	8.55	0	186	2	0
Cantabria	30	1.36	0	28	2	0
Castille and Leon	301	13.68	0	301	0	0
Castille-La Mancha	116	5.27	0	116	0	0

Catalonia	383	17.41	0	337	46	0
Ceuta	15	0.68	0	15	0	0
Extremadura	225	10.23	0	186	39	0
Galicia	102	4.64	0	99	3	0
La Rioja	105	4.77	0	102	3	0
Madrid	318	14.45	0	299	17	2
Melilla	12	0.55	0	9	3	0
Murcia	233	10.59	0	232	1	0
Navarre	201	9.14	0	193	8	0
Valencia	209	9.50	0	207	2	0
Total	4416	10.04	1063	3023	328	2

Figure 45 shows the number of policies implemented by Spanish governments over time. It shows that while national level policy making was particularly active in the early months of the pandemic, this activity slowed down in later months as policy making devolved to subnational levels of government.

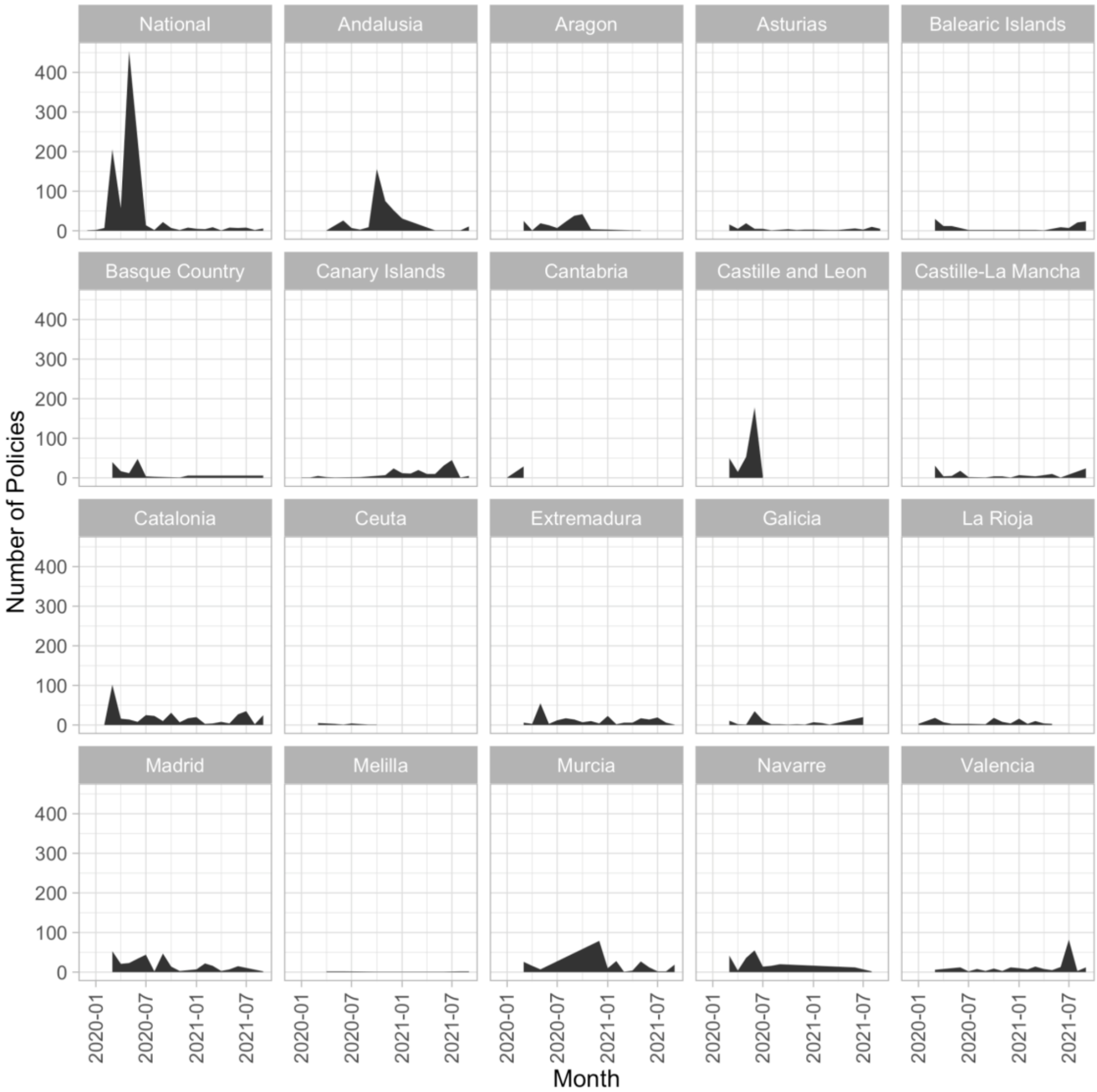

Figure 45: Number of COVID-19 PHSM policies implemented from January 1, 2020 to October 1, 2021 for Spanish subnational regions.

France

The CoronaNet dataset documents 2742 policies made in France from December 31, 2019 to October 1, 2021. Table 10 shows the distribution of policies captured for France nationally and subnationally. The dataset in particular focuses on systematically covering policies made by the French national government as well as two of its eighteen subnational regions Ile-de-France and Grand-Est. While in the early days of the pandemic, the French national government took the lead in coordinating COVID-19

PHSMs, even then, many policies were made subnationally.[418] In these cases, it was more often the case that French departments, of which there are 94 and which are one level below the regional government, took the lead in implementing COVID-19 PHSMs. Given this, we focused our resources on Ile-de France, arguably the most important political region in France and Grand Est, the 6th largest region in France and arguably more representative of other French regions. Note that most policies captured for Grand Est were made at the 'Other' level of government. This refers to the department level of government, for which there are 10 in Grand Est.

Table 10: Distribution of COVID-19 PHSM policies made by French national and subnational governments from December 31, 2019 to October 1, 2021.

province	Total	Average per Month	National	Provincial	Municipal	Other
National	1421	64.59	1421	0	0	0
Auvergne-Rhône-Alpes	17	0.77	0	3	14	0
Bourgogne-Franche-Comte	2	0.09	0	1	1	0
Brittany	4	0.18	0	1	3	0
Corsica	59	2.68	0	24	9	26
Grand Est	535	24.32	0	63	35	437
Guadeloupe	6	0.27	0	3	0	3
Hauts-de-France	13	0.59	0	5	8	0
Ile-de-France	332	15.09	0	154	128	50

[418] For instance mask wearing policies were made by departments in the summer of 2020: "Coronavirus: dans quelle villes ou departments les port du masque est-il obligatoire?" (2020) Le Monde Retrieved 27 April, 2023, from: https://www.lemonde.fr/les-decodeurs/article/2020/08/04/coronavirus-quelles-villes-imposent-le-masque-dans-le-centre-sur-les-marches-ou-dans-tout-l-espace-public_6048106_4355770.html

Martinique	2	0.09	0	2	0	0
Mayotte	7	0.32	0	7	0	0
Normandy	5	0.23	0	4	1	0
Nouvelle-Aquitaine	141	6.41	0	9	19	113
Occitanie	16	0.73	0	8	4	4
Pays de la Loire	13	0.59	0	12	1	0
Provence-Alpes-Côte d'Azur	163	7.41	0	13	21	129
Reunion	6	0.27	0	5	1	0
Total	2742	7.33	1421	314	245	762

Figure 46 shows the distribution of policies made by French governments over time. As the figure shows, national level policy making was especially active in the first months of the pandemic. Though the national government continued to maintain an active presence, subnational policy making began playing a greater role in the later stages of the pandemic.

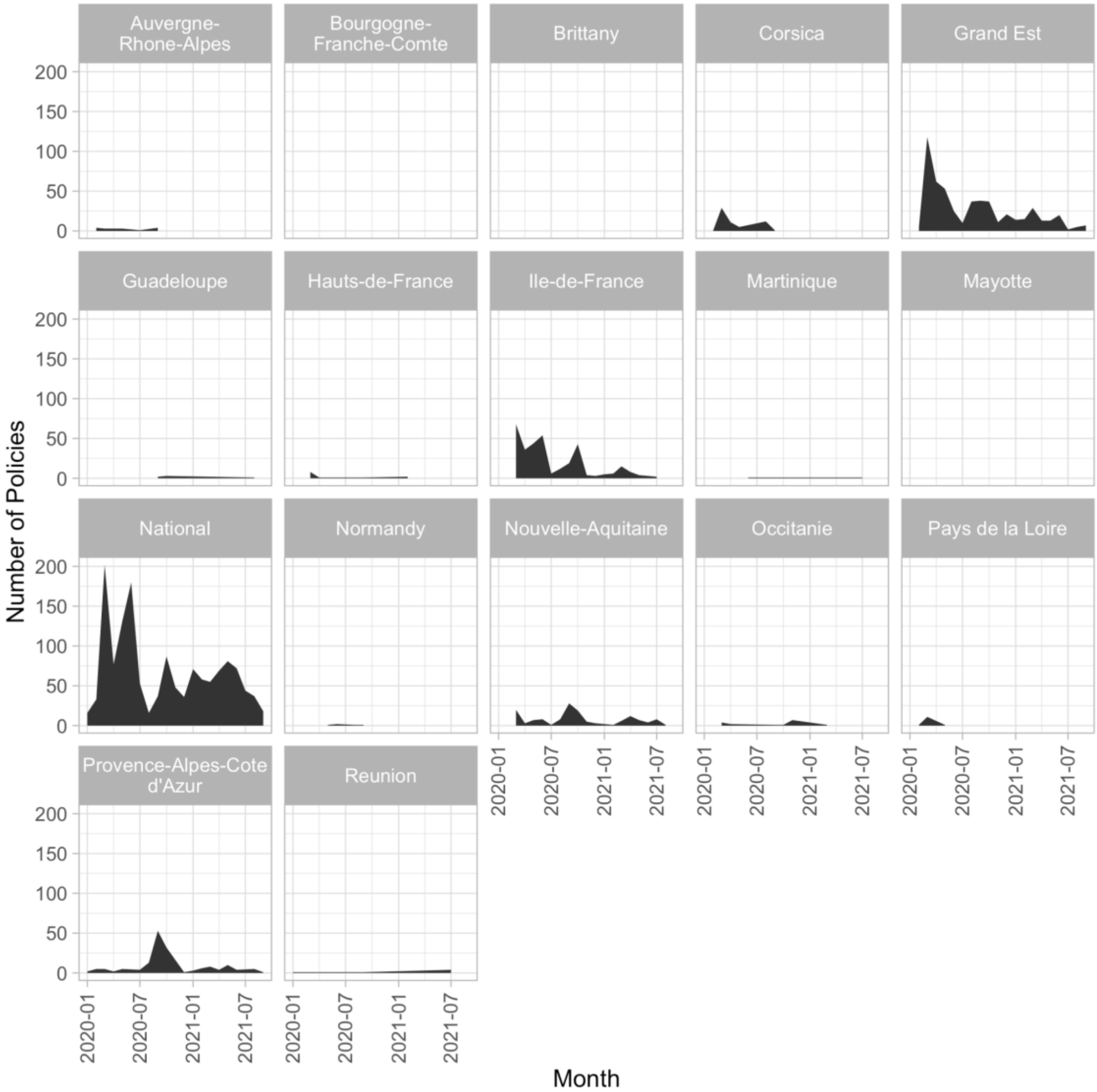

Figure 46: Number of COVID-19 PHSM policies implemented from January 1, 2020 to October 1, 2021 for French subnational regions.

Data Completeness

The ideal standard with which to judge the completeness of COVID-19 PHSM data would be to compare the data that we have collected against a complete dataset. However, such a standard does not exist because such a dataset does not exist.

Given this constraint, we instead, assess the completeness of our dataset relative to 6 next largest external efforts to collect COVID-19 PHSM data for the EU:

- ACAPS Government Measures (ACAPS) (ACAPS,2020)

- COVID Analysis and Mapping of Policies (COVIDAMP) (Katz and Graedn, 2020)
- John Hopkins Health Intervention Tracking for COVID-19 (HIT-COVID) (Zheng et al.,2020)
- Oxford COVID-19 Government Response Tracker (OxCGRT) (Hale et al., 2021)
- World Health Organization EURO (WHO EURO) and US Center for Disease Control (WHO CDC) datasets on COVID-19 policies (retrieved from the WHO Public Health and Safety Measures (WHO PHSM) (Organization et al., 2022))

As we can see from Table 11, on average, each external dataset has captured, on average, around 4k policies for EU countries. Meanwhile these 6 datasets combined have collected around 25k policies made by EU countries before October 1, 2021. By comparison, as mentioned previously, the CoronaNet dataset has collected close to 50k policies for EU countries, which suggests that the CoronaNet dataset for EU policies is much more complete than either any individual dataset or the combination of these external dataset.

Table 11: Distribution of COVID-19 PHSM policies collected by 7 COVID-19 Tracking groups for 27 EU countries from December 31, 2019 to October 1, 2021

country	ACAPS	CDC_ITF	COVIDAMP	EURO	JHU	OXCGRT	External Data Total	CoronaNet
Austria	190	29	0	256	0	458	933	1907
Belgium	166	60	367	160	0	448	1201	1051
Bulgaria	119	14	0	515	0	358	1006	1020
Croatia	103	14	0	225	3	321	666	847
Cyprus	138	25	0	356	0	323	842	553
Czechia	149	25	573	259	26	243	1275	1027
Denmark	252	40	494	476	47	402	1711	1335

Estonia	131	27	353	335	0	265	1111	1154
Finland	127	15	0	304	0	371	817	1228
France	113	68	196	180	24	436	1017	2742
Germany	180	39	269	214	66	317	1085	6790
Greece	183	48	0	444	18	335	1028	1308
Hungary	136	28	327	317	0	309	1117	1886
Ireland	157	54	32	239	13	245	740	898
Italy	144	55	240	189	288	543	1459	12321
Latvia	128	14	0	467	0	223	832	890
Lithuania	136	20	0	210	0	265	631	473
Luxembourg	89	8	0	190	0	318	605	626
Malta	64	23	0	120	0	59	266	334
Netherlands	70	37	0	346	35	354	842	1433
Poland	116	25	0	324	0	216	681	1356
Portugal	202	46	0	328	0	439	1015	779
Romania	71	17	0	240	27	323	678	1330
Slovakia	137	17	0	236	0	296	686	553

Slovenia	79	25	0	214	44	324	686	974
Spain	160	57	324	352	40	245	1178	4416
Sweden	115	10	119	278	0	407	929	695
External Data Total	3655	840	3294	7774	631	8843	25037	49926

We can further break down these numbers by examining how much national versus subnational COVID-19 PHSMs capture. As shown in Table 12, 91% of policies captured in the external dataset capture national level policies, with around 6% capturing policies made at the provincial level and the rest made at either the municipal or other levels of government. In contrast, around 70% of the CoronaNet dataset captures policies made at the national level, 24% at the provincial level, and the rest at either the municipal or other levels of government. This suggests that the CoronaNet data also captures much more fine-grained information with respect to the level of government implementing a given measure.

Table 12: Distribution of COVID-19 PHSM policies collected by 7 COVID-19 Tracking groups by governmental level for EU countries from December 31, 2019 to October 1, 2021

Government Level	ACAPS	CDC_ITF	COVIDAMP	EURO	JHU	OXCGRT	External Data Total	CoronaNet
National	2983	666	3207	6790	259	8843	22748	35301
Provincial	672	71	87	382	371	NA	1583	11974
Municipal	NA	1	NA	2	NA	NA	3	1678
Other (e.g., county)	NA	102	NA	600	NA	NA	702	968

Total	3655	840	3294	777 4	630	8843	25036	49921

However, there is only so much that a raw comparison of numbers between these different collection efforts can tell us. It is entirely possible, for instance, that the substantive overlap between these different data collection efforts is low. Assessing this requires us to not just compare the raw number of policies, but to look into the substance of the policies themselves.

To that end, in order to ensure that our data collection efforts are as complete as possible, in February 2021, we began efforts to harmonize the data from these six datasets into the CoronaNet dataset. In what follows, we provide a brief summary of our data harmonization methodology and an overview of the results of our efforts with regards to COVID-19 PHSMs made in EU countries. Readers interested in more information about the general motivation and methodology for our data harmonization strategy are invited to see "Study 2: Data Harmonization of COVID-19 PHSMs."

While, as detailed in "Study 2: Data Harmonization of COVID-19 PHSMs", our data harmonization strategy is based on significant data pre-processing and mapping, the heart of our strategy can broadly be summarized in two steps. In the first step policies in the external data are assessed for *overlap* with data in the CoronaNet data. When there is overlap between the two datasets, the overlap assessment is 'Yes' and when there is no overlap, i.e., the policy exists in the external dataset but not in the CoronaNet dataset, the overlap assessment is 'No'.

To date, we have assessed the overlap for 23,251 external policies. Table 13 provides the breakdown of the policies we have assessed for overlap by dataset along the rows, and by assessment type both in terms of absolute numbers and percentages along the columns. It shows that on average, there is no overlap for around 80% of policies in the external data. The highest percent overlap is with the JHU dataset, at 49.9%, though this dataset also has the fewest absolute number of policies documented for EU countries. The lowest overlap is with the OxCGRT dataset, at 14.8%. Meanwhile, the OxCGRT also has the largest absolute number of policies documented for EU countries aside from the CoronaNet dataset, at around 8800 policies as shown in Table 12. In other words, this exercise suggests that there was potentially a substantial amount of information that was captured by external datasets that was not captured by the CoronaNet dataset.

Table 13: Volume and percent overlap of observations across 6 external datasets with the CoronaNet dataset for EU countries

dataset	No #	No %	Yes #	Yes %
ACAPS	2665	76.3	826	23.7
CDC_ITF	573	75.2	189	24.8
COVIDAMP	2382	83.4	473	16.6
EURO	5991	79.4	1553	20.6
JHU	177	49.9	178	50.1
OXCGRT	7024	85.2	1220	14.8
Total	18812	80.9	4439	19.1

In the second step of our data harmonization strategy, we then assess policies for harmonization for all policies that were not found to be in the CoronaNet dataset, that is, policies that were assessed to have an overlap of 'No'. Harmonization can be assessed along 7 dimensions:

- 'Harmonized'; this means that the coder has recoded it into the CoronaNet taxonomy.
- 'Harmonized with additional original research': this means that the coder had to do some additional research before coding the observation into the CoronaNet taxonomy. This could be for any number of reasons. E.g. the information that from the URL or PDF links in the external dataset may be unclear or require additional context/knowledge to code well.

- ‘Harmonized with additional work to find a new link’ means that the original link for the policy is dead but that a coder was able to find a new link that corroborates the information described in the ‘description’ column.
- ‘Harmonized with additional original research AND with additional work to find a new link’: means a coder fulfilled both the criterion under: ‘Integrated with additional original research’ and ‘Integrated with additional work to find a new link’. See above for more information.
- ‘Duplicated policy’: this means that there were multiple external policies that were duplicates of each other. In this case, the coder is asked to only harmonize one of them and to mark the other ones as being duplicates.
- ‘Not a relevant policy’: this means that after having taken a closer look at the link for the observation is not one that would be coded in the CoronaNet taxonomy.
- ‘Link dead, no other link found’ means that the original link for the policy as noted in the CoronaNet Data harmonization sheet is dead and the coder was unable to i) use the WayBack Machine to find the original data ii) find another link to corroborate this information. In this case, the coder is instructed to not recode this policy

These harmonization assessments were done for 16,398 policies (note that because the overlap assessment was ‘Yes’ for 4439 policies, this means that 20,837 external policies have been processed for harmonization overall). Table 14 and Table 15 provide a breakdown of this harmonization assessment, with the external dataset along the rows and the assessment type along the columns in terms of both absolute numbers and percentages. As a result of this harmonization exercise, the CoronaNet dataset has been able to harmonize more than 13k policies from these 6 external datasets (i.e. of the 47k+ policies currently in the CoronaNet dataset, 13k+ were based off of data in the external datasets). Table 14 shows that while a bit more than 28% of policies were able to be harmonized straight away, around 7% of policies needed either additional research or additional work to find a new link before they could be harmonized.

Meanwhile, Table 15 shows that around 10% of policies could not be harmonized because the original source of the policy was no longer retrievable, suggesting problems with data quality in the external dataset. Meanwhile, we also found that 19% of policies were duplicated within the external data. In other words, when looking into individual policies, we found that the level of overlap in data among the external datasets (19%) was comparable to the overlap that we found between the external datasets as a whole and the CoronaNet dataset (20%). Finally, we found that around 16% of policies were found to be not relevant to code according to the CoronaNet taxonomy.

Table 14: Volume and percent observations harmonized across 6 external datasets with the CoronaNet dataset for EU countries (part 1 of 2)

dataset	Harmonized #	Harmonized %	Harmonized with new link #	Harmonized with new link %	Harmonized with addit. research #	Harmonized with addit. research %	Harmonized with addit. research + new link #	Harmonized with addit. research + new link %
ACAPS	1040	33.4	57	1.8	77	2.5	40	1.3
CDC_ITF	215	31.4	7	1.0	40	5.8	18	2.6
COVIDAMP	959	40.4	67	2.8	143	6.0	20	0.8
EURO	1859	27.6	221	3.3	192	2.8	177	2.6
JHU	64	20.4	3	1.0	5	1.6	2	0.6
OXCGRT	1617	23.0	86	1.2	193	2.7	96	1.4
Total	5754	28.4	441	2.2	650	3.2	353	1.7

Table 15: Volume and percent observations harmonized across 6 external datasets with the CoronaNet dataset for EU countries (part 2 of 2)

dataset	Link dead, no other link found #	Link dead, no other link found %	Duplicated policy #	Duplicated policy %	Not a relevant policy #	Not a relevant policy %
ACAPS	316	10.1	500	16.0	393	12.6
CDC_ITF	45	6.6	110	16.1	81	11.8
COVIDAMP	47	2.0	424	17.9	291	12.3
EURO	1148	17.0	1048	15.5	733	10.9
JHU	6	1.9	58	18.5	17	5.4
OXCGRT	477	6.8	1735	24.7	1771	25.2
Total	2039	10.1	3875	19.1	3286	16.2

Overall, in this section we show that the data collected by the CoronaNet data for EU countries far exceeds the efforts of the next 6 largest data collection efforts both individually and combined. Moreover, we have undertaken additional substantial work to incorporate the data that is in these external datasets into the CoronaNet dataset to ensure that the CoronaNet dataset not only contains the most number of policies, but that the policies that it documents substantively also reflects the policies collected by other datasets. This not only ensures that the data collected by other projects, all of which have now stopped data collection, can live on in our dataset but it also substantially improves the quality and completeness of the CoronaNet dataset for research on the pandemic.

To date, we have been able to assess nearly all of this external EU data for harmonization. To that end, we found that around 20% of the external data overlapped with the CoronaNet data, and of the data that did not overlap, we harmonized (i.e. recoded) around around 34%, or 13k policies into the CoronaNet dataset. The remaining policies have not been incorporated into the Coronanet dataset either because of issues with the existence of original sources, duplication of data or relevancy of the data to the CoronaNet taxonomy. These efforts mean that the CoronaNet dataset almost certainly represents the most complete record of PHSM policies implemented by EU countries from the beginning of the pandemic until October 1, 2021 both in terms of the volume and substance of its collected data.

Data Quality

We have implemented a number of protocols and procedures to ensure the highest data quality possible for the CoronaNet data. These include:

- Training and support of coders
- A system of regional and country managers to monitor and support coder work
- Institutional resources and guides for coding and harmonization
- Automated feedback of data quality and data harmonization processes

For more details, please see the Methodology section in Cheng et al (2022) and "Study 2: Data Harmonization of COVID-19 PHSMs" of this deliverable.

Though it is impossible to systematically evaluate the quality of 49k+ policies, in the below, we provide an evaluation along two important dimensions of data quality: the quality of the text descriptions and the existence of end dates for policies. We discuss both issues in turn in the remainder of this section.

Having high quality text descriptions is important to be able to succinctly and effectively understand what a given observation is supposed to be documenting. To that end, Table 16 shows that descriptions in the CoronaNet dataset are on average longer than those in other external datasets, suggesting that it likely contains richer information about a given policy. Meanwhile, most datasets contain relatively few descriptions with less than 50 characters, with the WHO EURO dataset having the highest number of such datasets.

However, a fair number of datasets contain no descriptions at all, with OxCGRT having the most number of these observations. In comparison, CoronaNet data always has a description because its data collection methodology does not count a policy as valid if it does not have a description. Overall then the breakdown in Table 16 suggests that the quality of the textual descriptions in the CoronaNet dataset to be on average higher than those found in other datasets.

Table 16: Assessment of Textual descriptions of 7 COVID-19 PHSM datasets

dataset	Description Length (Average)	Descriptions with less than 50 characters (Total)	Missing Descriptions (Total)
Corona Net	512	64	0
ACAPS	157	21	487
CDC_ITF	562	6	24
COVIDA MP	197	0	122
EURO	322	366	287
JHU	253	216	24
OXCGRT	365	0	662

Meanwhile, documenting end dates for COVID-19 PHSM policies is important for calculating the duration of the policy, and thus, the potential impact that such policies can have on any number of outcomes, including but not limited to the number of COVID-19 cases, mental health and economic outcomes. The first two columns in Table 17 provide information on how many end dates were missing in the raw external data (that is, before they were assessed for harmonization) in terms of both absolute numbers and percentages. They show that more than 6k policies, or around 25% of the raw external data has missing end dates. The third column of Table 17 provides information on the total number of policies harmonized to give context to the last two columns of the table, which provides a breakdown of the number of policies that were actually assessed to have a missing end date. As shown in the ‘Total Harmonized #’ column, around 13k policies have been recoded from the external data into the CoronaNet data and of these, close to 5k or 36% are found to be missing end dates, a difference of around 11% (36%-25%) from what was assessed from the raw data. This suggests that in a substantial number of cases, though the external data documented end dates in the original, raw version of their datasets, when digging into the raw sources of information on which the data is based on to recode into the CoronaNet taxonomy, this information was found to be missing.

The difference between what was reported in the raw data and what was assessed from the sources is particularly drastic in the case of OxCGRT data, which went from being assessed as having around 3% of its data missing end dates in the raw data to having around 35% of its data found to be missing end dates during the harmonization process. This is likely explained by the fact that the OxCGRT data is collected as an ordinal index in a panel form. To take border policies as an example, the OxCGRT index for border closures takes a value of 3 if borders are closed to all countries and a 4 if it is closed to all countries. If country X (i) only bans travel from country A in March 2020 (ii) then only bans travel from country B (lifting the ban for country A) in April 2020, and finally (iii) bans travel all countries in May 2020, it will take on a value of 3 according to the OxCGRT in March and April of 2020 and a value of 4 in May of 2020. However, it is not necessarily the case that the OxCGRT data will accurately record the end date of the travel ban against country A since for the purposes of its index, the same value of 3 is maintained throughout March and April. Such lapses in documentation likely explain the comparatively high number of missing end dates for the OxCGRT data.

Conversely, other datasets that did not document any end dates in its raw data, e.g. ACAPS and JHU, were found to have fewer actual missing end dates when the data was assessed for harmonization. This is likely due to the fact that when looking through the raw sources of information that these policies were based on, it was in fact possible to extract information on missing end dates though the corresponding original datasets did not document them.

In comparison to the 36% of the external data that has been found to have missing end dates, the CoronaNet dataset is found to have missing data for around 18% of its data. Note moreover, that of the 8.6k policies that are missing end dates in the CoronaNet data, around half, or 4.7k were harmonized from the external data. Overall, the

CoronaNet dataset outperforms other external datasets with regards to missing end dates and as a result of the data harmonization process both recovers and reveals missing end dates from the external data. In general however, all datasets can be improved in this regard and future work on the CoronaNet dataset will continue in this regard.

Table 17: Assessment of Data Completeness for 7 COVID-19 PHSM datasets

dataset	No end date in raw data #	No end date in raw data %	Total Harmonized #	Actual Missing End Date #	Actual Missing End Date %
CoronaNet	NA	NA	NA	8618	17.9
ACAPS	3759	100.00	1993	927	46.5
CDC_ITF	146	17.38	527	225	42.7
COVIDAMP	466	14.15	1942	513	26.4
EURO	1155	14.58	4423	1506	34.0
JHU	631	100.00	178	125	70.2
OXCGRT	286	3.23	4176	1496	35.8
Total (External Data Only)	6443	25.48	13239	4792	36.2

Conclusion

In this section, we provided an overview of the data on COVID-19 PHSMs collected by the CoronaNet dataset from December 31, 2019 to October 1, 2021 for countries in the EU. We show that the close to 50 thousand policies CoronaNet has collected for these reflects a great deal of variation of policies implemented across countries and time. A substantial percentage of these policies, around 25%, moreover were systematically collected at the subnational level for 4 countries in particular: Germany, Italy, Spain and France.

We further compare our data collection efforts to the 6 next largest COVID-19 data tracking efforts and find that our efforts outpace theirs both individually and combined in terms of the volume of policies. However, we have also found that the substantive overlap between external datasets is relatively low, around 20%. To that end, we have further undertaken substantial additional work to harmonize relevant data from external datasets into the CoronaNet dataset and have to date, recoded around 13k such policies.

Moreover, we find that the CoronaNet dataset also outperforms external datasets on two important metrics, the information content of the textual descriptions and the percentage of documented end dates of documented policies.

We further note that while we have focused on presenting the data CoronaNet has collected for EU countries, its scope is inclusive of COVID-19 PHSMs made by countries world-wide. It currently documents 160k+ such policies, making it arguably the largest and most detailed such database in existence. While it is beyond the scope of this deliverable to describe this data in further detail, the importance and value of collecting data for countries beyond the EU for understanding policy drivers in the EU is self-evident from "Study 2 Windows of Repression Using COVID-19 policies against political dissidents?" In some cases, understanding the drivers of policies within certain regions, including the EU, necessitates comparing it to policies in other regions.

Despite the obvious advantages of the CoronaNet dataset over other datasets along the above-mentioned dimensions, we note that a drawback of the CoronaNet dataset is that it is limited to policies made before October 1, 2021. However, this limitation must be put in the context of the fact that all other data collection efforts aside from the OxCGRT dataset stopped before or shortly after this time span. Meanwhile, though the OxCGRT has been able to collect data until 2023, we infer based on our intimate knowledge of their data until October 1, 2021 that their data is only able to capture an incomplete picture of policies made until that time. Indeed, our initial decision to limit data collection until October 1, 2021 was premised on the assumption that collecting relatively complete data for a shorter time span would produce research of greater rigor and reliability then collecting relatively incomplete data for a longer time span.

Finally, we note that while support from the PERISCOPE Consortium and EU Horizon 2020 funds has played a crucial role in laying the foundation for this work, the vast majority of the work coding, harmonizing and cleaning data for EU policies has been made possible by a vast network of more than 350 volunteers organized by the CoronaNet Research Project over the last three years. We note this information not just to gratefully acknowledge the tremendous work this community of volunteers has been able to deliver, but to raise awareness that significantly more resources will be needed to ensure high quality, timely and complete data collection efforts to respond to future public health threats, a topic that we explore more fully in “Study 3: The Future of COVID-19 PHSM Tracking.”

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Study 1: Summary Indices of COVID-19 PHSMs

Introduction

As our descriptive account for PHSM policies made in the EU demonstrates, the scale of the pandemic and the diversity of government responses makes it difficult to aggregate the increasingly complex available datasets into higher level measures which are reliable and methodologically rigorous. As we show in this section, which draws from the research note written by Kubinec et al. (2022), COVID-19 policies need to be understood as a part of larger policy goals to avoid misleading inferences. Using simulation evidence, we show that it is quite possible to estimate the wrong sign of a policy indicator in a regression model of COVID-19 policies on COVID-19 infections if the latent process generating COVID-19 policies is not taken into account.

To help address this problem, we introduce here model-based aggregated measures built on a theoretical prior that policymakers face a cost-benefit decision problem regarding COVID-19 suppression within a fixed budget constraint (Kruse and Strack, 2020). As we show with a simulation of the well-known ideal point model (Clinton et al., 2004), if multiple discrete policies share a common goal like encouraging mask-wearing, then regressing individual policy indicators on an outcome like COVID-19 cases can result in statistically significant estimates of the wrong sign (Hünermund and Louw, 2022; Keele et al., 2020). We believe this false inference is what explains counter-intuitive estimates in influential studies, such as Haug et al. (2020), who show strong positive associations between policies like lockdowns and COVID-19 infections.

By explicitly incorporating the policymaker choice problem via latent variable modeling, we can derive indices based around the shared goals of similar policies that permit appropriate inferences on the origins and effects of COVID-19 policy initiatives. These indices, which we call policy intensity scores, are derived from new granular data from the CoronaNet Research Project (Cheng et al., 2020) combined with existing data from the Oxford COVID-19 Government Response Tracker (OxCGRT) (Hale et al., 2021).

The indices we estimate are based on the different strategies that policymakers implemented with either demand-side goals, such as preventing people from being infected, or supply-side goals, such as supplying a high level of health care and monitoring to treat infections adequately. Based on the observed policymaking pattern over the course of the pandemic, we estimate four demand-side indices that group granular policies together based on the goals of social distancing, encouraging mask-wearing, regulating business interactions, and regulating school interactions. For supply-side measures, we estimate two indices that group policies aimed at monitoring the health status of the population and procuring supplies of health resources, both human and material. To produce estimates based on our ideal point theoretical model, we employ time- varying statistical measurement models that allow us to use 164 de jure policy indicators to derive six time-varying policy intensity scores for over 180 countries from 1 January, 2020 to 1 May, 2021 along with estimates of potential measurement error in the scores (Cheng et al., 2020).

Theory and Methods

We present an abbreviated theory of our measures and include more detail in the research note by Kubinec et al. (2022). We rely on the ideal point formulation (Clinton et al., 2004; Poole and Rosenthal 2007) of the policymaker choice problem: a policymaker i has to decide how many resources to devote to a given policy goal that would help alleviate COVID-19. Each goal has a number of different possible policies j that could help achieve that goal. The policymaker sets the level of resources x_i devoted to the particular goal, and then implements those policies j that maximize the budget constraint x_i. To estimate the model, we use Bayesian item-response theory (Clinton et al., 2004) that permits us to obtain measures of the policymaker investment level, or what we term policy intensity scores, $\hat{x}_{it}$ for each country i and day t in our sample. By employing Bayesian item-response theory, we build on the prior literature leveraging this powerful and intuitive specification to estimate latent concepts like democracy (Coppedge et al., 2019), state capacity (Hanson and Sigman 2021), institutional transparency (Hollyer et al., 2018), and respect for human rights (Fariss 2014).

We also learn from the model discrimination parameters δ_j, which represent the relative cost of different policies to the policymaker such that policies with high discrimination are much more likely to be implemented when the amount of resources $\hat{x}_{it}$ devoted to a policy goal is also high. We cannot observe the underlying policymaker costs and benefits which determine their level of resource commitment x_i, although we can look at post-estimation associations with possible causes of policymaker heterogeneity such as political institutions.

Each policy goal represents a distinct outcome that policymakers sought to achieve during the pandemic. Our taxonomy follows existing research and focuses on both demand-side and supply-side goals designed to suppress the pandemic. While we provide a more thorough mapping of our 164 distinct policies to policy outcomes in the SI, we briefly define the different policy goals below:

Demand-side Policy Goals

- General social distancing: these can include lockdowns, curfews, travel bans and other policies which restrict mobility and encourage isolation from other people. The goal of these diverse policies was to prevent social contact for all individuals in a given country.
- Masks: mask policies are aimed at encouraging mask wearing, which came to be seen as one of the most important ways of preventing transmission of COVID-19.
- Business restrictions: the policy goal of business restrictions was to prevent the mixing of people due to their need to be physically present at enclosed workplaces.
- Schools restrictions: the policy goal of school restrictions was to prevent mixing of children and teach- ers at educational institutions where social distancing was often not possible due to the nature of educational institutions.

Supply-side Policy Goals

- Health Monitoring: when implementing health monitoring policies, governments sought to restrict the spread of the virus by tracking who has been affected by the disease and preventing further transmission through contact tracing.
- Health Resources: this policy goal aimed to increase public and private capacity to treat the disease, whether that involved material resources like personal protective equipment (PPE) or paying for additional health care personnel.

A full description of the 164 underlying policy indicators mapped onto each policy goal is available in the supplementary information. To account for provincial and municipal-level policies in the data, we add the population-weighted share of these policies to the overall national score to ensure that highly federal systems, such as the United States, are not counted as having no COVID-19 policies.

Non-Identification of Policy Effects

The primary problem that we solve with this method is the fact that the policymaker choice process results in policy indicators that are endogenous, that is, they are caused by a common process because they are aimed at the same policy goal. To illustrate this problem, in the Supplementary Information section of Kubinec et al. (2022), we simulate the ideal point model, generating policymaker intensity scores xi and ten policy indicators. We next simulate a regression model in which the resource commitments xi cause reduced COVID-19 counts. We then fit a regression model with an IRT estimate of the policy intensity scores and a regression model with all of the policy indicators.

As we show in the SI Figure 2, the IRT model is able to recover the true latent effect of policy intensity on simulated COVID-19 cases. When we employ a regression model that incorporates estimated measurement error in the scores, RMSE vis-a-vis the true effect shrinks further by approximately 50%. However, the regression with individual policy indicators as a substitute for the aggregated scores returned estimates that were highly misleading. SI Figure 3 shows that about 40% of the regression coefficients from a naive regression model end up statistically significant in the wrong direction compared to the true effect of the policy-induced behavioral change in our simulation. Furthermore, more sophisticated approaches, such as dropping policy indicators that show very high variance inflation factor (VIF) scores or employing a lasso model, show even worse rates of false positives. By design, the only effect of policy indicators on the outcome happened via the policy intensity score xi, so it is a false inference to conclude that any of the policy indicators caused increased COVID-19 case counts.

We believe this regression artifact is a specific case of a more general problem with interpreting “control” variables in regression models without a well-specified causal graph or other causal identification design (Hünermund and Louw 2022; Keele et al., 2020). When we examined the simulation data and entered each policy indicator singly into a regression model, the reported association was always negative. A multivariate linear model will find those regression coefficients that best fit the multi-dimensional data to the outcome; this process can be thought of as a compression that can obscure total causal effects.

Based on this simulation, we re-examined the existing literature with an eye to these false inferences. One of the first influential studies of non-pharmaceutical interventions (NPIs) by Flaxman et al. (2020) made it clear that high correlation between policies would make it difficult to obtain estimates of partial effects, a difficulty the study authors were unable to resolve satisfactorily. We have found further evidence in the literature that studies with linear regression models did at times estimate increased COVID-19 infections for some NPIs in, but these results were ignored or even manipulated away. The Haug et al. (2020) study, cited 1,021 times on Google Scholar to date, reports estimates of varying strength in repressing the COVID-19 reproduction number Rt across linear model specifications in their Figure 1 but do not code any results as doing the opposite. In their supplementary material, though, Figure 13 shows that their lasso regression with CoronaNet policy indicators estimated a strongly positive association between Rt and Quarantine policies. On the other hand, when they enter each policy indicator separately into a regression model in supplementary Figure 12, each CoronaNet policy indicator has a negative or zero association with Rt, suggesting that the positive association for Quarantine was related to endogeneity between indicators. For the reader's reference, we include annotated versions of these figures in our SI Additional Figures section.

Similarly, the Sharma et al. (2020) analysis of NPIs in Europe reports only Rt reductions or no associations for NPIs in the main text (see Figure 2 in the main text). However, these NPI effects are an artifact of a highly informative prior they placed on the NPI regression coefficients, biasing them towards reductions in Rt (see p. 7 top of column 2), a prior they also employed in an earlier study of NPIs (Brauner et al., 2021). When the authors employed a weakly informative prior centered on no effect, they instead show opposite associations of increasing Rt for some NPIs, including restricting public gatherings and limiting the number of people who can congregate in a private residence–but this information is only reported in their supplementary Figure 13, and the most contrasting effect is censored from the plot due to axis limits. Again, an annotated figure from their paper is available for reference in our SI Additional Figures section. For this reason, we believe our policy intensity scores are not only an improvement over currently available datasets in terms of depth and scope, but also resolve a critical problem in estimating the effect of policymaker interventions on relevant COVID-19-related outcomes that the existing literature sidesteps.

Research Question

While our aim in creating these indices is to produce a general purpose tool for the research community, we do also want to examine to what extent these measures either confirm or refute some of what we know about how COVID-19 policies have affected human behavior. Though it is difficult to identify the effect of these policies, also known as non-pharmaceutical interventions (NPIs), on COVID-19 infections directly (Perra, 2021), we instead look at associations between these policy intensity scores and country-level average interpersonal contact rates as collected by Facebook in daily surveys (Barkay et al., 2020). As predictors, we include not only our indices, but also COVID-19 cases and deaths, as these can cause both higher policy restrictions and reduced contact via increased fear of contracting the virus. We employ a Bayesian regression model to permit us to include an estimate of posterior measurement error for each policy intensity score (Bürkner, 2017), which our simulation also shows to be the optimal specification. Furthermore, we explicitly estimate the correlation between the indices through a multivariate normal prior on the latent policy scores, allowing us to incorporate any residual overarching strategies across the policy domains.

Our aim in estimating this model is not to claim that we have causally-identified the effect of policy efforts. To do so would require us to pose a well-defined counterfactual in which, if policymakers had increased their commitment to achieve a specific goal, they would have seen a different contact rate in their country. Because we lack a causally-identified design, we cannot rule out confounders or colliders that could bias our results. At the same time, we do believe these associations can be important for applied research especially as we continue to learn more about the pathways that these costly policies affected human behavior.

Finally, we include day fixed effects in our specifications because we believe the most valid comparison to make with over-time panel data is to compare different countries on a given day (Kropko and Kubinec, 2020). The nature of the virus changed over time as it mutated, which would make comparisons of a given country with itself over the sample period (as a country fixed effects model would require) of limited utility as it is difficult to account for virus mutation, and beyond the scope of this exercise in any case. By limiting the model to variation within a particular day, we ensure that the comparisons we make are as informative as possible without strict causal identification.

Analysis of Indices

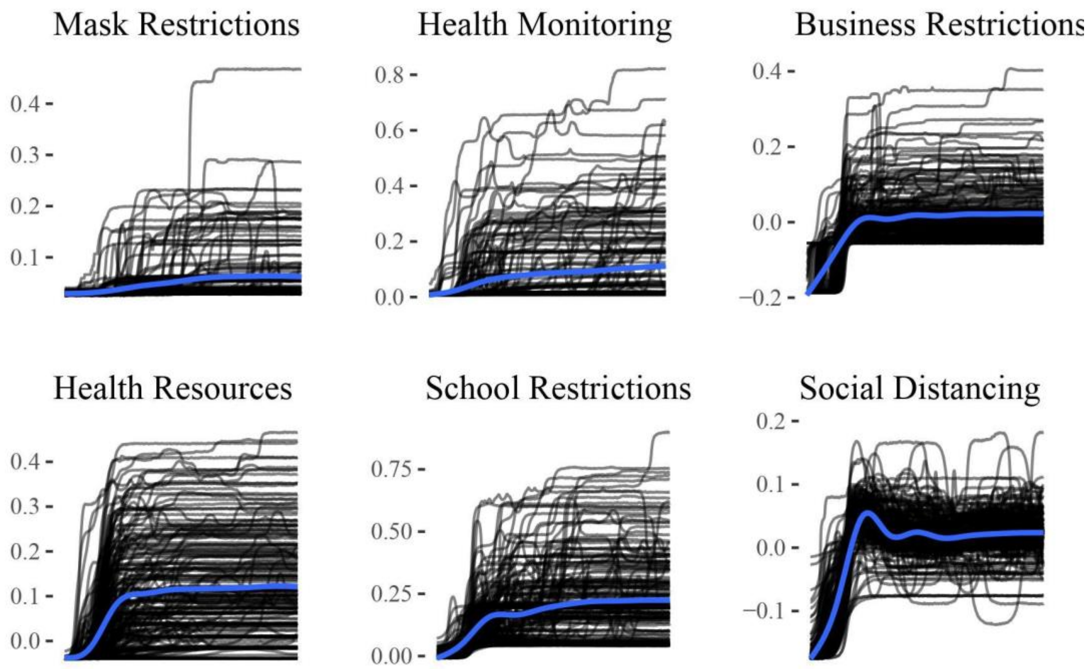

Figure 47: Policy Intensity Index Scores for All Countries

Note: Plot shows the median posterior estimates for country policy intensity scores along with a smoothed LOESS average.

We first report the full distributions of each index in Figure 47 with the country posterior medians as dark gray lines and a smoothed average as a blue line. As there are too many countries to distinguish in a single plot, we select ten countries from diverse areas of the world and show indices scores for each in Figure 48. As each of these figures shows, there are similarities across the indices insofar as policy intensity generally increased in the early months of the pandemic.

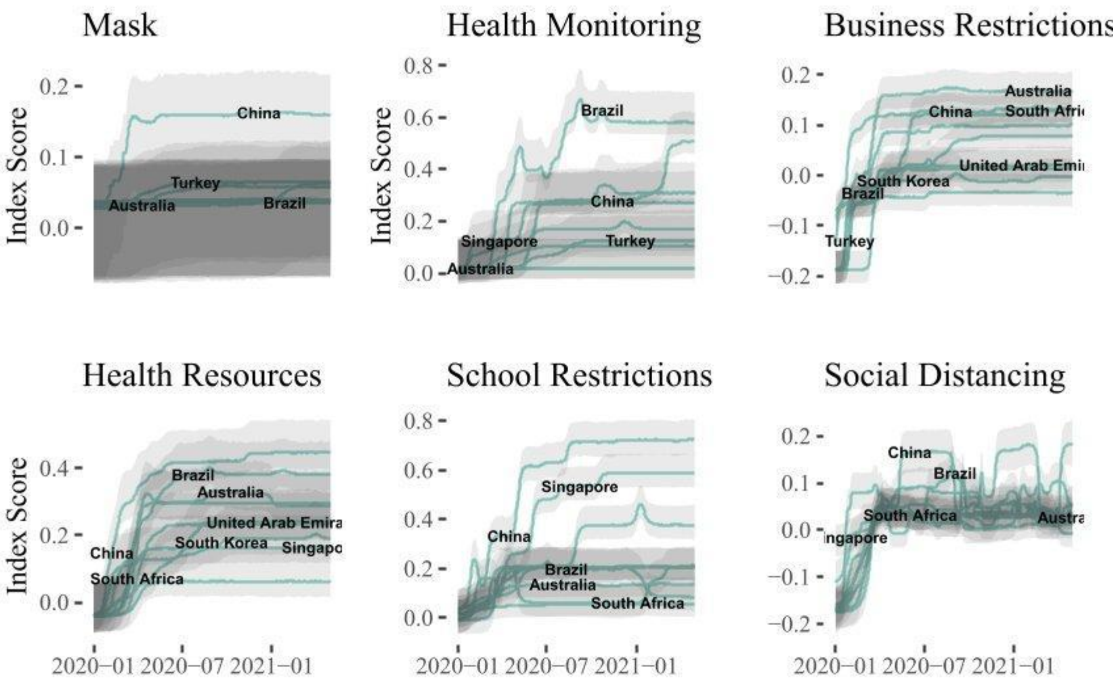

Figure 48: Policy Intensity Index Scores for 10 Countries

Note: Plot shows the median posterior estimates for country policy intensity scores with the 5% to 95% posterior uncertainty intervals in gray.

To help interpret the measures, Figure 49 and Figure 50 show the distribution of discrimination parameters for each de jure policy indicator in each index separately. These parameters represent the degree and direction of association between the observed policies and our latent policy intensity construct. As can be seen, the discrimination parameters exclusively line up on the right hand-side of the plot, with some parameters estimated at close to zero. The shared sign of the discrimination parameters provides some validity to our interpretation of the latent variable because the priors of our model permitted both positive and negative values for the discrimination parameters. If our interpretation of the scores as the level of policy investment was incorrect, we might observe instead a latent variable with two polar sides, as is the case for latent variables of political ideology. As such, the unidirectional nature of the latent variable provides greater confidence that we are indeed estimating policy intensity. Furthermore, we find that the OxCGRT indicators are always in the same direction as the CoronaNet indicators, which shows that the indicators are tracking the same latent dimension despite different coders and coding schema.

The discrimination parameters that are close to zero indicate policies that contribute little information about the overall intensity of that policy domain. As we used relatively high-cost policies to identify the model, policies with low discrimination represent policies that did not appear to contribute to the over- arching policy goal according to the average policymaker in our sample.

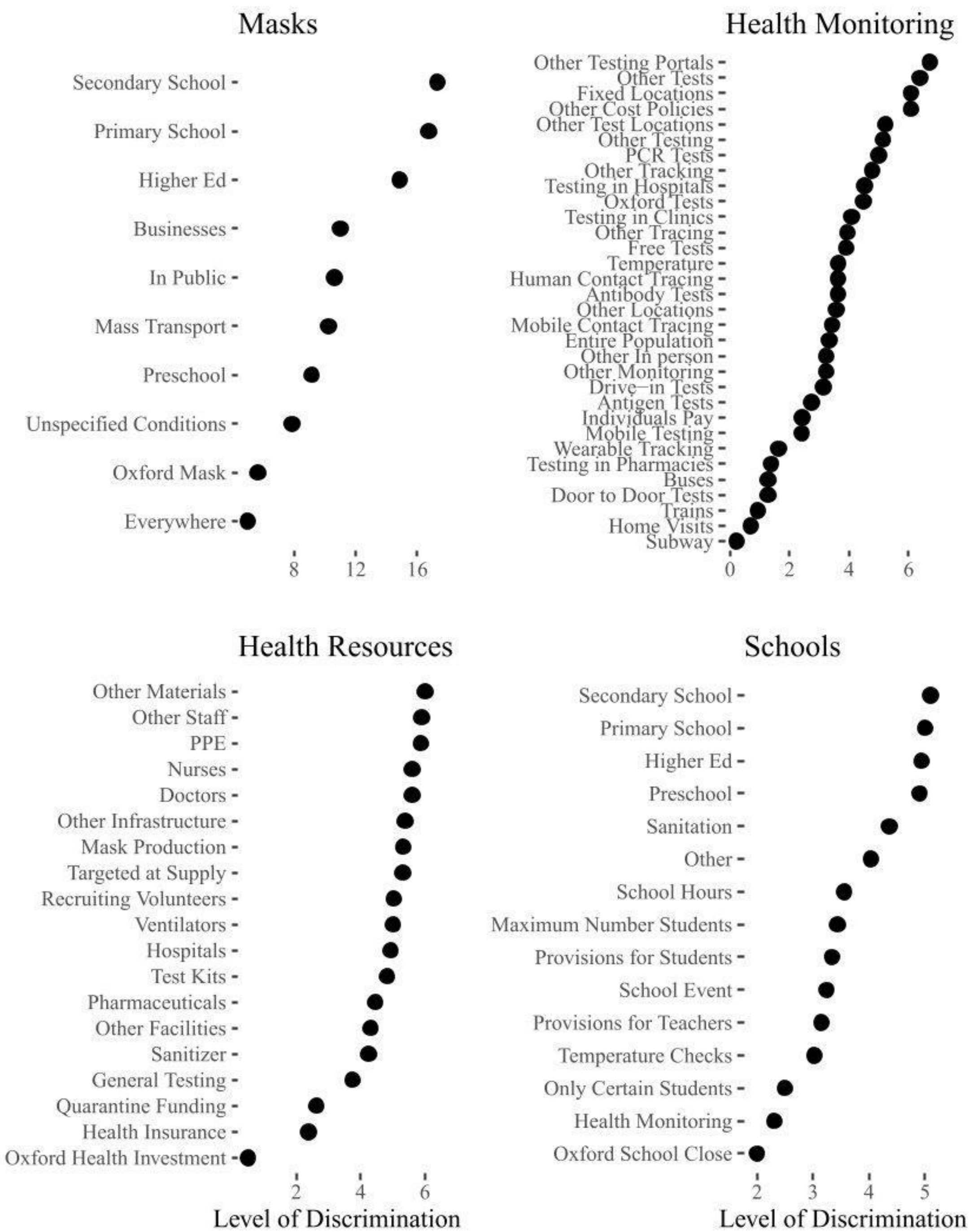

Figure 49: Discrimination Parameters I

Note: Plot shows the median posterior estimates for policy indicator discrimination parameters. The 5% to 95% posterior uncertainty intervals are also plotted but do not appear because they are too small to be visible.

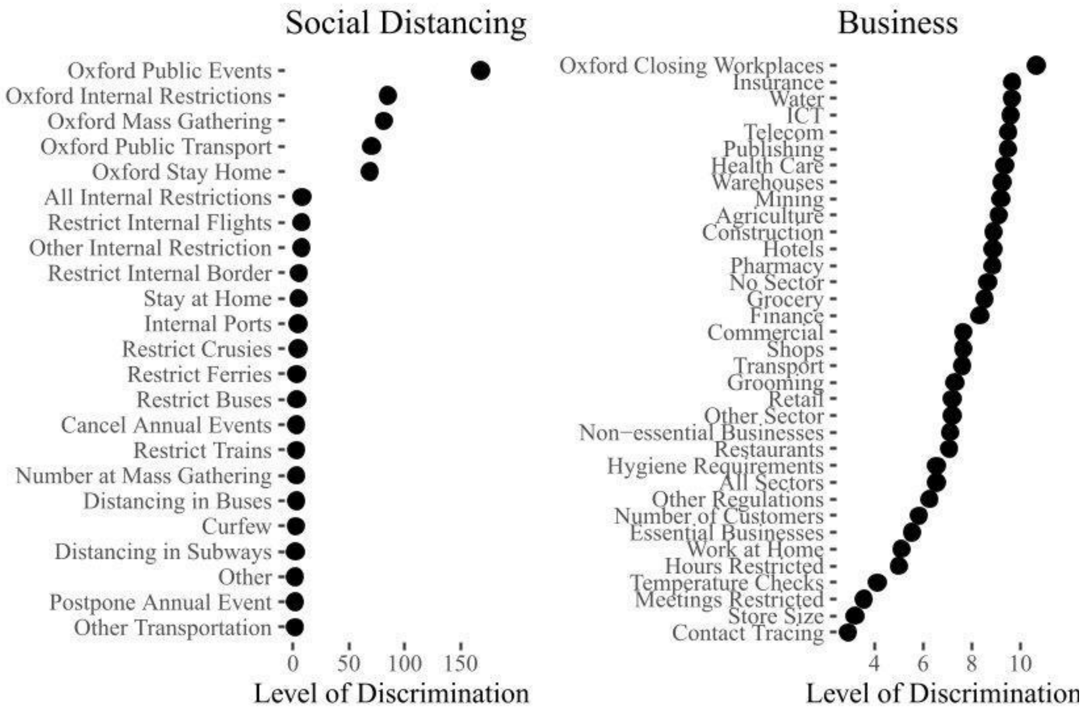

Figure 50: Discrimination Parameters II

Note: Plot shows the median posterior estimates for policy indicator discrimination parameters. The 5% to 95% posterior uncertainty intervals are also plotted but do not appear because they are too small to be visible.

To demonstrate the utility in these scores for learning about the effects of NPIs, we replicate the Flaxman et al. (2020) study in the SI and show how the reduced correlation between our policy intensity scores, which is a result of using a much greater variety of policy indicators combined with a measurement model, permit us to obtain clear inferences–though these inferences are still conditional on their COVID-19 model assumptions, which are not trivial. Furthermore, this replication reveals the importance of measurement error as some of the effects of NPIs differ depending on whether we explicitly incorporate the policy intensity scores' error in their model.

Results of Contact Regression

In Table 1 we report results from a Bayesian regression model of average contact rates and our policy intensity scores with associated measurement error. As discussed in the Methods section of the SI in Kubinec et al. (2022), we can directly incorporate measurement error by estimating each policy intensity score as a latent Normally-distributed variable with a standard deviation and mean given from the posterior samples of the IRT model. In this way, we can use the power of Bayesian inference to propagate uncertainty forward across distinct specifications. Furthermore, as in the simulation, by estimating each policy intensity score as a latent variable with measurement error we can in fact improve upon the scores by finding their most likely values conditional on the regression model.

The results in Table 18 accord with empirical observations of the pandemic. General social distancing policies show the clearest and strongest association with reduced average contact rates. Because we are using day fixed effects to force cross-sectional comparisons, we can interpret this association as implying that countries with above average intensity scores for social distancing showed below average contact rates. We do not find much weaker associations for restrictions confined to certain domains, such as businesses or schools. These weaker associations could be due to substitution effects in which closing businesses results in more social contact in other areas.

Table 18: Estimates of Regression of Contact Rates on Policy Intensity Scores

Variable	Posterior Median and 5% - 95% Interval	$\hat{R}$
Cases Per Capita	0.002 (0, 0.003)	1.008
Deaths Per Capita	0.009 (0.008, 0.011)	1.005
Business Restrictions	-0.011 (-0.012, -0.01)	1.001
Health Management	0.01 (0.009, 0.012)	1.002
Social Distancing	-0.047 (-0.048, -0.046)	1.003
School Restrictions	-0.01 (-0.011, -0.008)	0.999

Masks	0.045 (0.044, 0.047)	1.001
Health Resources	0.012 (0.011, 0.013)	1.002

Note: Coefficients are the posterior median values and the uncertainty intervals are the 5% to 95% posterior density intervals. Cases per capita and deaths per capita were both standardized within the country. Not shown are day fixed effects and the estimated posterior values of the intensity scores incorporating measurement error. The Rˆ statistic measures the ability of the independent MCMC runs of the sampler to converge, with values less than or equal to 1 being preferred.

As we should expect, policy domains that had nothing to do with changing contact patterns, such as mask restrictions, health management and health resources, are positively associated with contact patterns. We might hypothesize that these positive associations are due to people becoming more comfortable with contact because of policies that are able to mitigate the risks of the disease without requiring social distancing. This explanation would appear particularly relevant to mask policies, which have a very strong association with increased contact rates. By comparison, the health management and health resources associations could also be explained by people in wealthier countries having naturally higher levels of contact and also more state capacity to tackle the pandemic. More strongly identified research designs would be required to pin down the exact reasons for these associations.

The cases and deaths per capita variables are included to block the back-door path between people's fear of the disease leading to reduced contact rates and higher infections also causing stronger policy responses. As such, we want to avoid assigning any kind of causal interpretation to these variables. With these caveats in mind, a modest yet positive association between these variables and contact rates would again match with the extensive literature on how COVID-19 spreads through personal contact. With the inclusion of day fixed effects, we can interpret this association cross-sectionally: countries with above average levels of COVID-19 cases and deaths also had above average reported interpersonal contact rates.

Discussion

The results that we present in this paper would not be considered surprising given what we have learned about the spread of COVID-19 after the three years of the pandemic.

General social distancing policies that apply to all individuals in a given country are the most likely to reduce aggregate contact rates as substitution effects might undermine more targeted measures. Policies that did not have a goal of reducing contact rates, such as mask policies and the production of health resources, show a positive association with contact rates. While interpreting associations without clear causal identification is always challenging, it would appear plausible that more adept monitoring of the pandemic through contact-tracing and masking policies could allow for a high equilibrium level of contact, especially considering that we have included the effect of COVID-19 cases and death in the model.

We view the lack of relative surprise at these findings as a positive for our study's aim, which was to derive theoretically-informed measures of policy activity that are comparable across countries and over time. As we have discussed, creating these measures is quite challenging considering the diversity in policies available and the ways that policies changed quickly over time. We believe that the failure to incorporate this complexity explains some of the contrasting findings and questionable modeling choices in the existing literature, suggesting that quarantines, for example, may actually increase COVID-19 infections. For these reasons, our ability to show common-sense associations between our outcomes and a very important mediator of infections–inter-personal contact–shows that our scores should serve as a valid measure of COVID-19 policy commitment levels.

The potential range of application of our scores extends far beyond what we present in this research note. The value of the scores are substantively interesting to social scientists as we seek to understand how countries with varying cultures, political institutions and economic structures responded to the pandemic. Scholars in medicine and public health can employ these scores as robust measures to evaluate the relative success of policy efforts at combating the pandemic. Establishing these foundational elements of a research program on COVID-19 policies is a crucial step as we seek to build the capacity to respond to the next pandemic before it starts.

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Study 2: Data Harmonization of COVID-19 PHSMs

Introduction

Comprehensive, high quality and timely COVID-19 PHSM data is crucial for forwarding understanding of the pandemic but unfortunately no single dataset has been able to capture the full scope or scale of such data (see Study 3: The Future of of COVID-19 PHSMs Tracking). Not only can harmonizing this data get us closer to this goal, it can also ensure that the data collected by trackers that have stopped their work are not lost and that the original sources underlying this data are preserved.

Data harmonization is the practice of “reconciling various types, levels and sources of data in formats that are compatible and comparable, and thus useful for better decision-making” (Zeb et al., 2021, p. 360). It is thus distinct from data integration, also known as data linkage (Boyden and Walnicki, 2021), in that (successful) data harmonization results in a single cohesive dataset made from conceptually similar datasets (e.g. combining multiple datasets on COVID-19 PHSM) while data integration results in a multidimensional dataset made from conceptually different datasets (e.g. combining multiple datasets on COVID-19 PHSM, COVID-19 deaths, and GDP; e.g. the PERISCOPE Data Atlas (Parimbelli et al., 2022; Pala et al., 2022; Louie et al., 2007). To create a cohesive dataset, data harmonization can be understood as resolving differences along at least three dimensions (Fichtinger et al., 2011):

- Structure (i.e. conceptual schema)
- Syntax (i.e. data format)
- Semantics (i.e. intended meaning of words)

In this section, we draw on Cheng et al. (2023) to introduce our novel, rigorous methodology for harmonizing PHSM data for EU data, though we note that our overall aim is to harmonize data for countries all around the world. We believe that doing so can also improve inference on the drivers and effects of policies in the EU insofar as it is important to compare not only what policies governments in the EU implemented in response to the pandemic but to also compare what they did relative to countries outside of the EU. Though dozens of research groups have sought to track PHSM, these individual data tracking efforts have succeeded in providing only an incomplete portrait of government COVID-19 responses, a situation exacerbated by the fact that many have stopped entirely, often due to funding constraints. Harmonizing PHSM data with due haste is desirable not only because of the emergency nature of the pandemic, but also for preserving the original sources underlying these data. We describe our efforts to seamlessly harmonize 8 different PHSM tracking efforts for EU countries and beyond:

- ACAPS Government Measures (ACAPS) (ACAPS, 2020)
- COVID Analysis and Mapping of Policies (COVIDAMP) (Katz and Graedn, 2020)
- Canadian Dataset of COVID-19 Interventions (CIHI) (for Health Information, 2021)
- CoronaNet Research Project (CoronaNet) (Cheng et al., 2020)
- John Hopkins Health Intervention Tracking for COVID-19 (HIT-COVID) (Zheng et al., 2020)
- Oxford COVID-19 Government Response Tracker (OxCGRT) (Hale et al., 2021)
- World Health Organization EURO (WHO EURO) and US Center for Disease Control (WHO CDC) datasets on COVID-19 policies (retrieved from the WHO Public Health and Safety Measures (WHO PHSM) (Organization et al., 2022))

into the CoronaNet taxonomy with the help of 350+ research assistants around the world to provide a fuller picture of government responses to the pandemic.

In what follows, we first provide a discussion of the benefits, drawbacks and limits of our PHSM data harmonization exercise. We then provide an overview of the challenges we faced in harmonizing PHSM data. We finish with summarizing methodology we used to address these challenges when harmonizing PHSM data. To understand how our data harmonization compares with the only other existing effort to harmonize PHSM data that we are aware of, please see the Appendix.

Evaluating the Value of COVID-19 PHSM Harmonization

Given the time and resource intensive nature of harmonizing data, it is important to first assess the value of doing so before beginning. Below, we assess the value of harmonizing PHSM data along a number of criteria, including what can be gained for data completeness, what can be lost, what the limits of data harmonization are. After having provided greater context for understanding the value of harmonizing PHSM data, we describe the challenges that we faced in harmonizing PHSM data and our methodology for dealing with these challenges.

What can be gained from data harmonization? While there are more than 20 different datasets which capture data on government responses to the pandemic, no single dataset has been able to track all policies in part because the scope of the work has been too large for a single endeavor to handle with existing resources. Meanwhile, though there is clearly some duplication of effort among these datasets, the great variation in geographic coverage and temporal coverage in these datasets suggest that there is a high degree of non-overlapping observations in these datasets.

To our knowledge, no individual effort to document PHSM has been able to do so for all countries. Indeed, though at the time of writing, there are 128k+ observations unique to the CoronaNet dataset (150k+ total including already harmonized data), we identified 150,052 observations for the 7 datasets external to CoronaNet combined for data available until September 10, 2021. September 2021 was chosen as the cutoff date given our available resources and because most data tracking efforts had stopped or significantly slowed their data collection by this date except for OxCGRT, CIHI and WHO EURO (OxCGRT has since stopped data collection in early 2023 and the latter two stopped in 2022). Should more resources become available we will expand our efforts to harmonize records for these datasets beyond this date. Based on our efforts so far, around 83% of external data do not overlap with the CoronaNet dataset, and of these around 44% can be recoded, suggesting there are potentially 55k additional observations to recode.

Data harmonization would thus lead to a dataset that is more complete and consistently coded across time and space then is currently available. Indeed, Figure 51 shows that while most datasets have fair coverage of PHSM until the summer of 2020, with data from CoronaNet being especially rich, data after this time is more limited especially for trackers that stopped data collection (e.g. HIT-COVID, ACAPS). OxCGRT, meanwhile, has been able to document more policies for later months compared to other datasets.

Meanwhile Figure 52 illustrates differences in the number of policies captured across continents. Clearly, all trackers have asymmetrically focused on countries in Europe and North America. While data harmonization cannot compensate for this relative unevenness in data coverage, it can significantly improve coverage of non-European and non-North American countries in an absolute sense.

Moreover, as Figure 53 shows, most external datasets either focus on gathering national-level data for countries around the world or subnational data for a more

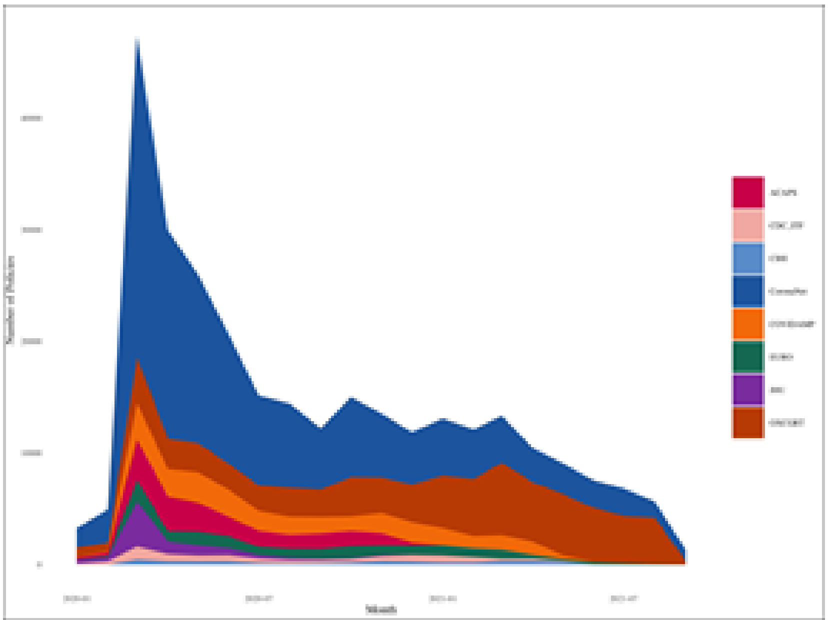

Figure 51: Number of policies per date recorded by 8 different COVID-19 PHSM tracking efforts

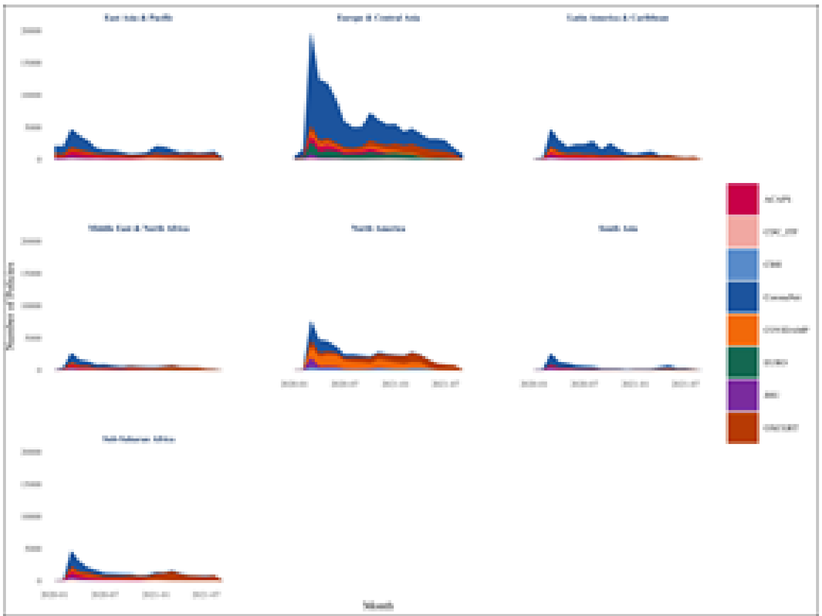

Figure 52: Number of policies per date, grouped by region, recorded by 8 different COVID-19 PHSM tracking efforts

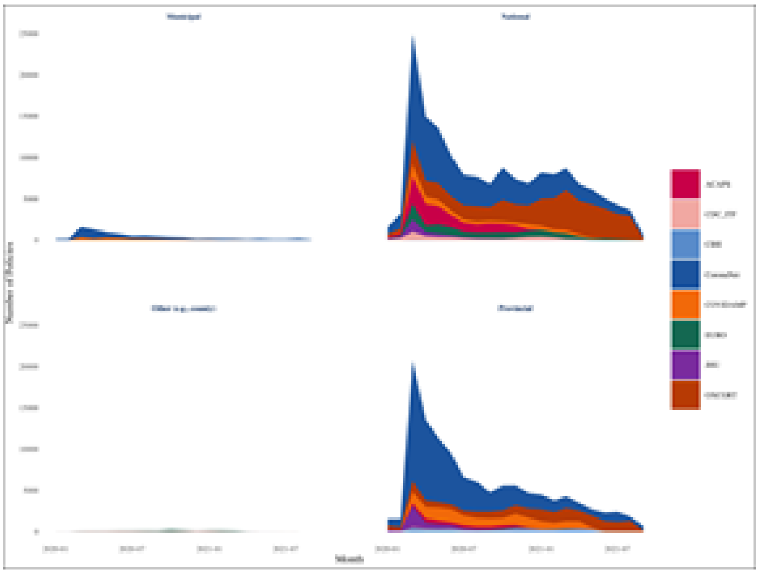

Figure 53: Number of policies per date, grouped by the initiating level of government, recorded by 8 different COVID-19 PHSM tracking efforts

limited number of countries, but rarely both. As such, data harmonization efforts will substantially improve the availability of PHSM data initiated at the national level and to some degree, the provincial level as well.

Moreover, since many PHSM trackers have stopped data collection due to funding constraints, data harmonization into the CoronaNet taxonomy also ensures that these data can live on and be used in an active research project (Cheng et al., 2022). Note that most data from external datasets do not save original PDF sources, leading to the gradual disappearance of the primary sources on which PHSM datasets are built. By recoding this data using the CoronaNet methodology, PDFs of such sources are saved before they disappear. If they have already disappeared, where possible, new sources of information are found and saved, mitigating the problem of digital expiration.

Overall, data harmonization greatly advances the completeness of PHSM data on a number of dimensions, including time, space, and administrative levels. Moreover, our data harmonization methodology also allows each policy in the external dataset to be evaluated independently, which can improve the quality of the PHSM data overall. This is all the more valuable given that while PHSM data has generally been made publicly accessible in close to real time because of the emergency nature of the pandemic, research groups have not been able to guarantee data cleanliness (see subsection 4.2). Progress on these dimensions greatly improve the research community’s ability to conduct analyses on the COVID-19 pandemic which can yield results with both greater external validity and generalizability (in e.g. cross national analyses) as well as analyses that can yield outcomes with greater internal validity and with fewer potential confounders (in e.g. subnational analyses).

What can be lost from data harmonization? The main loss when harmonizing PHSM data into the CoronaNet taxonomy is with regards to measures that CoronaNet does not capture and for which, the benefit of its relative fine-grained taxonomy are moot. The most prominent of these measures are the economic ones, such as business subsidies or rental support. For measures for which there is conceptual overlap between the CoronaNet taxonomy and other taxonomies, the fact that the data were harmonized to the CoronaNet taxonomy, which by far has the most detailed taxonomy of the 8 datasets, minimizes the extent to which information was lost from the harmonization process.

Meanwhile, the benefits of data harmonization aside, there can be real scientific value when different researchers approach similar research topics with different research designs (Cohen et al., 2020). In support of this, we further make taxonomy maps between the CoronaNet taxonomy and the taxonomy of each respective dataset publicly available through our Supplementary Materials. These maps can not only help users better understand how to use different datasets, but can also provide robustness checks of COVID-19 related research and bolster the trans- parency and replicability of our data harmonization efforts.

What are the limits of data harmonization? While we believe that our efforts to harmonize data across 8 different datasets will provide the most complete picture possible of COVID-19 PHSMs for the EU, they will still fall short of a dataset that will reflect all COVID-19 PHSMs ever implemented. Though it is inherently impossible to assess how much data will still be missing after data harmonization is finalized — a complete dataset needs to exist to make this assessment and it does not — we offer some insights as to where and why data may be incomplete. Specifically, our complete, harmonized dataset will still lack information on subnational policy making for a number of countries as well as from low state capacity governments.

Our review of projects gathering COVID-19 policies suggests that most projects focus on national level policies, limiting what data harmonization can achieve. Table 12 shows the coverage of data on subnational policy making for all datasets that we know to be in existence, using data available at the time of writing. Most datasets aside from CoronaNet do not collect subnational data and to the extent that they do, they overwhelmingly focus on the United States. Meanwhile, though the CoronaNet data does capture subnational data for some countries, given the volume of policies generated and limited resources, we are only able to capture this data for reduced time periods. However, available evidence suggests that subnational policy has taken place in many other countries beyond the ones listed in Table 25 in the Appendix. Data from both Pandem (Edgell et al., 2020) as well as CoronaNet's internal surveys suggest that there is subnational policy making in anywhere from 30 to 90 countries

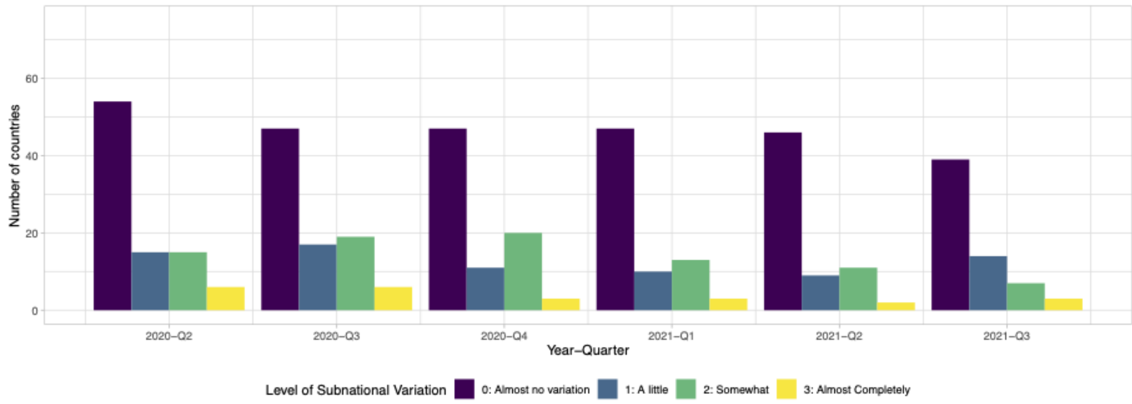

Figure 54: Extent of policies made at the subnational level by quarter, from CoronaNet Research Project internal assessment data.

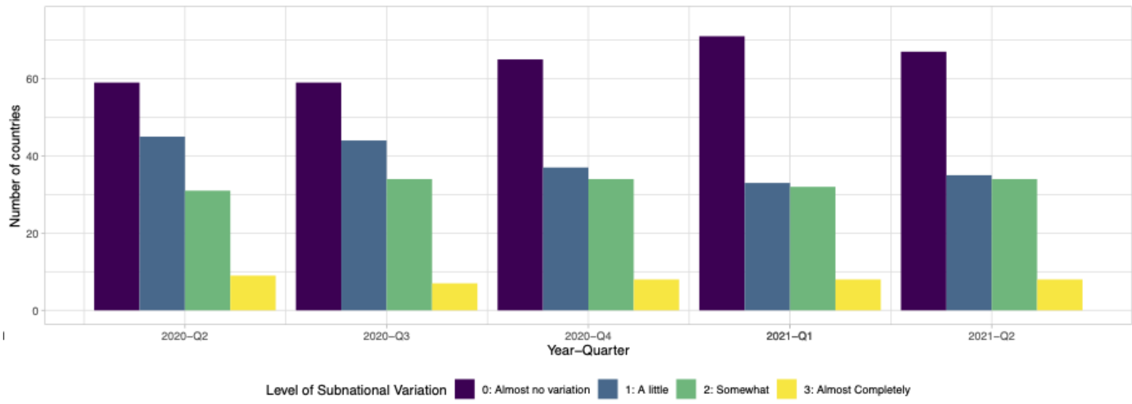

Figure 55: Extent of policies made at the subnational level by quarter, from PanDem

at any given point in time, as visualized in Figure 54 and Figure 55. Note that the CoronaNet internal surveys followed the same coding scheme as PanDem's [subvar] variable; at the time of writing, CoronaNet's internal assessment covers 98 countries for 6 quarters while Pandem's data covers 144 countries for 5 quarters, with 83 countries covered in common across both.

What underlying biases may need to be accounted for when harmonizing data? As we elaborate more fully below, PHSM data is unusually challenging to harmonize because the emergency nature of the pandemic gave rise to multiple complex taxonomies and corresponding datasets that have had varying levels of quality, completeness, and underlying source material.

While we employ some automated processes to harmonize taxonomies and deduplicate data, our methodology is overwhelmingly reliant on the analog process of recoding external data based on the original sources found in the external data rather than relying directly on the observations available in the external data itself. In doing so, we can ensure that whatever errors might have been made in the automated taxonomy harmonization processes, which itself was adjusted to account for systematic errors in the external data (see Section 4.3.1), can be rectified manually later. Meanwhile we have also additionally vigorously tested our automated deduplication strategies to ensure that we are biased towards keeping duplicates to be removed later manually rather than mistakenly removing observations that are not duplicates (see Section 4.3.3).

What cooperative resources are available for harmonizing data? External data partners were either co-hosts or participants in the two conferences hosted by CoronaNet: the PHSM Data Coverage Conference (February/March 2021) and the PHSM Research Outcomes Conference (October 2021). During both conferences, though especially the first, trackers discussed common challenges and solutions to their data collection efforts, especially with regards to taxonomy and organization. Both the planning of the conferences and conferences themselves helped increase mutual understanding and collegiality among trackers (Cheng et al., 2022). For more information, please see https://covid19-conference.org or the shared statement written by conference participants outlining a framework for cooperation and collaboration (PHSM 2021).

Meanwhile, bilateral exchanges also played an important role in identifying and overcoming specific challenges with regards to mapping and harmonizing data for a given dataset. For instance, researchers from both CoronaNet and HIT-COVID were involved in building the HIT-COVID taxonomy map, which greatly facilitated the mapping process. They were also involved in piloting the data harmonization process, which also increased the speed at which it could be done. The fact that HIT-COVID and CoronaNet built their taxonomies for COVID-19 vaccine policies with mutual feedback from the other also facilitated the mapping of this particular policy type. Meanwhile, ACAPS, COVIDAMP, and OxCGRT generously made themselves available for clarifying about confusions or misunderstandings about their respective taxonomies which helped make the mappings more accurate. However, despite repeated inquiries to the WHO PHSM dataset to initiate such cooperation, we found them to be unresponsive which made the taxonomy mapping exercise with the WHO PHSM dataset comparatively difficult. Overall, we found that greater communication and cooperation between leaders of different datasets was an important intangible in facilitating the data harmonization process.

What are alternatives to data harmonization? While in this section we concentrate on presenting our rationale and methodology for qualitatively harmonizing PHSM data, in Kubinec (2022), presented in the section above ("Study 1: Summary Indices of COVID-19 PHSMs), we introduce a Bayesian item response model to create policy intensity scores of 6 different policy areas (general social distancing, business restrictions, school restrictions, mask usage, health monitoring and health resources) which combines data from both CoronaNet and OxCGRT (Kubinec et al., 2022). As this previous section shows, researchers should be cognizant that while statistical harmonization can be an effective form of data harmonization, the resulting indices or measures may sometimes need to be interpreted or used differently than the underlying raw data. For example, our policy intensity scores for mask wearing can be interpreted as the amount of time, resources and effort that a given policy-maker has devoted to the issue of mask restrictions in a given country compared to that in other countries. This is different from what the underlying raw data measures: whether a given mask restriction is in place or not. Researchers choosing to engage in statistical harmonization should thus provide a thorough accounting of the underlying concept that they seek to measure and a corresponding justification of why their statistical method provides a good operationalization of it.

Challenges to PHSM data harmonization

Having laid out a clear-eyed overview of the benefits and limits of harmonizing PHSM data, in the next section we detail the considerable challenges in harmonizing PHSM data. Indeed, because of the emergency situation created by the pandemic, on top of normal challenges to harmonizing data, we additionally had to deal with the fact that standards which researchers usually abide by before releasing their data were not observed. Normally, researchers generate datasets based on events that have already happened, not while they are happening. Indeed a given event needs to have run its course in order for researchers to both i) conceptualize the event being captured into a structured and logically organized taxonomy ii) estimate the amount of work needed in order to build a dataset based on this taxonomy. Moreover, because dirty data can significantly affect subsequent research findings, researchers often err on the side of caution by spending substantial additional time rigorously cleaning and validating their data before release. Researchers also have personal incentives to delay the release of a dataset given that i) they generally wish to be the first to conduct analyses on data that they themselves have collected and ii) unclean datasets can significantly negatively affect professional reputations. Meanwhile, to promote replicability and transparency about the data generating process, copies of original sources and coding decisions are often extensively documented so that other researchers may better understand how the data was generated. Due to the pandemic, however, PHSM data exceptionally were:

- Collected based on taxonomies that were developed inferentially from research group to research group while the pandemic was still ongoing.
- Released without extensive cleaning.
- Inconsistently preserved with regards to data for original raw sources.
- Absent regular updates of taxonomies.

There were a number of research-based reasons to prioritize speed over rigor. Not only did launching data collection during rather than after the pandemic help jump start early research on the pandemic, in many cases it was critical to document these policies in as close to real time as possible because primary sources of information about the pandemic can and have disappeared from the Internet over time. Though many COVID-19 trackers surely would have continued to improve their data quality, unfortunately many have had to stop their efforts because of lack of funding support. Our efforts to harmonize this external data into the CoronaNet dataset thus not only ensures that their substantial contributions can live on, but are also improved insofar as any errors in the data or discrepancies between datasets are resolved before being harmonized. This job is made more difficult however, because many trackers did not have rigorous guidelines for preserving raw sources. In what follows, we expand upon how each of these additional challenges have affected our data harmonization efforts and methodology.

The challenge of harmonizing different taxonomies

Different conceptualizations of what ultimately 'counts' as PHSM data lies at the root of different taxonomic approaches to collecting such data. While one benefit of independently developing taxonomies is that it encourages greater flexibility and adaptability in conceptualizing the drivers and effects pandemic while simultaneously validating common themes that independently appear across taxonomies, it also makes reconciling the differences among taxonomies more challenging. A particular challenge with our data harmonization efforts is that the CoronaNet taxonomy on the whole captures more dimensions of policies than other datasets do. While this means that our data harmonization efforts will yield much more fine-grained information, mapping from a simpler taxonomy into a more complex taxonomy is also a much more challenging task than vice-versa. In what follows, we discuss what challenges we faced when mapping taxonomies for COVID-19 policy types in particular as well as for other important dimensions of COVID-19 policies. There are at least four broad issues to consider when mapping the substance of different COVID-19 policies: (i) when taxonomies use the same or similar language to describe a policy but rely on different conceptualizations to code these policies (ii) when taxonomies have the same or similar conceptual understandings of a given event but use different taxonomic structures to capture it (iii) when taxonomies have similar but ultimately different conceptual understandings of a given event (iv) when taxonomies capture and conceptualize different events. We elaborate with examples for each of these issues in what follows:

An example of why it is important to be sensitive to semantics can be seen with regards to the term 'restrictions on internal movement.' While all datasets that use this terminology understand this to entail policies that restrict movement, some have different understandings of the phrase 'internal.' For instance, because the OxCGRT dataset generally codes policies from the perspective of the country[419], their 'C7 Restrictions on internal movement' indicator captures any restriction of movement within a country. Meanwhile, because CoronaNet codes policies from the perspective of the initiating government, its 'Internal Border Restrictions' policy type captures policies that restrict movement within the jurisdiction of a given initiating government while policies that

[419] This is true for countries outside of those that the OxCGRT dataset also documents subnational data for: the United States, Canada and China. Note that it also collects subnational data for Brazil but in this case, it appears that their subnational Brazilian data is also coded at the level of the country.

restrict movement outside a given jurisdiction are coded as ’External Border Restrictions’. As such, if the state of California restricts its citizens from leaving the country, this would be captured in OxCGRT’s ‘C7 Restrictions on internal movement’ indicator but would be coded as an ‘External Border Restriction’, not an ‘Internal Border Restriction’ using the CoronaNet taxonomy. Parsing out these differences can only be automated to a limited extent, especially if the given taxonomy being mapped simply does not make the same distinctions.

Meanwhile an example of how different datasets implemented different taxonomic structures to capture a similar conceptual understanding of a policy is how they captured policies related to the elderly. Different trackers took a variety of approaches to capturing such policies. OxCGRT organized its taxonomy by creating an ordinal variable, “H8 Protection of elderly people” index[420], which focuses on capturing policies specifically targeted toward the elderly on an ordinal scale.[421] In contrast, the CoronaNet and COVIDAMP taxonomies documents policies toward the elderly not in its policy type variable but in a separate variable[422] which records the demographic targets of a given policy. Both datasets record whether a policy is targeted toward ‘People in nursing homes/long term care facilities’. CoronaNet additionally makes it possible to document whether a policy is targeted toward ‘People of a certain age’ (where the ages are captured separately in a text entry) or ‘People with certain health conditions’ (where the health conditions are captured separately in a text entry) while COVIDAMP additionally makes it possible to document whether a policy is targeted toward ‘Older adults/individuals with under- lying medical conditions’. When mapping different taxonomies, these differences in taxonomic structure must additionally be taken into account.

Furthermore, taxonomies may capture similar, yet conceptually still quite distinct events which makes one to one matching between datasets difficult, if not impossible. For instance, the CIHI taxonomy’s policy type of ‘Travel-restrictions’ does not make any

[420] Note this index records“policies for protecting elderly people (as defined locally) in Long Term Care Facilities and/or the community and home setting”

[421] It takes on a value of 0 if no measures are in place, 1 if ’Recommended isolation, hygiene, and visitor restriction measures in LTCFs and/or elderly people to stay at home’, 2 for ’Narrow restrictions for isolation, hygiene in LTCFs, some limitations on external visitors and/or restrictions protecting elderly people at home’ and 3 for ’Extensive restrictions for isolation and hygiene in LTCFs, all non- essential external visitors prohibited, and/or all elderly people required to stay at home and not leave the home with minimal exceptions, and receive no external visitors’.

[422] In CoronaNet, this is the ‘target who gen’ variable while in COVIDAMP it is the ‘policy subtarget’ variable

distinctions between restrictions made within or outside of a given government's borders. Meanwhile, to revisit the example of policies related to the elderly, John Hopkins and the WHO PHSM taxonomy capture conceptually similar but still quite distinct categories that cannot be directly mapped onto policies related to the elderly. By developing a 'nursing homes' category, John Hopkin's taxonomy targets not the elderly per se, but the institutional settings in which they are likely to be the most vulnerable. The WHO PHSM dataset generalizes this idea in its policy category of 'Measures taken to reduce spread of COVID-19 in settings where populations reside in groups or are restrained or limited in movement or autonomy (e.g., some longer-term health care settings, seniors' residences, shelters, prisons). May include limiting visitors or outside excursions, cohorting of infected persons or green zones." This taxonomy implicitly suggests that it may be prudent to investigate not only the effects of policies on the elderly but for all those with limited mobility at the expense of easily extractable information on the elderly in particular. These cases are perhaps the most difficult to resolve as it is impossible to directly map distinctions that one taxonomy makes into other taxonomies where no such distinctions are made.

Finally, while all datasets generically sought to capture policies governments made in response to COVID-19, different datasets focused on different policy areas. For instance, virtually all external datasets have separate policy categories to capture economic or financial policies (e.g. government support of small businesses) while such policies are not systematically captured in the CoronaNet taxonomy. In these cases, such policies are thus simply not mappable.

The fact that different projects undertook such a variety of approaches in capturing such policies also underscores the idea that there is no one correct taxonomy for capturing such policies; each has its own pros and cons. For instance, aggregating all policies towards the elderly in one indicator as OxCGRT does facilitates research on how the pandemic has affected the elderly but makes it difficult to easily compare the effect of the pandemic on other vulnerable populations for example. Meanwhile though the CoronaNet and COVIDAMP approach allows more flexibility in what kind of policies toward the elderly can be captured, it also lacks the cohesiveness that having all such policies clearly labeled as being related to the elderly that OxCGRT has. With regards to data harmonization meanwhile, the sheer variety of approaches, does substantially increase the challenge of transforming this data to adhere to one taxonomy.

Indeed, despite a strong partnership with CCCSL, we decided not to harmonize data from the CCCSL dataset because of these taxonomic challenges. We found CCCSL's structure and semantics were too different from CoronaNet's, such that we estimated we would ultimately only be able to use less than half of CCCSL's observations. To illustrate by example, an observation with the CCCSL id of 4547 notes in its description that "Ski holiday returns should take special care." Such an observation would not be considered a policy in the CoronaNet taxonomy because it does not provide specific enough information about what is meant by special care and the link for the original source of this observation is dead. While many observations do contain high quality information and descriptions, a substantial number do not contain any or only very minimal descriptive information. Combined with the difficulty in accessing original sources, we decided the relative effort required to consistently map the remaining observations into the CoronaNet taxonomy would be too high, especially considering that we are also harmonizing similar data from 7 other datasets.

So far we have only discussed the challenge of mapping taxonomies specific to policy types. However all datasets also capture additional important contextual information for understanding, analyzing and comparing government COVID-19 policies. In Table 19 below, we show the variety of approaches different datasets undertook to capture some of the most important of these dimensions including: the structure of the data (Structure), whether a given dataset captures end dates for a policy (End Dates?), has a protocol for capturing and linking updates of a policy to its original policy (Updates?), has a standardized method for documenting policies occurring at the ISO-2 (provincial) level (Location standardized at ISO-2 level), captures information about the geographic target of a policy (Geog. Target?) or captures information about the demographic target of a given policy (Demog. Target).

Table 19: Comparison of dimensions captured across different datasets

Dataset	Structure	End Dates?	Updates?	Location standardized at ISO-2 level?	Geog. Target?	Demog. Target?
CoronaNet	Event data	Yes	Yes	Yes	Yes	Yes
ACAPS	Event data	No	No	No	No	No
CIHI	Event data	Extractable through description text field	No	Yes	Yes	No
COVIDAMP	Event data	Yes	Yes	Yes	Yes	Yes
JHU	Event data	No	Yes	Yes	No	No
OxCGRT	Panel data	Yes	NA	Yes	No	No
WHO (CDC and WHO EURO)	Event data	Yes	Yes	No	No	No

The dimensions highlighted in the table were chosen to underscore difficulties in harmonizing even the most basic information about a given policy. As the table shows, while most external datasets are formatted in event dataset format which facilitates comparability across these datasets, OxCGRT data is available only in panel format, which presents unique challenges. With regards to the data structure, in order to facilitate data harmonization, the Oxford data must be reformatted to an event format (see the Supplementary Information to access the taxonomy map). However, the panel structure also has knock-on effects on how other policy dimensions are captured, which we discuss more later in this section.

Datasets also differ with regards to how they capture the timing of a policy. Although knowing the duration of a policy is crucial for understanding its subsequent impact, if any, both ACAPS and the HIT-COVID dataset did not systematically capture information about policy end dates. Though CIHI did make this data available through its textual description, it was not available as a separate field and had to be separately extracted. When harmonizing data from these datasets then, additional work must be done to provide information on end dates.

Relatedly, datasets have also taken inconsistent approaches to capturing policy updates, if they do at all. Taxonomies that can capture such updates are arguably better equipped to capture the messiness and uncertainty of the COVID-19 policy making process (e.g.

policy makers for example often lengthen or shorten the timing of a given policy in response to changing COVID-19 conditions). ACAPS and CIHI however do not separately capture and link policy updates to the original policy. Meanwhile, OxCGRT's inability to capture information on how policies may be linked is largely due to its panel dataset structure. In contrast, though both the CoronaNet and COVIDAMP taxonomy have rules for linking policies together, these differ across datasets.[423]

While all datasets use standardized taxonomy for documenting country level information about where a policy originated from, some datasets did not use a standardized taxonomy for capturing this information at the subnational ISO-2 level, in particular ACAPS and the WHO. Even when the taxonomy was standardized within a given dataset, different datasets used slightly different taxonomies at both the country and subnational levels which also necessitates further reconciliation and standardization before the data can be harmonized.

Of all the datasets processed for data harmonization, only the CoronaNet and COVIDAMP datasets capture information on both the particular geographic (e.g. country, province, city) and demographic targets (e.g. general population, asylum seekers) of a given policy. To the extent that other datasets also capture this information, it is either too broad or not standardized enough. For instance, though the various indicators in the OxCGRT data capture whether a policy overall applies to the general population or a targeted population, no further information about the specific targets is provided. Meanwhile, the WHO PHSM dataset does have a separate field which documents demographic targets but these entries are not standardized and with more than 5900

[423] CoronaNet links policies together if there are any changes to the original policies time duration, quantitative amount (In particular, if the i) length of quarantine has been changed ii) the amount of health resources has been changed (e.g. 100 vs 200 hospital beds iii) the number of people restricted from gathering has been changed iv) the monetary amount or number of vaccines for purchase, distribution or production has been changed or v) the time of curfew has been changed), direction of the policy (whether a policy is inbound, outbound or both), the travel mechanism (e.g. whether a policy bans flights, ships or buses), the compliance (That is, whether a policy is recommended or mandatory) or the enforcer (The institutional enforcer of a given policy (e.g. military, Department of Justice). Information on which observations are linked can be found in the 'policy id' variable while information as to how they are linked can be found in the 'entry type', 'update type', 'update level' and 'update level var' columns. COVIDAMP meanwhile, has separate fields to document i) whether an original policy was extended over time. This information is captured in the 'Prior row ID linked to this entry' column or ii) whether a given policy implemented at the local level has a relationship with a higher level of government. This information is captured in the fields: 'Parent policy number', 'Parent policy relationship' and 'Additional notes for parent/child relationship'

unique entries, many of which have typos (see Appendix 7 for more). It is thus impossible to use them for analysis without substantial additional cleaning and harmonization.

All in all, we illustrate how harmonizing different datasets can be quite the challenging exercise when considering only two taxonomies, much less 8. This is true not only with regards to taxonomy specific to the substance of COVID-19 policies themselves but also to for additional policy dimensions like policy timing and targets.

The challenge of harmonizing dirty data

Dirty data refers to data that is miscoded according to a given taxonomy. In our investigation of the cleanliness of different datasets, we distinguish between policies that are (i) inaccurately coded relative to a given taxonomy or (ii) incomplete or missing. Harmonizing dirty data would be challenging even if taxonomies across datasets were the same; these problems are only compounded when the taxonomies are different. Unfortunately, because of the emergency situation of the pandemic, all datasets (both external and CoronaNet) suffer from problems with dirty data.

For instance, although within the ACAPS taxonomy, all policies related to a curfew should theoretically be coded as ‘Movement Restrictions’ and ‘Curfew’ in their ‘category’ and ‘measure’ fields respectively, text analysis of the descriptions accompanying these observations suggests that curfew policies were mistakenly coded in at least 8 other policy categories[424]. Data can also be dirty for other important policy dimensions, e.g. the start dates of a given policy. Many governments simply maintain websites where they note the most current policies without detailed information as to when the policy started or will end[425] and in some cases, coders will simply note the date that they accessed the policy as the start date as opposed to the true start date. That these types of issues were found across all datasets is no surprise given the unusual circumstances that such data

[424] Policies relevant to curfews which should have been coded as ’Movement Restrictions - Curfew’ were also found as being coded under ’Lockdown – Partial Lockdown’, ‘State of Emergency’, ‘Movement Restrictions - Border closures’, ‘Movement restrictions = Surveillance and monitoring’, ‘Movement Restrictions - Domestic travel restrictions’, ‘Public health measures - Isolation and quarantine policies’, ’Governance and socio-economic measures - Emergency administrative structures activated or established’; ‘Governance and socio-economic measures - Military deployment’

[425] See this archived Website for an example from the Latvian government: Government of Latvia (2021). *Covid-19 control measures*. Retrieved April 27, 2023, from: https://web.archive.org/web/20210621102402/https://covid19.gov.lv/en/support-society/how-behave-safely/covid-19-control-measures

are collected and released. Nevertheless, they can pose immense challenges for data harmonizing as blindly automating the harmonization of such data risks compounding the original errors in the data.

While it is difficult to quantify the relative cleanliness of different datasets (and thus, how much of an issue it poses to data harmonization), we provide some sense of the relative data quality of different datasets with regards to the quality of their textual descriptions in Table 3 below. Good textual descriptions of a given policy are crucial for helping users understand what policies a given dataset is actually documenting and organizing. We first try to get a sense of how informative these descriptions are by counting the average number of characters each description has per dataset (Description Length (Average)), how many descriptions have less than 50 characters (Descriptions with less than 50 characters (Total))[426] and how many observations have no descriptions at all (Missing Descriptions (Total)). The table shows that textual descriptions from the ACAPS dataset have on average the least number of characters compared to other datasets, with more than two thousand having descriptions of less than 50 characters and more than 100 having no description at all. While OxCGRT has the third highest average description length, it also has the most number of descriptions with less than 50 characters. Meanwhile John Hopkins has the most number of policies without any description, at more than 1600.

With regards to the content of the descriptions, only the CoronaNet and CIHI databases appear to standardize what should be included in this textual description (see 'Description Standardized?' column in Table3).[427] For each dataset, we randomly selected one description that accorded to the average description length for that dataset

[426] Generally, descriptions with less than 50 characters contain only limited information about a given policy. Examples of descriptions with less than 50 characters include: "Albania banned all flights to and from the UK." (CoronaNet); "Blida extended until at least 19.april 2020" (ACAPS), "Lockdown extended. Lockdown extended" (CDC ITF), "The state of emergency in WA has been extended." (COVIDAMP), "Delay of international flights have been extended" (EURO), "Extends school closures until March 16" (JHU), "orders extended until April 30" (OxCGRT).

[427] Coders for CoronaNet are instructed to include the following information in their textual descriptions: (i) the name of the country from which a policy originates (ii) the date the policy is supposed to take effect (iii) information about the 'type' of policy (iii) if applicable, the country or region that a policy is targeted toward (iv) if applicable, the type of people or resources a policy is targeted towards (vi) if applicable, when a policy is slated to end. The CIHI descriptions take a regularized format in which the government initiating the policy is clearly specified, the policy type is described and the end date of a given policy is recorded if applicable. With regards to the other datasets, we were unable to find any documentation that suggested that text descriptions should follow a standardized format nor were we able to find evidence of one by reading through a sample of the text descriptions themselves.

to illustrate what kind of information could be gleaned from them in the 'Example of Average Description' column in Table 21. These descriptions suggest that while the CoronaNet and CIHI descriptions include information about the date the policy is enacted and the policy initiator, this information is not always reliably made available for descriptions from other datasets. While this information is generally also subsequently captured in separate variable fields, having detailed textual descriptions are important for helping to adjudicate whether the subsequent coding of these separate policy dimensions is accurate or not.

While it would be useful to have a similar quality assessment for other important variables of each dataset, as far as we know, only the CoronaNet dataset provides an empirical assessment of the quality of its data. CoronaNet implements a multiple validation scheme in which it samples 10% of its raw sources for three independent coders to separately code. If 2 out of 3 of the coders document a policy in the same way, then it is still considered valid. Though data validation is still ongoing, preliminary data suggests that there is high inter-coder reliability, around 80% (see Table 20), for how its policy type variable is coded, which is generally accepted to be indicative of high inter coder reliability (O'Connor and Joffe, 2020; Miles and Huberman, 1994; Landis and Koch, 1977) An exception to the generally high validity of the policy type variable is the relatively poor coder interreliability for the 'Health Testing' and 'Health Monitoring' categories. This is likely related to changes in the CoronaNet taxonomy, which while important to make to better adapt to the changing policy-making environment, also increases the dirtiness of the data. A full accounting of taxonomy changes can be found here[428]. Other external datasets likely also have faced similar issues which subsequently affect their data quality although we were unable to locate public documentation of these changes.[429] The closest similar information that other datasets provide on data quality are with regards to their cleaning procedures. More information on the steps other datasets took to ensure data quality can be found in their respective documentation.[430] Given that a number of

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[428] CoronaNet Data Availability Sheet: https://docs.google.com/spreadsheets/d/1FJqssZZqjQcA-jZhRnC_Av9rlii3abG8r7utBeuzTEQ/edit#gid=1284601862

[429] Note, if there were any taxonomy changes for OxCGRT or JHU HIT-COVID, they are likely recoverable from their git repository histories (available respectively here: https://github.com/OxCGRT/covid-policy-tracker/tree/master/documentation and here: https://github.com/HopkinsIDD/hit- covid/tree/master/documentation) but we could find no explicit documentation of any such changes.

[430] See the following for their respective documentation: CoronaNet (Cheng et al., 2020); ACAPS (ACAPS,2020); OxCGRT (Hale et al.,2021); JHU (Zheng et al.,2020); and the WHO PHSM (WHO,2020)). Note, no documentation on data quality procedures were found for CIHI.

external trackers had to stop their data collection efforts as well as the relatively high level of data quality of the CoronaNet data for the dimensions that we have information on, we can cautiously infer that harmonizing external data to the CoronaNet dataset will help improve the quality of the subsequently harmonized data.

Table 20: Inter-Coder Reliability Measures for On-Going Validation (round 1)

Policy	(n)	Percentage Agreement	Cohen's Kappa (k)
Curfew	19	100	1
Hygiene	2	100	1
Declaration of National Emergency	54	96.3	0.96
Restrictions of Mass Gatherings	92	94.6	0.94
External Border Restrictions	112	94.6	0.94
Closure and Regulation of Schools	48	93.8	0.93
Restriction and Regulation of Businesses	63	90.5	0.9
Lockdown	28	85.7	0.85
Restriction and Regulation of Government Services	63	84.1	0.83
Health Resources	91	83.5	0.82
Quarantine	47	83	0.82
Internal Border Restrictions	22	81.8	0.81
Social Distancing	37	73	0.71
New Task Force, Bureau or Administrative Configuration	22	72.7	0.71
Public Awareness Measures	51	68.6	0.67
Health Testing	17	52.9	0.5
Health Monitoring	13	23.1	0.18
Summary Inter-coder Reliability Scores			
Percentage Agreement	81.07		
Cohen's Kappa	0.8		
Krippendorff's alpha	0.82		

Data completeness is also an important factor in a dataset's overall quality. The more complete a dataset is, the more accurate subsequent analyses based on this data can be. All datasets harmonized here are by definition incomplete given that they made their datasets publicly available while their data collection efforts are ongoing. This issue is compounded by the fact that many datasets have had to stop or substantially slow their data collection efforts, particularly ACAPS, JHU, CDC ITF and COVIDAMP. Because policies often continue past the lifetime of the external group collecting the data itself, issues of data incompleteness only grow over time for datasets that stop collecting data. While a full assessment of the completeness of each dataset is not possible (one would need a perfectly complete dataset in order to judge the completeness of other datasets) in Table 22 below, we provide some sense of each datasets relative completeness by assessing how many policies lack end dates, the average start and end dates of policies and the last submission date of a given policy.

Table 21: Assessment of Textual Descriptions

	Description Length (Average)	Descriptions with less than 50 characters (Total)	Missing Descriptions (Total)	Description Standardized?	Example of Average Description
CoronaNet	348	203	0	Yes	On 2 April 2020, the Australian Capital Territory government announced the construction of a temporary COVID-19 Emergency Department through a partnership with local healthcare provider Aspen Medical. The package also provides funding to our hospitals to purchase more equipment and more personal protective equipment for our nurses and doctors
ACAPS	172	2147	118	No	IKR extended until at least 23.4.2020 All movements in the Kurdistan Region are banned between the hours of midnight and 0600, except for security officials and ambulances.
CDC_ITF	537	126	47	No	Curfew extented. Guatemala s President on 7 June announced he extended curfew and measures imposed to contain the coronavirus pandemic for one more week. The partial curfew, in force from 22 March, will continue between 18H00 and 05H00 starting 8 June, and transit between provinces remains prohibited.Since March, measures such as the suspension of public transport and classes have been in force in Guatemala. Social, religious, sporting and cultural activities are also prohibited. Air, sea and land borders are closed to foreigners.
CIHI	254	0	0	Yes	Who: Government of Yukon What: Updated school health and safety guidelines for K-12 to reduce the requirement for 2-metre distancing between students in the classroom and to make masks mandatory in common areas outside of the classroom. Effective until
COVIDAMP	227	950	0	No	Extension: Indoor events with over 500 spectators/ attendees cannot exceed 50% of the venue's room's capacity. Indoor events attended by non-students must adhere to social distancing requirements and face covering requirements
EURO	297	509	662	No	Extension through 1 March 2021 Taking into account the analysis of the current situation and the epidemiological situation in the UK, Italy, Germany, Denmark, Austria, Australia, the Netherlands and South Africa, extension of suspension of international flights entry, exit and transit flights .
JHU	230	635	1622	No	In case the person has any history in the last 14 days and the person is symptomatic as per the case definition of COVID 19, the person must be isolated in a hospital as per protocol and will be tested for COVID19 as per protocol.
OxCGRT	329	4265	0	No	The two week self-quarantine has been lifted for those traveling to New Hampshire from surrounding New England States (Maine, Vermont, Massachusetts, Connecticut, Rhode Island). Those traveling to New Hampshire from non-New England states for an extended period of time are still asked to self-quarantine for a two-week period.

Based on this table, following ACAPS and JHU which do not collect information on any end dates at all, CIHI has the highest percentage of policies missing while CoronaNet has the most number of missing information on end dates. Meanwhile though the average start date and end dates for all datasets center around the last half of 2020, the earliest average start dates are the ACAPS, JHU and CoronaNet datasets, with Oxford, CIHI and the EURO datasets being relatively farther along. Meanwhile the CDC ITF, CoronaNet and EURO datasets have the earliest average end dates while OxCGRT, CIHI and COVIDAMP have the latest average end dates. The last submission date (relative to September 2021) underscores that ACAPS, JHU and the CDC ITF, have stopped data collection while COVIDAMP has significantly slowed its efforts. At the time of writing, only the OxCGRT and CoronaNet datasets appear to be actively collecting PHSM data. Overall then, this table suggests that data harmonization may substantially raise the data completeness of the CoronaNet dataset.

Table 22: Assessment of Data Completeness

dataset	Missing End Dates (Total)	Missing End Dates (%)	Start Date (Average)	End Date (Average)	Last Submission Date
CoronaNet	31672	35.3	2020-08-16	2020-11-03	2023-02-08
ACAPS	18699	100.00	2020-06-13	NA	2020-12-08
CDC_ITF	1384	19.50	2020-08-16	2020-09-06	2021-12-05†
CIHI	3483	82.73	2020-10-06	2020-11-15	2021-08-12‡
COVIDAMP	4970	18.77	2020-08-28	2020-10-09	2021-09-21‡
EURO	2137	15.03	2020-09-10	2020-09-24	2021-06-21*
JHU	8142	100.00	2020-04-15	NA	2020-12-15
OXCGRT	2558	3.59	2020-12-27	2021-01-07	2021-09-21‡

† There is likely some issues with this variable for the CDC_ITF as we retrieved the WHO PHSM data on 2021-09-10 so the last submission date could not have been after this date.

*There was only one submission date recorded for the EURO dataset (2020-04-01), however according to the WHO PHSM website, the last update was 2021-06-21

‡These datasets do not separately record this information. Instead the date the dataset was retrieved or the self-reported last submission date for the entire dataset was used.

As outlined above, all datasets considered in this paper suffer in various degrees from problems of miscoded or missing or incomplete data. However, though dirty data substantially raises the complexity and challenge of accurate data harmonization, the data harmonization process can also improve the quality of such data, which we will discuss in more detail later on.

The challenge harmonizing data with missing information on original sources

Given both the challenges in harmonizing (i) data coded from multiple different taxonomies as well as (ii) dirty data, it is essential to have access to the original raw source of data for a given policy to harmonize the data accurately. Reference to the original source used to code the policy is necessary for instance, to resolve any confusion or disagreement about a given coding decision.

In Table 23, we illustrate differences among each dataset in terms of how they make source data available (Source Data) and how many observations do not have any source data attached to it (Missing Links (Total)). The table also shows, relative to external data that has already been assessed for harmonization, the percentage of observations that have been found to be based on sources with dead links for which corroborating information was unable to be found after a good faith effort (Unrecoverable links (Percent of total integrated)) as well as the percentage of observations which have been found to be based on dead links but for which corroborating information was subsequently recovered (Recovered Links (Percent of total integrated)).

We find that while all datasets provide reference to the URL links used to code a given policy, only CoronaNet, COVIDAMP and HIT-COVID also provide links to static PDFs of raw sources which ensure that this information will continue to be available in the future.[431] With regards to the extent to which a given observation is missing a URL or PDF link to its raw source, the WHO EURO and OxCGRT datasets have the most number of missing links while this is not an issue for the CoronaNet and CIHI datasets. Meanwhile, based on the amount of external data that has been harmonized thus far, around 10.2% of the external data is based on links that were dead which were not possible to recover corroborating information for. This was a particular problem for the WHO EURO and WHO CDC ITF datasets though not an issue for the CIHI or COVIDAMP datasets. Meanwhile around 4.7% of the external dataset assessed for harmonization to date, were based on dead links but for which it was possible to recover corroborating information. Because these data points are recoded using the CoronaNet taxonomy, PDFs of these recovered links were also uploaded, ensuring that they will continue to be preserved for future records. Observations coded by the WHO EURO

[431] Note, however, COVIDAMP has around 150+ observations which only have a URL link and no PDF link attached to it while early observations entered into the JHU HIT-COVID dataset also only have URL links with no accompanying PDF links.

database were found to be particularly recoverable. Note that we do not make an assessment for unrecoverable or recovered links for CoronaNet because the CoronaNet methodology ensures that PDFs are always saved (the data is collected via a survey and uploading a PDF is mandatory for a policy response to be considered valid). All told, at least 17% of the external data (3% of the external data have no links, 10.2% of the data are based on links with unrecoverable information and 4.7% of the data are based on links with recoverable information) are based on data with some issues with regards to their original sources, which only increases the challenge of smoothly harmonizing information from different datasets.

Table 23: Assessment of Raw Sources

Dataset	Source Data	Missing Links (Total)	Unrecoverable links (Percent of total integrated)	Recovered Links (Percent of total integrated)
CoronaNet	URL and PDF links	0	NA	NA
ACAPS	URL links	26	0.012	0.05
CDC_ITF	URL links	24	0.08	0.06
CIHI	URL links	0	0.00	0.01
COVIDAMP	URL and PDF links	8	0.02	0.05
EURO	URL links	3011	0.20	0.07
JHU	URL links for early data; URL links and PDF links for later data	14	0.05	0.05
OxCGRT	URL links	1385	0.07	0.03

COVID-19 PHSM Harmonization Methodology

The challenges posed by harmonizing multiple complex taxonomies of dirty data based on inconsistently preserved original sources led us to the conclusion that ultimately, only manual harmonization would allow us to harmonize data from different PHSM trackers in a way that would ensure high data quality and validity. Given the sheer number of policies in the external dataset however, to the extent possible, we sought to support these manual harmonization efforts with automated tools, specifically with automated taxonomy mappings and initial data deduplication efforts. In what follows, we outline in greater detail each of these different steps.

In this section, we provide greater detail as to the methodology we employed to semi-manually harmonize data from 7 PHSM datasets into the CoronaNet taxonomy for policies implemented by governments before September 10, 2021. Our methodology can be summarized as follows:

1. Step 1: Create taxonomy maps for each external dataset and CoronaNet, which we make publicly available in the Supplementary Information. Based on these maps, we then mapped data available for each external dataset, into the CoronaNet taxonomy
2. Step 2: Perform basic cleaning and subsetting of external data to only observations clearly relevant existing CoronaNet data collection efforts.
3. Step 3: Remove a portion of duplicated policies using customized automated algorithms with respect to:
   a. Duplication within each respective external dataset
   b. Duplication across the different external datasets
4. Step 4: Pilot our data harmonization efforts for a select few countries (over the summer of 2021)
5. Step 5: Release the resulting curated external data to our community of volunteer research assistants to
   a. Manually assess the overlap between PHSM data found in the CoronaNet dataset with that found in the ACAPS, COVIDAMP, CIHI, John Hopkins HIT-COVID, OxCGRT, the WHO EURO and CDC respectively and;
   b. Manually recode data found in the external datasets that were not already in the CoronaNet dataset into the CoronaNet taxonomy.

Our data harmonization methodology thus combines both automated and manual processes in create a more complete dataset of PHSM policies in the CoronaNet

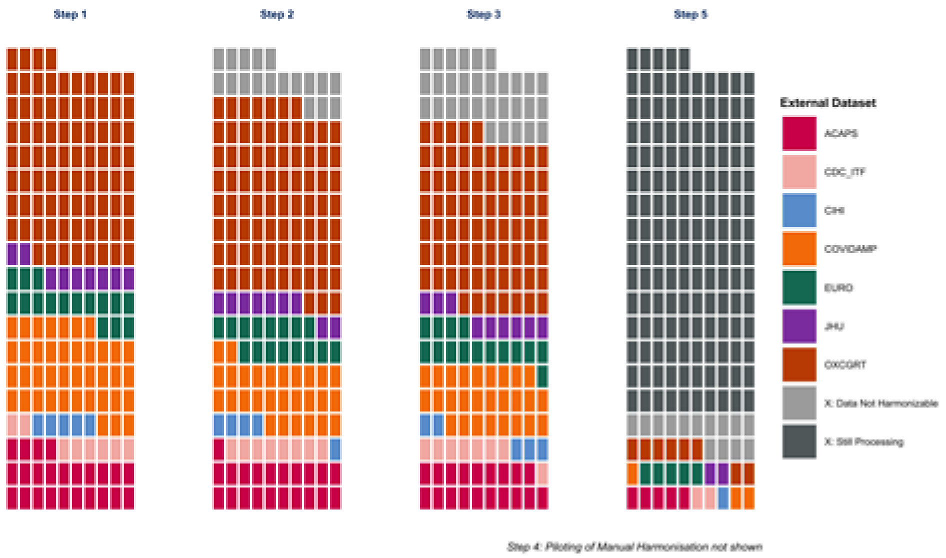

*Figure 56: **PHSM Data Harmonisation Process***

taxonomy relative to what had been originally researched by the CoronaNet Research Project alone. With this in mind, in Table 24, for each of the external datasets, we show the total amount of raw external data (Step 1), the data after observations were removed to maintain consistency with CoronaNet data collection efforts (Step 2) and the data after duplicated observations identified through automated algorithms were removed (Step 3). Manual harmonization of data (Step 5) is still ongoing but in Table 24, we provide further information on i) how much of the ex- ternal data has been assessed for overlap, ii) how much of the external dataset has been assessed for harmonization iii) how much external data has been recoded into the CoronaNet taxonomy. A note to the reader: unless explicitly noted, any subsequent analysis or description of the external data refers to data recorded by September 10, 2021. For a visualization of this overall process, see Figure 56. In what follows, we provide greater detail for how we implemented each of these steps.

Table 24: State of External Data at different steps of the data harmonization process

Dataset	Step 1 Raw Data Data (#)	Step 2 Consistency Subset (#)	Step 3 Automated Deduplication (#)	% Overlap Assessment Completed	Step 5 % Integration Assessment Completed	%Recoded into CoronaNet
All Data	180842	162991	150052	44.73	16.59	9.66
ACAPS	23926	20842	18699	63.62	22.73	13.41
CDC ITF	7985	7405	7096	58.08	18.42	13.27
CIHI	4417	4235	4210	13.49	1.76	1.70
COVIDAMP	39332	27703	26473	23.68	8.25	4.95
EURO	15258	15071	14220	73.45	40.94	23.22
JHU	8917	8606	8142	40.47	8.83	5.47
OxCGRT	81007	79129	71212	40.33	15.20	5.63

Which datasets to harmonize?

Before describing our methodology for harmonizing data, we first explain how we chose which datasets to harmonize. During this process, we had to weigh the potential benefits of data harmonization among a number of different dimensions, including the:

- Geographical coverage of the dataset
- Temporal coverage of the dataset
- Volume of data collected by the external dataset
- Relative similarity of policy taxonomies to the CoronaNet taxonomy

- Relative capacity of external dataset partners for collaboration

As can be seen in Table 11 in Appendix A in Cheng et al (2023), we identified more than 20 datasets for consideration for harmonization. We ultimately chose datasets to harmonize that (i) aspired to world-wide geographic coverage with (ii) at least ten thousand observations in each dataset and were (iii) based on original coding of sources (as opposed to recoding of existing sources). Datasets that fit this criterion were ACAPS, COVIDAMP, HIT-COVID, OxCGRT, and CCCSL (though as explained further below, though we did initiate an effort to harmonize CCCSL data, we ultimately did not do so). One clear exception to this criteria was the inclusion of the CIHI dataset, which focuses on Canadian policies and had fewer than ten thousand policies. We decided to include the CIHI dataset for consideration because i) it already formed a substantial part of subnational data collection for other data collection efforts, including the OxCGRT dataset and ii) because of substantial cooperation and access to researchers in expertise in both the CoronaNet and CIHI taxonomies. Similarly, though the WHO Euro dataset also aims for a regional, rather than a world-wide focus, given the large number of policies in this dataset as well partial funding support that the CoronaNet Research Project receives from the EU Commission to support EU data collection, we decided to include it for harmonization. Because the WHO CDC dataset follows the same taxonomy as the WHO EURO dataset and also contains a substantial number of policies (close to 8,000), it was also included for harmonization.

Having decided the set of data to harmonize, we then took the following steps to do so:

Step 1. Making Automated Taxonomy Maps

Given the variety and complexity of approaches that different groups have taken to document PHSM policies, asking research assistants to not only become experts in one taxonomy but multiple taxonomies would have been unfeasible. Instead, we created maps between the CoronaNet taxonomy and other datasets so that all datasets could be understood in the CoronaNet taxonomy for a number of principal fields including:

- Policy timing
    - The start date of the policy
    - When available, the end date of policy
- Policy initiator
    - The country from which a policy is initiated from
    - When available, the ISO-2 level region from which a policy is initiated from

- Policy Type
    - Broad policy type
    - When possible, the policy subtype
- Sources/URLs
    - URL links
    - When available, links of original pdfs
- Textual description

When possible, other fields, such as the geographic and demographic targets, are also matched. As outlined above, because of conceptual and organizational differences across different taxonomies, one to one mappings were not always possible especially with regards to the substance of COVID-19 policies. In such cases, one to two or one to three mappings were suggested. For the COVIDAMP and WHO PHSM mappings (relevant for the WHO EURO and WHO CDC datasets), we also employed machine learning models to predict the most likely policy type an observations was likely to be in the CoronaNet taxonomy based on the textual description of the policy. Both because one to one mappings based on the taxonomies themselves were often not possible and because of issues with dirty data, in some cases, the mappings were often adjusted to so that they were based not only on the formal taxonomy but also on when certain keywords were used in the dataset. For example, though policies originally coded in the WHO taxonomy of 'Social and physical distancing measures (Category) - Domestic Travel (Sub-Category) - Closing internal land borders (Measure)' might reasonably map onto CoronaNet's 'Internal Border Restriction' policy type, when the word 'quarantine' appears in the text description of such policies, we reclassify them in the taxonomy map as a 'Quarantine' policy instead. As such, these taxonomy mappings are not always based strictly on how different policy types theoretically should map onto each other, but attempt to account for mistakes and miscodings in the external data to create the best mapping possible between the existing data and the CoronaNet datasets. In this first automated step, our aim was to ensure that most mappings were correctly mapped but did not take pains to make sure that every mapping was correctly mapped, because, as we explain later on, each observation was ultimately assessed and evaluated for harmonization by human coders who are better equipped to make these more fine-grained and nuanced judgements.

As part of this mapping exercise, in order to keep track of the original dataset that each observation came from, we also ensured that each record was associated with its own unique identifier (unique id). In some cases, the data had to be somewhat reformatted in such a way that also impacted how the unique id assigned by the original dataset was formatted though this was always done so in a way that makes it possible to trace back to the original dataset.[432] In the case of OxCGRT, no unique identifiers are provided in the original dataset and in this case we generate them using a combination of the policy indicator, date, country and where applicable, province.

Please see the Supplementary Information for more information about how to access the specific taxonomy mappings we created between CoronaNet and other datasets.

Step 2. Basic cleaning and subsetting of external data

With the help of the taxonomy maps, we were able to roughly transform the external datasets into the CoronaNet taxonomy. Before moving forward with manual data harmonization, we first implemented some basic cleaning and subsetting of the data. Because most datasets do not use a consistent reference for identifying policies originating from the ISO-2 provincial level, we created code to clean these text strings up as much as possible. Given the sheer number of observations that needed such cleaning, we could not ensure full standardization for these text strings. However, we took pains to ensure that the 430+ provinces for which CoronaNet is systematically seeking to collect subnational data for were consistently documented in the external data.[433]

Next we subset the external data to exclude regions that CoronaNet is currently not collecting data for. In particular, we excluded from our harmonization efforts observations from the COVIDAMP dataset documented at the county or tribal level in the United States as well as observations for Greenland, the United States Virgin Islands and Guam. In addition, we also subset the external dataset to exclude policy types that CoronaNet is currently not collecting data for, in particular economic or financial measures taken in response to the pandemic.

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[432] For example, in the JHU dataset border restrictions for people leaving or entering a country are coded in separate observations. However, in the CoronaNet dataset, if a policy for restricting both entry and exit to or from the same countr(ies) on the same date, they are coded as one observation. In this case, the JHU data is collapsed to fit into one observation and the unique identifier is also collapsed such that two or more of the original unique identifiers are collapsed into one when they are mapped to the CoronaNet taxonomy.

[433] Specifically, these are subnational provinces for the following countries: Brazil, China, Canada, France, Germany, India, Italy, Japan, Nigeria, Russia, Spain, Switzerland, and the United States.

Step 3. Automated Deduplication

After making taxonomy maps for each external dataset to the CoronaNet taxonomy and conducting some basic cleaning of the data, we also took steps to deduplicate the data using automatic methods as much as possible. Deduplication was assessed along three criteria: i) duplicates within each external dataset ii) duplicates across the external datasets and iii) duplicates between the CoronaNet and external datasets. We outline the steps we took to assess the level of duplication along each of these criteria and when possible, to remove duplicates accordingly. All in all, we took a conservative approach in our automated deduplication efforts insofar as we rather left many potential duplicates in the dataset rather than removed too many policies which may have not been duplicates.

Step 3a. Deduplication within External Datasets

Given the sheer amount of data collected and coordination needed to collect such data, it is not surprising that there is some duplication within datasets. Duplicates can occur for a number of reasons including (i) structural differences between taxonomies (ii) the lack of one to one matching between taxonomies (e.g. a policy that may be coded as several policies in one taxonomy may only be coded as one policy in the CoronaNet taxonomy) (iii) coder error.

We first needed to deal specifically with duplication that occurs as a result OxCGRT's method of collecting data to fit a panel data. In particular, OxCGRT coders are generally instructed to provide an assessment of whether a policy was in place or not for each given day that they are either recording the policy or for which they have evidence for a policy being in place or not. For instance, if a coder finds that the same policy has been in place over several weeks, the same textual description may be copied and pasted into the notes section for each day that the coder happened to review the status of policy-making for that indicator, even if the numerical indicator itself does not change. When initially extracting and reshaping the OxCGRT data into an event dataset format, each textual description is initially retained, even though it may not contain new information. To deal with this, we built a custom function to identify policies that repeated the exact same description, keeping the 'latest' instance of the policy description and removing earlier ones (see the OxCGRT-CoronaNet taxonomy map available through the Supplementary Information for more detail).

We also needed to implement a custom procedure to deal with a related practice of documenting 'no change' in a policy indicator which was unique to OxCGRT's methodology for documenting policies. Specifically, when an OxCGRT coder does not identify any change in a policy indicator, it is customary for the coder to note something to the effect of ‘No change’ in the textual description for that particular day. This information can be extremely valuable if one desires to know the status of a given indicator in the ‘present’ as it allows researchers to distinguish whether there was truly no change in government policy makers or whether there was simply no one actively documenting government policy making for a given region and indicator. As the present becomes the past however, this information becomes less useful. For instance, while the value of knowing that there was ‘no change’ in a given indicator ‘today’ is quite high, knowing that there was ‘no change’ for a given indicator in e.g. March 2020 is not very informative especially if there was subsequently a lot of policy making activity for that indicator. Given that we initially retained each textual description from the OxCGRT data when transforming it from a panel to event dataset format, our initial efforts created an OxCGRT event dataset format that was filled with observations that documented variations of the sentiment ‘No change.’ Because the CoronaNet taxonomy does not document when there are no policy changes, to the extent possible then, we sought to remove such observations from the OxCGRT dataset. The difficulty in doing so was compounded by the fact that (i) there appears to be no standard language that OxCGRT coders follow in communicating that a policy had no change (ii) not infrequently, a textual description will start by noting that there has been no change to a policy, but will then subsequently provide a long and detailed description of the policy. In these cases, it is unclear whether there actually was no change to a policy and the coder is simply noting what the policy was or if there was no change to the policy that could be captured by the OxCGRT taxonomy, but there were actually some changes made by the government and the coder is documenting them qualitatively in the text. To deal with the former issue, we looked through hundreds of OxCGRT policies to try to identify as many phrases that conveyed the sentiment ‘no change’ as possible. To deal with the latter issue, we did not remove observations over a certain character limit even when they noted that there was ‘no change’ in case there actually was a substantive change that could be captured in the CoronaNet taxonomy. These choices were consistent with our general conservative approach towards automated deduplication.

Following this specialized deduplication for the OxCGRT dataset, we then sought to identify duplicates within each dataset more generally. We experimented with identifying policies that had identical values for a variety of different policies and ultimately found the following set of variables as being able to accurately identify a large number of duplicates:

- 'description': records the textual description used to describe each observation[434]
- 'country': records the country that a policy originates from, where the list of countries are standardized,
- 'province': records the province that a policy originates from, where the list of policies are semi-standardized (see Section 4.3.2 for more info),
- 'link': records the URL link used as the raw source of information for a given policy

Theoretically, we believed that the likelihood of identifying true duplicates with the above variable fields is quite high given that all descriptions are all written in free form and that URL links can act as fairly robust unique identifiers. With this set of variables, we identified 6955 policies that were duplicated.[435] To check this assumption, we sampled 100 groups of policies that were found to be duplicates, (which was equivalent to 393 total observations), and through manual investigation, found that 99 of these groupings were indeed duplicates, for an accuracy of 99%. We further manually checked groups of policies that were identified as having particularly high numbers of duplicates (7 or more, the maximum being 19) and found that our criterion accurately identified these groups of policies as having duplicates. Because this automated deduplication method proved to be quite accurate, we subsequently used this criterion to remove likely duplicates within each dataset. We show the distribution of policies we found to be duplicates according to this criterion in Table 6.

As can be seen, we identified a particularly high number of duplicates within the OxCGRT dataset. This is consistent with our knowledge that duplication is a particular problem with OxCGRT data because of their methodology for data collection as well as what we knew to be a conservative approach in our custom method of deduplicating OxCGRT data.

[434] Note, for the purposes of deduplication, the descriptions were stripped of punctuation and special characters and transformed to all lowercase letters in order to decrease the likelihood that stray superfluous symbols would prevent the identification of duplicates.

[435] Note that we excluded from this procedure, policies that had the textual description 'Extension' or 'extend' in their descriptions. As part of our investigation, we found that it was common for coders to copy and paste the same description with this word every time a policy was extended in time and as such we would have inaccurately removed many policies had we not excluded such observations from our deduplication efforts.

Step 3b. Deduplication across External Datasets

The data was also evaluated for duplicates across datasets. Data duplication across datasets happens because different policy trackers have only coordinated their work in collecting PHSM data to a limited extent. As such, the same policy may be independently documented by coders in different datasets. While this is desirable from the point of view of data validation, it is a hindrance from the point of view of data harmonization.

As a first step in deduplicating data across datasets, we were able to remove a number of observations that were by definition duplicates. Specifically, since the OxCGRT subnational data for Canada is based in large part on the data collected by CIHI, we removed OxCGRT data for Canada from our dataset and instead chose to prioritize the more fine-grained version of the data documented by the CIHI dataset. Note that the full WHO PHSM dataset actually includes data from ACAPS, John Hopkins and OxCGRT. These observations were removed from the dataset as well following a similar logic. That is, it seemed likely that a direct translation from e.g. the ACAPS/JHU to CoronaNet taxonomy would lead to fewer errors than using the version of the data that first translates ACAPS/JHU to the WHO PHSM taxonomy and then to the CoronaNet taxonomy. Second, it further allows us to maintain and evaluate the full ACAPS and JHU datasets; whereas in the WHO PHSM dataset the ACAPS data has already been deduplicated according to the WHO PHSM taxonomy.

Following this, we then experimented with identifying duplicates across datasets more generally. In addition to exploring which set of variables most reliably identified groups of true duplicates (as we did for identifying duplicates within datasets), when duplicating across datasets, we further had to decide from which dataset observations should be retained when duplicates were found. With regards the former, we found that identifying duplicates based on the following variables[436] to yield the most accurate results :

- type : records the broad policy area of a given COVID-19 policy. E.g. a policy related to schools will be coded as ‘Closure and Regulation of Schools’ type.

[436] We considered other variables but found that they were not adequate because they were not broadly collected across different external datasets. E.g. enforcer is only collected by CIHI; target country, target province is only collected by COVIDAMP; target direction, institution status is only collected by JHU; type mass gathering is only collected by WHO EURO and WHO CDC,date announced is only collected by COVIDAMP and CIHI.

- type sub cat: The specific policy area of a given COVID-19 policy. This is hierarchically determined such that only certain type and type sub cat combinations can go together. E.g. A policy related to primary schools will have a sub-type of 'Primary Schools' and will by definition have a policy type of 'Closure and Regulation of Schools' .
- country: records the country that a policy originates from, where the list of countries are standardized,
- province : records the province that a policy originates from, where the list of policies are semi-standardized (see Section 4.3.2 for more info),
- target who what : if applicable, records the citizenship (citizen or non-citizen) or travel status (traveler or resident) which a given policy is targeted toward
- date start : records the start date of a given policy

Meanwhile, with regards to the issue of what observations we should ultimately retain when duplicates were identified, we developed a protocol for prioritizing given datasets based on both our qualitative experience working and transforming each dataset during the taxonomy mapping exercise in Step 1 as well as the quantitative assessment of the data quality of each dataset which we outlined in Section 4.2.2. When there was only one duplicate identified for a given observation, we chose to retain information from the dataset that had the most number of characters in its textual description of that observation. When more than one duplicate was identified per grouping however, we developed the following protocol for prioritizing which observation to retain:

- Priority 1: For Canadian data, CIHI is prioritized first because this dataset specializes in collecting Canadian data.
- Priority 2: COVIDAMP data is prioritized second for all data except for Canadian data based on both our qualitative and quantitative assessment of COVDIAMP data quality. Based on our experience creating the taxonomy map between COVIDAMP and CoronaNet, we found that COVIDAMP's taxonomy was very similar to the CoronaNet taxonomy, mitigating the challenge of taxonomy mapping and potential attendant errors. In terms of our quantitative assessment of COVIDAMP data quality, we found it to be relatively high quality insofar as there are very few missing links and relatively high quality of textual descriptions. Note however, that COVIDAMP only collects data for 64 sovereign countries (while 95 are available in its dataset, these include policies for United States Native American tribes).

- Priority 3: WHO CDC ITF and WHO EURO is prioritized third for all data except for Canadian data. These data were prioritized together because they have already been mutually assessed for deduplication within the WHO PHSM dataset. In terms of data quality, the CDC ITF data appears to have higher quality descriptions compared to OxCGRT, ACAPS and JHU based on the average length of the description, the number of descriptions with less than 50 characters, while the WHO EURO data appears to have higher quality descriptions than ACAPS and JHU based on the average description length and higher quality descriptions than ACAPS, JHU and OxCGRT based on the number of descriptions with less than 50 characters. Meanwhile, both datasets also have fewer missing end dates than ACAPS, JHU and OxCGRT.
- Priority 4: OxCGRT data is prioritized fourth for all data except for Canadian data because the OxCGRT data has some information on end dates and based on our qualitative assessment, has more informative descriptions of policies than the JHU and ACAPS. This is supported quantitatively as well given that OxCGRT descriptions are on average longer and have less missingness than JHU and ACAPS descriptions.
- Priority 5: John Hopkins is prioritized fifth for all data except for Canadian data because compared to the ACPAS taxonomy, the John Hopkins taxonomy is relatively similar to the CoronaNet taxonomy and it is relatively rich in subnational data. It was prioritized after the other datasets in part because it has no information on end dates.
- Priority 6: ACAPS data is prioritized sixth for all data except for Canadian data. This is because compared to the other datasets, its textual descriptions are of poorer quality and because it has no information on end dates.

Using the above methodology, we identified 5989 duplicate observations. The distribution of policies identified as duplicates is shown in Table 7. Here we can see that observations from OxCGRT and ACAPs were discarded most often given these criteria. We then sampled 100 groups of observations identified to be duplicates, for a total of 425 observations, using this algorithm and found that 74.5% to be true duplicates, meaning that around 1500 observations were discarded as being duplicates in this process that likely were unique observations. Given that we identified around 180k observations to harmonize to begin with and that most policies discarded were from datasets that we had previously found to have a higher likelihood of duplication

(OxCGRT) or to be comparatively of lower quality (ACAPS), we made the judgment call that it was acceptable to discard this small percentage of observations without threatening the rigor of the data harmonization exercise writ large. Moreover, discarding these policies for consideration for manual harmonization at this point does not preclude doing so at a later state should resources allow for reassessing the value of harmonizing these policies.

Step 3c. Deduplication between CoronaNet and External Datasets

Lastly, we also evaluated the extent to which there were duplicates between the CoronaNet dataset and the external datasets. Such duplication can occur for the same reason that there is duplication across datasets: there has not been coordination between CoronaNet and these other datasets in terms of collecting policies and as such it is quite possible that there are duplicates across these datasets.

Like our attempts to identify duplicates both within and across the external datasets, we also experimented with different sets of variables that could accurately identify true duplicates across the CoronaNet and external datasets. However, ultimately we were not able to find a combination that yielded sufficiently high accuracy. Our best attempt used the following variables to identify true duplicates:

- country
- province
- date start
- init country level
- link

Based on this criteria, we sampled 100 groups of policies found to be duplicates (equivalent to 764 observations) but found that only 14 were true duplicates, for an accuracy of 14%. Subsequent efforts with other sets of variables did not improve on this percentage. As such, we were unable to automate deduplication of the external dataset across the external and CoronaNet datasets and limited our automated deduplication efforts to deduplication within and across external datasets.

As a last step, we adjusted the dataset at this stage for the sample of policies that we manually inspected for duplication in Steps 3a and 3b. In other words, we recovered the policies that the algorithm falsely identified as being duplicates and added them back to the dataset to be evaluated for manual harmonization. In so doing, we additionally identified observations that would not be considered policies in the CoronaNet dataset from this sample (around 50) and removed them for consideration from manual harmonization.

Step 4. Piloting of Manual Harmonization Efforts

Steps 1 through 3 yielded an external dataset for which automated taxonomy map- pings provided a rough first translation of the external data to the CoronaNet taxonomy and automated deduplication was able to remove the most obvious in- stances of duplicates within the external dataset.

As the challenges of harmonizing data from different, unclean data with inconsistently preserved raw sources revealed themselves, it became clear that the bulk of the work in data harmonization would need to be manual. While automated methods were able to reduce the size of the external dataset from around 180k to around 150k records, this still represents a tremendous number of policies to harmonize. As such, the CoronaNet Research Project has recruited hundreds of volunteers from around the world to help us complete this task.

Before rolling out these efforts to the entire project however, we first piloted data harmonization for a subset of each external dataset in order to i) validate the accuracy of the automated taxonomy mappings in Step 1 and ii) learn about potential difficulties and pitfalls as well as useful strategies to data harmonization so as to provide better guidance to future volunteers.

Table 8 describes the scope of our pilot harmonization efforts. The 'assessment time frame' refers to the actual time frame spent on piloting the data harmonization efforts (as opposed to when the policies themselves were implemented). Part of the reason for these staggered time frames is that each taxonomy map itself took around 3-4 weeks to create; once a taxonomy map was created, it was immediately piloted for a given geographical scope. The choice to pilot certain countries and regions depended both on the availability of data for a given region for a given dataset and CoronaNet's own prioritization of harmonizing European countries first given its partial funding from an EU Horizon 2020 grant. While relatively more assessments were done for taxonomies that were piloted earlier, fewer policies were assessed later on in part because i) taxonomy maps became better given the experience building the earlier ones and ii) assessment capabilities became higher given the experience of assessing earlier taxonomies. The rollout of starting with mapping taxonomies from certain datasets as opposed to others was largely a function of how much capacity for cooperation the partner dataset was able to provide in building a given taxonomy map.

As can be seen in Table 8, initially we sought to also include CCCSL in our pilot harmonization efforts. Unlike for the other taxonomy maps, the taxonomy map in this case was spearheaded by CCCSL partners. However, as part of the pilot assessment exercise, we found that both the CoronaNet and CCCSL were too complex to create high-accuracy maps. As previously discussed, given that CCCSL also had only around 11k observations, relatively few observations compared to other trackers with aspirations to track policies world-wide, inconsistently preserved sources, and unstandardized descriptions, we decided to depriortize harmonizing CCCSL data.

In piloting this data harmonization process more generally, research assistants reported that vague or incomplete descriptions and missing or dead links increased the difficulty of the work. It was not uncommon to encounter duplicate policies or external policies that needed to be broken down into smaller pieces in order to translate properly into the CoronaNet taxonomy. The pilot harmonization process also produced a pool of strategies and tips that future research assistants could draw on in their own efforts.[437] Ultimately, these experiences helped us finalize the procedure we developed to manually harmonize the data, which we describe more in the following section.

Step 5: Manual harmonization of Data

After having piloted our manual data harmonization efforts for each external dataset separately, we then finalized our plans for manual harmonization of the full combined external dataset into two main steps. First, each observation is assessed for whether it is already documented within the CoronaNet dataset or not. This information is saved internally under the column name 'overlap assessment'. Second, observations that are currently not in CoronaNet are recoded using the CoronaNet taxonomy and harmonized

[437] Some strategies include (i) reading through the descriptions of all observations for a given country or region first in order to catch potential errors in the dataset (ii) using the WayBack Machine to recover dead links (iii) being aware that national level data from the OxCGRT dataset may include information about subnational policies because of the particulars of their methodology.

into the CoronaNet dataset. This information is saved internally under the column name ‘integrate assessment’. We elaborate on each of these steps in the below.

In order to allow coders to manually assess the external data according to this criterion, we wrote the external data into Google Sheets, which we refer internally as the ‘Data Integration Sheets’, and grouped each sheet by country or subnational region and added conditional formatting to help facilitate their assessments. A note here on language: at the beginning of our harmonization process, we inaccurately referred to our efforts as ‘data integration’ instead of ‘data harmonization’. For the sake of replicability, we keep this language now in our discussion that follows, with apologies to the reader.

By using Google Sheets, we were able to provide an editable, centralized place for numerous different people to assess the external data. In addition to the ‘overlap assessment’ and ‘integrate assessment’ columns as well as columns to record which human coder made a given assessment, these sheets also provide information about the:

- Unique identifier for a given external observation (unique id)
- Dataset that it belongs to (dataset)
- Textual description of the observation (description)
- Timing of the policy (date start; date end)
- Likely policy type. The type and type sub cat: provides the direct mapping while type alt and type alt 2 provides the machine learning prediction of the policy type, where available
- Demographic targets of a policy when available (target who what, target who gen)
- Geographic information about the policy initiator (country, province, city, init other)
- Geographic target of the policy (target country, target province, target city, target other)
- Compliance of the policy (compliance)
- Types of travel the policy affected if applicable (travel mechanism), and
- Raw source of the policy either in terms of the original URL (link) or a PDF of the source (pdf link).

We summarize each of the steps below before then providing an example of how the Data Integration Sheets are used following this methodology. Though manual harmonization of the data is still ongoing, we close the section by providing an assessment of our progress to date and a discussion of tools and resources we have developed to support this process.

Step 5a. Manual assessment of overlap between external and CoronaNet data

For each observation in the external dataset, a human coder evaluates whether this observation has previously been captured in the CoronaNet dataset or not. This evaluation is stored in the column 'overlap assess' in the Data Integration Sheets and can take on the values of 'Yes', 'No', or 'NA'. The meaning of each of these values is as follows:

- 'Yes' : this means that the external observation had already been independently captured in the CoronaNet dataset. In this case, the research assistant should copy and paste the corresponding CoronaNet unique identifier, which is stored in its record id variable, into the matched record id column in the Data harmonization Sheet.
- 'No' : this means that the external observation has not been previously captured in the CoronaNet dataset. In this case, the human coder should move onto the second step of manually harmonizing the data.
- 'NA' means that no one has yet been able to make an assessment of whether a given observation is or is not already in the CoronaNet dataset.

Step 5b. Manual harmonization of data

If a given observation is found to be in the external dataset but not in the CoronaNet dataset, then the human coder should move onto the second step of harmonizing this external data into the CoronaNet taxonomy. To do so, they are instructed to treat the external observation just as they would any other potential source of information about a COVID-19 policy. In particular, they are asked to first go to the raw source of information using either the URL or PDF links (if available) provided for a given policy. That is, they are asked to recode the data based on the raw source of information provided in the Data Harmonization Links, rather than from the textual description of the observation provided by the external data.

Once they have read through the raw information source, they can then either recode the information into the CoronaNet taxonomy using the normal procedure for documenting policies at CoronaNet (that is, they can document this information into a Qualtrics survey customized for this purpose. See the Methodology section in (Cheng et al.,2020) for more information) or they can provide another assessment of the external data. In the 'harmonize assess' column, they can make one of the following 6 assessments:

- 'Harmonized'; this means that the coder has recoded it into the CoronaNet taxonomy.
- 'Harmonized with additional original research': this means that the coder had to do some additional research before coding the observation into the CoronaNet taxonomy. This could be for any number of reasons. E.g. the information that from the URL or PDF links in the external dataset may be unclear or require additional context/knowledge to code well.
- 'Harmonized with additional work to find a new link' means that the original link for the policy is dead but that the RA was able to find a new link that corroborates the information described in the 'description' column.
- 'Harmonized with additional original research AND with additional work to find a new link': means the RA fulfilled both the criterion under: 'Harmonized with additional original research' and 'Integrated with additional work to find a new link'. See above for more information.
- 'Duplicated policy': this means that there were multiple external policies that were duplicates of each other. In this case, the coder is asked to only harmonize one of them and to mark the other ones as being duplicates.
- 'Not a relevant policy': this means that after having taken a closer look at the link for the observation is not one that would be coded in the CoronaNet taxonomy.
- 'Link dead, no other link found' means that the original link for the policy as noted in the CoronaNet Data harmonization sheet is dead and the coder was unable to i) use the WayBack Machine to find the original data ii) find another link to corroborate this information. In this case, the coder is instructed to not recode this policy

overlap_assessment	matched_record_id	Notes	integrate_assessment	unique_id	dataset	description
No	NA	NA	Not a relevant policy	OXCGRT_Hungary_20210728_mask	OXCGRT	No policy changes. "It is no longer mandatory to wear a face mask, except in hospitals and social institutions."
Yes	R_3NXmQbf9TrzN3XU	NA	NA	EURO_730824_1	EURO	School trips abroad are forbidden. Already booked school trips abroad must be cancelled. The foreign language study program is also suspended
NA		NA	NA	OXCGRT_Hungary_20200311_school	OXCGRT	On 11 March 2020, Hungary's government declared a state of emergency and closed university campuses. Archive link doesn't work consistently, so including original for reference too: UNESCO data confirms a partial closure between March 11 and March 15, before shifting to a complete closure:

Figure 57: Example of Data harmonization Sheets for France

Figure 57 provides a visual example of this data harmonization exercise for three policies in Hungary. The first policy was found to not have been in the CoronaNet dataset. As such, the coder marked the overlap assessment as ‘No’. After looking through the URL or PDF link, the coder then subsequently assessed the policy as being an irrelevant policy to the CoronaNet dataset and thus ‘Not a relevant policy’ was chosen in the integrate assessment column.

Meanwhile, the second observation was found to have already been coded in the CoronaNet dataset; as such the coder marked the overlap assessment as being ‘Yes’ and copied and pasted the corresponding record in the CoronaNet dataset, R3NXmQbf9TrzN3XU into the matched record id column.

Finally, at the time of writing, the third policy has not been assessed for harmonization yet. As such, both the overlap assessment and integrate assessment columns take the value of NA.

Step 5 of manually harmonizing the data is still ongoing. However, based on the 69k observations that we have assessed so far, we have found that on average 80% of policies in the external dataset were not previously in the CoronaNet dataset. Please see section “CoronaNet Research Project Database of EU PHSMs” for a more detailed breakdown for EU countries.

We further note that since the last step in the harmonization of the different taxonomies into CoronaNet taxonomy is manual and requires the enlistment of a substantial labor force, we have made significant investments in training research assistants and providing supportive resources for them to minimize the possibility of systematic coding errors. These include:

- Regular workshops for managers and research assistants about data harmonization. These are mandatory for new research assistants and they receive this training along with the original training that we developed to onboard them into the project (Cheng et al., 2020).

- The design and diffusion of reference material to the research assistants, such as: manuals, spreadsheets, presentations, infographics and videos.
- Monitoring and rectification of inconsistencies identified in both the overlap assessment and data harmonization stages of the harmonization process by both managers and automated code. If there is an error in the data harmonization process, it is noted and communicated as feedback to research assistants to rectify before it is accepted as a valid harmonized entry.
- Open communication channels for research assistants to receive asynchronous feedback on questions they may have on the data harmonization process through Slack.

The faster the access to high quality COVID-19 PHSM data, the more likely it can be used to understand the drivers and effects of the pandemic in real time. While we could have continued original data collection in sole accordance with the methodology outlined in Cheng et al. (2020), we hope that we have demonstrated that our PHSM harmonization strategy allows us to straddle the best of both worlds insofar as relying on sources from external datasets likely helps reduce the search ng costs of finding original sources.

Discussion

Overall, we have shown that there are substantial gains to harmonizing PHSM data across 8 different datasets, particularly in terms of the time, spatial and administrative coverage of PHSM data. While some conceptual diversity is always lost when harmonizing data, we argue that by harmonizing PHSM data to the CoronaNet taxonomy, this issue is minimized due to the CoronaNet taxonomy's comparative richness. Data harmonization of these 8 datasets will still fall short of a complete PHSM dataset, especially for countries for which there is a great deal of subnational policy making or low state capacity but this effort nevertheless will provide the fullest picture yet of COVID-19 government policy making. Moreover, it substantially improves upon the existing WHO PHSM effort to harmonize data both in terms of scale and quality (see Appendix 7). More resources would allow us to complete data harmonization more quickly, which given the ongoing nature of the COVID-19 pandemic, would be welcome.

However, even if data harmonization is completed only after the pandemic is overcome, it will still present a tremendous historical resource for generations of researchers.

Our experience in data harmonization has underscored for us that the production of data may be understood not only as a mere reflection of reality, but a framing or even creation of reality. That is, by producing certain measures and not others, data can frame certain aspects of the world as more or less deserving of attention. Meanwhile, creating a measure in the first place can bring forth concepts that previously did not exist in the public consciousness (Desrosières, 2000). Harmonizing data cannot escape these dynamics and in fact invites greater scrutiny of them as it adds another layer of negotiation and complexity in terms of determining what is worthy of being measured and how to measure it. Undergirding all of this are social processes that produce data, harmonized or not, in the first place and which can have important influence on what data ultimately is or is not harmonized (Owino, 2020). Though in a number of fields, researchers have developed novel platforms that aim to help facilitate data harmonization (Parmesan et al., 2014; Chen et al., 2021), ultimately effective data harmonization requires researchers to identify clear goals for their harmonization process, a high level of attention to detail in designing a rigorous plan to carry out, and a strong working culture to ultimately successfully implement it. We hope that our guidelines and the illustrative example of our experience with PHSM data harmonization can provide a roadmap for researchers embarking on similar journeys for their own research.

Appendix

Taxonomy Maps

Interested readers are encouraged to see visit the CoronaNet website here: https://www.coronanet-project.org/external_data_harmonization.html for further information and links to the taxonomy maps we created to map each external dataset to the CoronaNet taxonomy.

COVID-19 Trackers

Please see Table 11 in Appendix A in Cheng et al (2023) which provides an overview of the 24 largest COVID-19 PHSM data collection efforts. For each tracker we provide a short description [Description], an estimation of the number of policies it has documented at the time of writing [Records], its geographic scope [Geographic scope], whether it is actively collecting data [Still collecting data?], the last date the dataset was retrieved or updated [Last retrieved; updated], the sources that the dataset relies on [Sources], a link to its URL [Website], and where the data tracking effort is located geographically [Based in].

We hope that this table will help readers better contextualize the decision that we made to harmonize certain datasets as opposed to others. We further believe this table can in general provide readers with a comprehensive overview of available PHSM data

Coverage of subnational policy-making by country and time coverage

The following table provides an overview of subnational coverage of COVID-19 policies based on a review of the datasets covered in Table 11 in Appendix A in Cheng et al (2023). Note the time coverage within a given dataset provides an average date across different subnational regions. For example, while the table notes that CoronaNet provides subnational data for Australia until December 2020, in effect this means that for some subnational regions the time coverage goes beyond December 2020 and for other subnational regions it stops before December 2020, with December 2020 being an approximate average date across Australia.

Table 25: Subnational data coverage by dataset and time

country	dataset (time coverage within the dataset)
Australia	CoronaNet (December 2020), OxCGRT (December 2022)
Brazil	CoronaNet (December 2020), OxCGRT (December 2022)
Canada	CIHI, CoronaNet (December 2020), OxCGRT (December 2022)
China	CoronaNet (January 2021), OxCGRT (January 2023)
France	CoronaNet (May 2021)
Germany	CoronaNet (April 2021)
India	CoronaNet (January 2021), HIT-COVID (December 2020), OxCGRT (December 2022)
Italy	CoronaNet (March 2021)
Japan	CoronaNet (January 2021)
Kazakhstan	CoronaNet (February 2021)
Nigeria	CoronaNet (January 2021)
Switzerland	CoronaNet (January 2021)
Spain	CoronaNet (May 2021)
Russia	CoronaNet (April 2021)
United Kingdom	COVIDAMP (December 2020), OxCGRT (December 2022), HealthUK[109] (December 2020)
United States	CoronaNet (December 2020), COVID-19 US State Policies (CUSP) (mid 2021) [110], COVID-19 State Policy Tracker[111] (August 2021), COVIDAMP (July 2022), HIT-COVID (November 2020), OxCGRT (December 2022), State Policy Responses to COVID-19 (SPRC19)[112] (April 2020), Yale SOM-Tobin Center State and Local COVID Restriction Database[113] (2021; data not publicly available so this is an approximation)

Comparison between CoronaNet and WHO PHSM data harmonization efforts

We are aware of at least one other effort to harmonize PHSM data from different datasets: the World Health Organization's (WHO) PHSM dataset. The World Health Organization's (WHO) PHSM dataset was first published in the summer of 2020 and harmonizes data from five projects which we also include in our data harmonization efforts: OxCGRT, ACAPS, HIT-COVID, WHO EURO and CDC). Aside from the fact the WHO does not include data from CoronaNet, COVIDAMP or CIHI, a crucial difference between our data harmonization efforts and the WHO effort is that the WHO PHSM dataset does not collect original data policies but rather focuses on merging different data sources. Having mapped and evaluated the quality of the WHO PHSM dataset as part of our own data harmonization exercise, we argue that our data harmonization effort improves on their efforts in several respects with regards to the scale and quality of the resulting harmonized data.

The obvious benefit of the WHO PHSM harmonization effort over ours is (i) that they have harmonized data past September 2021 and (ii) that they have been releasing weekly updates which harmonize the latest observations from each underlying dataset. Since August 2022 these weekly updates have stopped however and on their website they report that they have concluded their harmonization exercise. Despite these advantages in time coverage, we argue their approach had come at a substantial cost to data quality. We contend that combining CoronaNet's general methodology of (i) concentrating on a more limited time period and smaller set of countries through to September 2021 (ii) recruiting volunteers all around the world dedicated towards documenting policies for a given country and (iii) using a survey instrument to collect policies (Cheng et al., 2020) with (iv) following a manual data harmonization effort has allowed us to create a more standardized, coherent and valid, dataset compared to the WHO effort. We elaborate on both how our data harmonization efforts compare in terms of scale and quality in the following sections. We note, that in contrast to our analysis of the subset of the WHO data that we harmonized and discuss in the Methodology section of the paper which was limited to data harmonized before September 10, 2020, in our comparison below we assess the differences between our harmonization efforts and their latest harmonized data, which contains data until August 2022.

Comparing the scale of harmonization efforts

Overall, we argue that the CoronaNet ongoing harmonization efforts have lead to a dataset that is more compact, insofar as it limits itself to policies made before September 2021, but as such more complete and high quality, than the WHO PHSM harmonization effort, which has harmonized data until August 2022.

We start with a broad comparison of the two harmonization efforts by volume of policies documented. We note that the latest, and final version of the PHSM dataset (dating to August 2022) contains around 121,000 policies, which is close to 30k policies less than the size of the existing CoronaNet dataset, which at the time of writing documents more than 150,000 policies. On the basis of the number of policies alone, our ongoing harmonization efforts, almost certainly yields a dataset that is more complete than the WHO effort for the time period up until Septem- ber 2021. By comparison, for this same time period, the WHO PHSM dataset documents close to 96k policies.

Indeed, when we break down our harmonization efforts by dataset, we can infer that the WHO PHSM data has less complete data coverage than CoronaNet in part because it does not harmonize data from CoronaNet, COVIDAMP or CIHI. Meanwhile, Figure 58 further allows us to break down the amount of data in the harmonized WHO PHSM data by dataset and finer slices of time. As it shows, over time, it has come to increasingly rely on data from OXCGRT and WHO EURO datasets, as ACAPS, HIT-COVID and CDC stopped data collection.

To take a closer look at how the two data harmonization efforts compare with regards to coverage over time, although the WHO PHSM dataset has indeed been able to harmonize data past September 2021, we believe that this has come at the cost of overall data completeness and quality. That is, given that the pandemic was very much still in full swing from September 2021 to August 2022, with most countries focusing on COVID-19 vaccination in particular, we believe that the 22k+ observations that the WHO PHSM dataset has been able to harmonize from September 2021 to August 2022 can present only a very incomplete picture of the pandemic. Indeed, on further observation, we find that these 22k+ documents policies for 186 countries, with a mean of 120 policies per country. By comparison, the WHO PHSM dataset documented around 44k policies for the same time period one year before, that is, from September 2020 to August 2021 for 228 countries, with a mean of 186 policies per country. For further comparison, we can look at numbers from the CoronaNet dataset from September 2021 to August 2021. Here we find that CoronaNet documented data for 182 countries, with a mean of 228 policies per country. These numbers suggest that by focusing on a more limited period of time, the CoronaNet data harmonization effort is arguably able to build a more coherent dataset for a given time period.

With regards to geographical coverage, though the PHSM dataset provides coverage of 233 regions while our data harmonization efforts only cover 201, these additional covered regions exclusively consist of small island nations or overseas territories which are on average, undercoded within the WHO PHSM dataset.[438] Meanwhile, the WHO PHSM data harmonization effort puts relatively little emphasis on harmonizing subnational data; around 34% of the data it harmonizes is at the subnational level, compared to 51% for our data harmonization efforts. This is all the more important given that there is substantial subnational variation in the policy making process for many countries, which we discuss in greater detail in the next section.

Comparing the quality of harmonization efforts

Overall, we have found that the WHO PHSM harmonization efforts suffer from significant problems with regards to data standardization, data coherence as well as source data compared to the CoronaNet efforts.

[438] In the WHO PHSM dataset, there are on average 59 policies which on average covers policies made until mid August 2020 for the following 38 islands and overseas territories and which are not covered in our data harmonization efforts: American Samoa, Anguilla, Aruba, Bermuda, Bonaire, British Virgin Islands, Cayman Islands, Cook Islands, Curacao, Falkland Islands (Malvinas), Faroe Islands, French Guiana, French Polynesia, Gibraltar, Greenland, Guadeloupe, Guam, Guernsey, Isle Of Man, Jersey, Martinique, Mayotte, Montserrat, New Caledonia, Niue, Northern Mariana Islands, Commonwealth Of The, Pitcairn Islands, Puerto Rico, Reunion, Saba, Saint Barthelemy, Saint Helena, Saint Martin, Saint Pierre and Miquelon, Sint Eustatius, Sint Maarten, Turks And Caicos Islands, United States Virgin Islands, Wallis And Futuna.

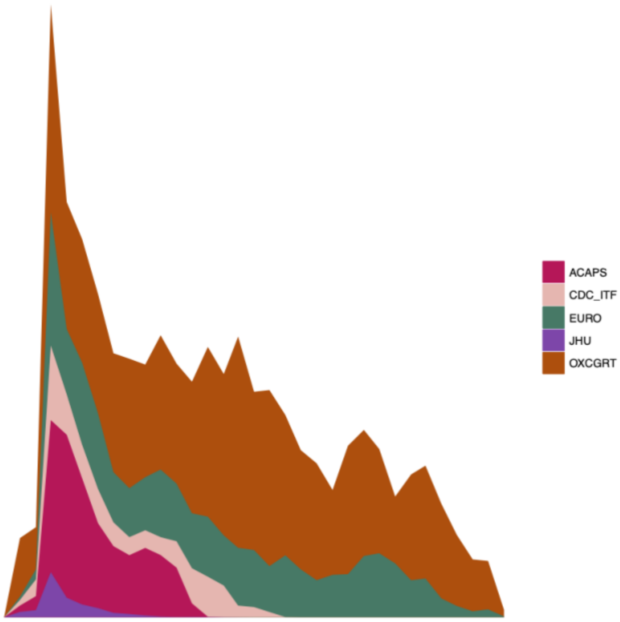

Figure 58: Number of policies by tracker overtime in the WHO PHSM dataset

With regards to data standardization, we have identified a number of inconsistencies in the WHO PHSM dataset which makes it difficult to use their data without additional processing. For example, while the WHO dataset captures rich informa- tion on the targets of its compiled data in its 'targeted' variable, the usefulness of this variable for analysis is diminished by the fact that it contains more than 13,390 unique entries.[439] While the CoronaNet dataset captures much of this same information, it organizes the information into different fields in more manageable numbers of categories within each, which facilitates a researcher's ability to quantitatively or qualitatively compare different observations. For instance, while the WHO's 'targeted' variable includes entries as varied as 'secondary schools', 'citizens', and 'All flights', CoronaNet documents this information in separate fields ('secondary schools' can be found in the 'type sub cat' variable, which generally captures information on policy subtypes. In this case secondary schools are a subtype of the broader 'Closure and Regulation of Schools' [type] variable. Meanwhile 'citizens' can be found in the [target who what] variable which captures information on demographic targets, and 'All flights' can be found in the [travel mechanism] variable

[439] Upon closer examination, by simply performing some simple automated cleaning procedures on these categories like removing special characters and making all characters lowercase, the actual number of unique entries is closer to 5,900. However even after performing this procedure, the point about lack of standardization still stands. E.g. various observations read: 'al schools', 'all school'; 'all schools' when it would be more useful to use one standard phrasing to refer to all schools.

which generally captures information as to the mode of travel that is restricted). Moreover, though the WHO notes that they standardize names for 'country, territory or area' in their dataset downloaded, we have consistently found that data on subnational geographic areas are inconsistently documented (documented in their 'area covered' variable). For instance, the province of Jammu and Kashmir of India is alternatively coded as 'jammu and kashmir', 'Jammu and kashmir' or 'Jammu and Kahsmir' in the WHO dataset. Because CoronaNet uses a survey instrument to document this data, problems with typos which can make standardization difficult to achieve are avoided.

Additionally, we have found a substantial degree of policy incoherence in the WHO PHSM dataset, both in terms of the quality of the observations harmonized in the dataset as well as in terms of observations not included in the data. With regards to the former, as of August 2022, the WHO PHSM dataset lacks a textual description of a given policy for more than 890 measures and reports 2,911 policies without a start date. These issues are not present in the CoronaNet data collection methodology because these dimensions are collected as forced responses in the survey. Meanwhile, with regards to the latter, we have found that there is still a great deal of incoherence in the external data when one simply compiles data from different datasets without doing additional research to fill in the blanks. For instance, while our data harmonization efforts of 7 different datasets have identified 844 external policies for Romania, we found that there were a substantial number of policies that were not captured by any external data. For instance, even though we identified more 40 policies in the external dataset which could be considered as having the policy type 'Lockdown' in the CoronaNet taxonomy, further investigation revealed more than 400 such lockdown policies in Romania because of the government's strategy of implementing lockdowns in different geographical regions over time. Because CoronaNet also engages in original data collection, such policy gaps can be filled in in conjunction with our data harmonization efforts, although not in the WHO data harmonization efforts. These observations match with our experience that PHSM policies can be very complex and require a) experts who can do the research to substantiate not only policies that are in external datasets but which the governments have actually implemented b) evaluate and clean existing policies in external datasets in c) a standardized manner.

Finally problems in the WHO PHSM dataset with regards to missing raw sources and lack of transparency around the data generation process hinders the ability to evaluate the validity of the WHO PHSM dataset. In the current WHO PHSM dataset, there are

5700 missing links, 20k+ additional links that the WHO PHSM have found to be dead, and 25k+ links which the WHO declared as being ’unknown’ in terms of whether they are live or not, but for which no follow up sources are provided. In contrast, CoronaNet only includes data points that have a working link or a screenshot of the original PDF source attached. When CoronaNet research assistants encounter missing or dead links as part of the data harmonization process, they are instructed to either attempt to recover active links with the same information (to date, around 5.8% of the harmonized data) or the observation is not included in the dataset (around 7.3% of the external data). Access to the raw sources is paramount for researchers to independently ascertain the validity and reliability of the subsequent data coded. With regards to the WHO PHSM data generation process, though in WHO (2020) they provide a basic description of how they process the data, given the issues with data quality outlined above, greater transparency as to what criterion they use to determine that “the clean, verified data is ready to be shared with WHO and other researchers.” would be welcome.

Discussion

By laying out the contrast between our data harmonization effort and the WHO data harmonization effort, we hope that readers gain not only a deeper appreciation of the complexity of harmonizing PHSM data, but also for the relative merits of our efforts. Given the volume and complexity of PHSM data as well as the reality of limited resources, we believe that our decision to harmonize data for a more limited period of time results in a higher quality, more complete dataset that can provide a more rigorous foundation for researcher on the COVID-19 pandemic.

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Study 3: The Future of COVID-19 PHSM Data Tracking

Introduction

COVID-19 Public health and safety measures (PHSMs) have not only shaped the progression of the pandemic but have irrevocably affected how billions of people conduct their lives. While tracking PHSMs is key to our understanding of the pandemic's drivers and impacts, gathering accurate, timely and complete PHSM data is a monumental task: government responses to COVID-19 are incredibly varied across time and space and their documentation has been both unstructured and dispersed across a broad range of government and news portals.

Without previous work to guide them, from March 2020 on, more than 40 distinct PHSM "trackers" have taken on the challenge of organizing these policies into structured databases that are both understandable to non-experts and available for use in rigorous research. To do so, they have sifted through reams of primary sources, developed structured taxonomies to categorize them, and coordinated tremendous human resources to try to keep pace with the sheer volume of PHSMs to collect, categorize, clean, and validate. Though PHSM trackers are largely associated with the underlying data they process, they should be more holistically understood as research groups (from academia or the public or private sectors) that produce both the taxonomies for describing and understanding government responses to COVID-19 as well as the organizational infrastructures for systematically and PHSM data in near real-time.

By granting public access to their data, policy trackers in the new field of PHSM data science provide an essential foundation for our collective ability to answer pressing questions of interest to researchers, policy-makers and the global community alike including: When and under what conditions are some PHSM more or less effective at curbing the spread of the virus? Why do some countries adopt certain PHSM while others do not? What unintended political, economic or social consequences have resulted from PHSM?

While scientifically rigorous research on these and other questions crucially depends on the availability of timely and high-quality PHSM data, the continued provision of this public good is far from guaranteed. In this section, we draw from Cheng et al (2022) which brought together a consortium of PHSM data trackers to raise awareness of the many achievements and contributions of PHSM data science over the past year is of secondary importance to making sure the wider research and policy community is aware of the major challenges that trackers face in sustaining their indispensable work. This review of pressing issues in the field of PHSM data science represents a summary of the discussions conducted between over 40 trackers across two PHSM conferences hosted on these topics. It further includes the results of 16 survey responses of self-reported data collected and project resources from PHSM trackers in our network up until November 2021.[440]

Major achievements of PHSM trackers

We first provide an overview of what PHSM trackers have achieved over the past two years. In particular, they have been:

1. Tracking PHSM data over time (i.e., from the beginning of the pandemic to present day) and space (i.e., worldwide coverage at both national and subnational levels). To date, trackers have coded more than 365,000 policy responses in their databases (Figure 59).[441]

[440] The links to the trackers can be accessed in the appendix.
[441] The links to the trackers can be accessed in the appendix. Because what counts as a policy can differ greatly from dataset to dataset, to maximize comparability, we only included policies that could be represented in an event dataset format where each observation is associated with a unique policy event (as opposed to a panel country-day format where a unique policy event may be captured across multiple rows of observations depending on how long the policy event was in place). Further, note that 365,000+ represents the cumulative number of policies documented by trackers independently; the number of unique policies is likely smaller due to duplication across datasets. To minimize the likelihood of double counting policies, we also only included data from trackers that conducted original data collection (for at least 1000 policies) as opposed reformatting or repurposing existing PHSM datasets (e.g., the response2covid19 dataset).

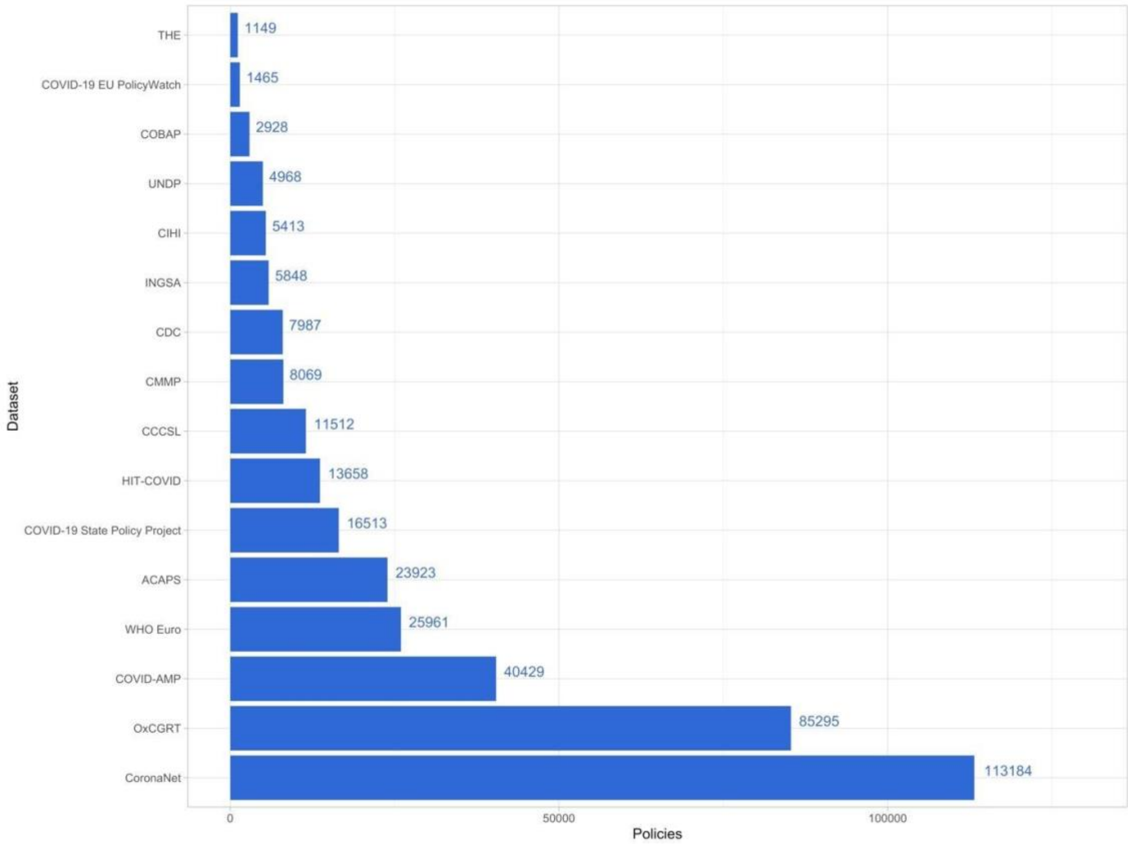

Figure 59: Total number of policies collected and curated by PHSM databases as of April 2022

2. Developing novel, structured, and detailed taxonomies customized to capture COVID-19 PHSMs.
3. Creating original organizational frameworks and infrastructure to process raw data and information into curated PHSM datasets.
4. Building significant global networks of data collectors, mostly student volunteers, united in the mission to document PHSM. They have accumulated considerable experience and knowledge as part of what is arguably one of the largest efforts ever attempted to collect public health data in real time. Across the trackers that filled out the survey, more than 2,000 people have collected data, mostly as volunteers motivated by the opportunity to contribute to scientific research.
5. Making PHSM data openly accessible and available in (close to) real time as a public good for researchers, the public, and stakeholders to utilize. Public access to PHSM data has played a crucial role in advancing our collective understanding of the countless ways that the pandemic has affected our economies, our communities and our daily lives.

6. Fostering international collaboration, coordination, and communication within and between trackers, culminating in an international conference held in February and March 2021. The COVID-19 PHSMs Data Coverage Conference (2021) brought together 40 PHSM trackers as well as researchers and PHSM data users to share key tracking lessons, identify challenges, and discuss how to enhance pandemic preparedness. Meanwhile the COVID-19 PHSMS Research Outcomes conference provided an important forum for scholars to share research findings based on PHSM data.
7. Creating the COVID-19 PHSM Network which represents an important collegial advance in facing current and future challenges raised by the novelty and complexity of collecting PHSM data.

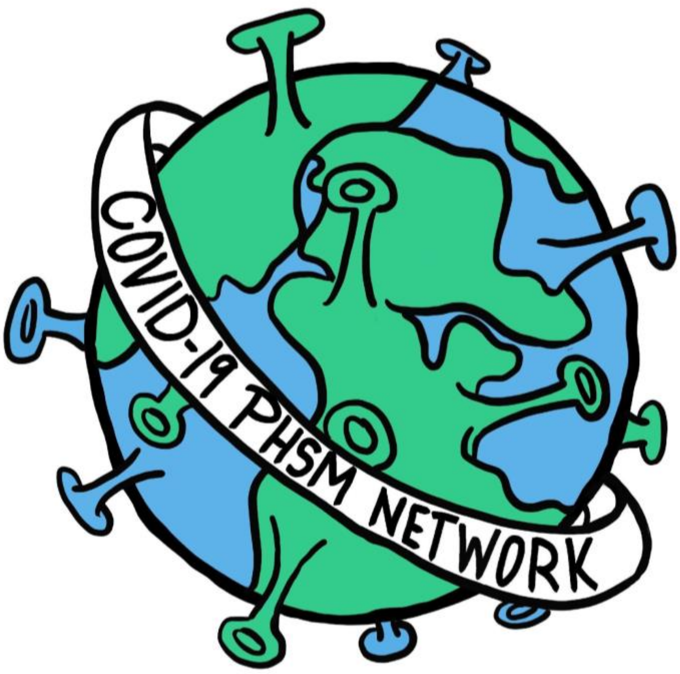

Figure 60: Logo of the newly found COVID-19 PHSM Network (2021). Created by Alexandra Williams

The value of PHSM trackers as essential tools amidst the COVID-19 crisis

PHSM trackers are building extraordinary and readily accessible historical records for future generations of scientists, policy experts, and the public to learn from. By doing so, they are building a foundation for analyzing the impact of COVID-19 government policies and interventions. Indeed, they are not only providing a critical contribution to evidence-based policymaking, but are also building extraordinary and readily accessible historical records for future generations of scientists, policy experts, and the public to learn from.

To date, combined with multidisciplinary data (e.g. number of COVID-19 cases, deaths, hospitalisations, mobility, and economic data) PHSM have provided crucial input for researchers to model and understand the spread of COVID-19. In doing so, they provide an important foundation for evidence-based policymaking and scientific research on the pandemic. For example, data from PHSM trackers have been utilized in research to evaluate the impact of PHSM on COVID-19 transmission (Gokmen et al., 2021; Senthil Prakash et al., 2021; Haug et al., 2020), mortality (Amuedo-Dorantes et al., 2020), human rights (Hong et al., 2020; Barceló et al., 2022), food prices (Akter, 2020), health policy (Büthe et al., 2020a, b), and pandemic fatigue (Petherick et al., 2021). They have also been utilized to describe and explain the cross-country and longitudinal variations in governments' COVID-19 policy decisions (Hale et al., 2021; Zweig et al., 2021). Importantly, PHSM data can further be used to communicate accurate scientific knowledge to the public, improve data transparency, hold media outlets accountable for misinterpretation, and avoid misinformation around COVID-19 PHSM and their impact as well as their potential consequences.

Major Challenges in Tracking COVID-19 PHSM

PHSM trackers have not been able to come by their achievements easily. From developing data taxonomies to building organizational structures for collecting, cleaning and validating data, PHSM trackers initiated their efforts without the benefit of precedent. At the beginning of the pandemic, trackers also worked without knowledge of each other's efforts. While a vast improvement over isolation, greater cooperation among trackers entails its own set of challenges. Though in their commentary Shen et al. (2021) provides a more in depth discussion of the various data challenges faced by individual challenges, our review below provides a more holistic overview of both the data and organizational challenges facing PHSM trackers individually and as a group.

Individual Challenges

Data taxonomy forms the basis for comprehensible and meaningful use of PHSM data. While each tracker had different strategies for building their taxonomies, given the peculiarities of how governments implemented COVID-19 PHSM, they generally developed them inductively and inferentially. Trackers have found that the main challenge in doing so is developing a standard taxonomy that can both capture the nuances and peculiarities of a given country's PHSM rollout while also allowing for cross-country comparisons. Additionally, ensuring that taxonomies remain relevant over time by including periodic updates (e.g, documenting vaccination policies following the global vaccine rollout) remains an ongoing challenge.

Likewise, data standardization remains a key challenge in PHSM data collection as well as data science more broadly. Beyond the enormous variability in definitions of policies and interventions PHSM trackers encountered while collecting data from around the globe, lack of data standardization on the national, state/provincial, and local level represents a major hindrance for data collection (Shen et al., 2021). This issue affects not only COVID-19 data but also basic demographic data. Indeed, detailed demographic data is often not available to the public and definitions as well as categories for demographic characteristics vary across countries and states (Blauer, 2021). This disarray not only makes data collection highly challenging but it also makes it difficult to compare or identify the multitude of e.g. socioeconomic and health consequences of the pandemic, especially with regards to the most vulnerable populations.

To collect, clean, and validate this enormous volume of PHSM data, most trackers rely on the tremendous contribution of many volunteers. However, the corresponding recruitment, training, engagement, and organization of volunteers present enormous challenges. Most volunteers are students and their availability thus fluctuates according to the academic calendar. The reliance on unpaid work also raises questions of research ethics and sustainability. According to our survey, only 10% of data collectors across different trackers are paid; the vast majority are volunteers serving a public good (Figure 60A).

Many trackers rely on volunteers for data collection not by design, but due to lack of funding. Funding constraints are unfortunately quite severe: many policy trackers have had to stop working because of the lack of continued funding, resulting in wider evidentiary gaps. When trackers do receive funding, it is often short-term because of uncertainty about the pandemic's duration. According to our tracker survey, only 16% of the overall funding needs by trackers are satisfied (Figure 60B). This has led to a 65% decline in the number of trackers that are actively collecting data (Figure 60C). Some trackers have attempted to address this problem by integrating their data into the few databases with more sustainable funding schemes, which underscores the importance of longer-term funding for sustained PHSM data tracking.

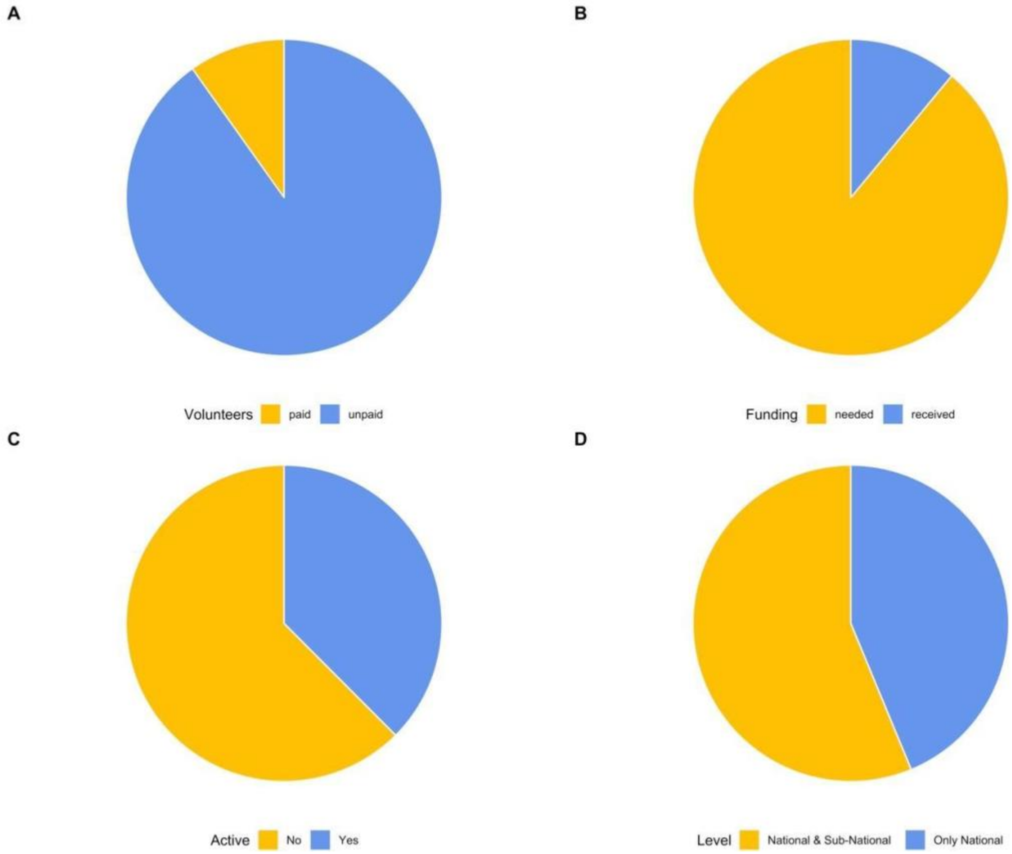

Figure 61: Responses from the tracker survey of PHSM Network members to the following questions A: What are the number of paid versus unpaid data collectors? B: What are funding needs compared to received funds? C: Is the tracker still actively coding new policies? D: What governmental level of polices do trackers gather data for?

Collective Challenges

PHSM trackers face challenges not only as individual actors, but also as a collective ecosystem. At the beginning of the pandemic, 40+ PHSM tracking projects launched with little to no knowledge of each other due to their emergency nature. These parallel data collection efforts led to the duplication of data, multiple taxonomy strategies across trackers, gaps in data coverage and variation in data quality (Daly et al., 2021).

While there is significant data overlap among trackers, many trackers also have unique data coverage due to focused data collection on specific domains, such as public health, economic policy, and human rights. Though these differences provide a diversity of perspectives on PHSM data tracking, they can lead to difficulties in data utilization. Working toward a single integrated source might seem like an obvious solution, and indeed the World Health Organization (WHO) has done important work toward this goal

(World Health Organization, 2021). However, this work also underscores the difficulty in data integration when underlying data sources are still in the process of being cleaned and organized. More to the point, we believe that there is great value in continuing to maintain diversity in tracking projects. Doing so allows (i) different datasets to be validated against each other (ii) individual datasets to reflect a variety of research priorities and (iii) stakeholders find the dataset that best fits their needs.

The benefits of diversity must be continuously balanced against the costs of data collection, completeness, and quality. With regards to data completeness, PHSM trackers have done impressive work in documenting how governments around the world have responded to the pandemic at both national and subnational levels; however, data overlaps and gaps persist. In general, across PHSM trackers, data from the "Global North" are overrepresented whereas data from the "Global South" are poor or missing. In the PHSM network, only one tracker is placed in the Global South. Due to funder interests, most data collection is focused on OECD countries and on national policies, leading to large gaps in data collection for less-developed countries and sub-national levels. While over 50% of the bigger trackers collect sub-national data (Figure 3D), systematic subnational data collection for non-OECD countries is limited to Brazil, China, India, Russia and Nigeria.

With regards to data quality, trackers have learned that local knowledge and/or language skills are essential to gathering complete and accurate information. PHSM data quality for countries in the Global South is more likely to suffer because many of the major trackers and their funders are based in the Global North. Funding priorities thus tend to focus on the Global North, where PHSM trackers' leadership also tends to have better networks, to the detriment of data quality for the Global South.

Altogether, while all trackers are united in their aim to document government responses to the COVID-19, when considering the sheer number of policies it is possible to collect on the one side with the diversity of understandings of how to define a policy as well as organizational resources to capture them on the other side mean that researchers should carefully. However, because the emergency situation

Finally, given the colossal volume and speed of government COVID-19 policy making, greater collaboration between researchers in different fields (e.g. epidemiologists, political scientists, data scientists) as well as communication with policy makers is further needed to understand how to best model and analyze PHSM data. Such work would need to start with better integrating PHSM with other relevant COVID-19 data (e.g. COVID-19 cases, deaths and hospitalizations; economic indicators; environmental indicators). In all likelihood, further work would need to be done to develop novel analytical tools for using PHSM data to assess the drivers and impacts of the pandemic. While some trackers have made more headway than others on this front (e.g. see Our World in Data's COVID-19 dashboard: https://ourworldindata.org/coronavirus; or the PERISCOPE COVID Atlas: https://periscopeproject.eu/covid-atlas), the field as a whole still lacks much needed coordination and resources to forward this work.

To address these challenges, in what follows, we outline key focus areas for PHSM data science and advocate for greater cooperation and communication among and between PHSM trackers.

Key Focus Areas for Future PHSM Data Tracking

In sharing and reflecting on the challenges and lessons learned, we argue that greater emphasis on the following key focus areas will greatly improve our ability to track future PHSM:

1. Developing a glossary and best practices on PHSM data collection, processing, and management.
2. Tracking new PHSM: Governments continue to implement new PHSM as the pandemic progresses (e.g., COVID-19 vaccination policies) and trackers must keep their taxonomies up to date in order to adapt to the changing landscape of COVID-19 PHSM.
3. Increasing representation of low- and middle-income countries (LMICs) in the Global South: Given the importance of promoting equity in data coverage, we advocate for increased funding of and collaboration with trackers based in and focused on LMICs and the Global South.
4. Collecting health equity data: COVID-19 has highlighted and aggravated existing inequities and human rights abuses across the world, such as racism, poverty, and mistreatment of refugees (Shadmi et al., 2020; Bhaskar et al., 2020). There is an urgent need to collect equity and human rights related data, which is exemplified by several PHSM trackers focusing on legal protections, disability justice, and measures of democracy (COVID-19 Law & Policy Database; The

Johns Hopkins Disability Health Research Center COVID-19 Vaccine Dashboard; Public Health Protective Policy Index Dataset).

5. Maintaining independent data collection: Protecting the independence, integrity and freedom to pursue research without pressure from governments or funders is vital to ensuring PHSM data is free from bias and of the highest quality and accuracy.
6. Ensuring that data remain openly accessible: Given the severity of the COVID-19 pandemic, the available technology, and the crucial role that PHSM data can play in informing public health policy, making these data open-access advances the common good since they inform policies for the current and future pandemic(s). This is particularly relevant as the burden of the pandemic continues to shift towards lower-income countries with less resources to collect, aggregate, and analyze such data.
7. Advocating for greater funding and recognition for volunteers: The availability, quality and timeliness of PHSM data is reliant on the thousands of people who have volunteered their time and energy to contribute to this public good. Their efforts deserve not only more recognition but also financial support to sustain tracking efforts going forward.
8. Preparing for future pandemics: Given the lack of coordinated PHSM data collection at the beginning of the COVID-19 pandemic, we advocate that governments, international organizations, and partners incorporate systematic PHSM tracking and analyses as a strategic priority in preparing for the future of this and other pandemic(s). Moreover, the systematic collection of PHSM may be valuable in other areas of research, especially in urgent global issues such as climate change, antimicrobial resistance, and social equity. Our practices can serve as a roadmap for PHSM data collection as the COVID-19 pandemic evolves as well as in future public health emergencies.

Next Steps and the Importance of International Collaboration

In addressing the focus areas above, greater communication and collaboration will open doors to further input, feedback, and support in order to reach our common goal of providing real-time, high-quality, complete PHSM data to inform the COVID-19 pandemic response. The value of such collaboration was demonstrated during both the COVID-19 Data Coverage Conference, at which, together with other participating trackers, we launched the PHSM Network and created its underlying mutual framework for building this collaborative ecosystem.

This framework lays an important foundation for future situations in which shared public health challenges call for a collective global response. Thus far, collaboration among individual trackers has significantly increased our shared data collection ability, improved our effectiveness, and helped address the challenges and limitations of PHSM tracking. Given that international cooperation among government leaders in response to the COVID-19 pandemic has been inconsistent at best (Pevehouse, 2020), we hope that the international cooperation we are fostering within the COVID-19 PHSM Network can also serve as a model for others seeking to work together in responding to this pandemic (Maher and Van Noorden, 2021).

In order to succeed, however, this network will need the input and assistance of an even wider community -- policymakers, donors, and other stakeholders -- to provide the necessary feedback and financial support to sustain data tracking efforts given the ever-evolving nature of COVID-19 and the corresponding PHSM. The more communication there is among trackers, policymakers, and researchers, the better the quality of the PHSM data we can provide by tailoring the data to their information needs.

The longer the pandemic lasts, both the volume and variation of policies are likely to increase, making the provision of complete and high-quality PHSM data both within and across countries of immeasurable importance. At the same time however, funding and support for PHSM trackers is conversely becoming more limited, threatening the availability, quality, and comprehensiveness of PHSM data. In short, the provision of future PHSM data is not guaranteed. Our ability to provide PHSM data of the desired scope, quality and timeliness to match the importance of PHSM data to forwarding scientifically rigorous research is falling short as trackers stop data collection due to lack of funding. Given the complexities of conducting COVID-19 research, it is easy to take for granted the availability of timely, accurate, and high-quality COVID-19 PHSM data. While hundreds of trackers and thousands of volunteers have laid the foundation for robust research and evidence-based policymaking, PHSM trackers face multiple internal and external challenges in continuing their work. Moreover, to better react to future crises, the infrastructure needs to be developed now to ensure that PHSM data collected to document future emergencies can be integrated with other data and analyzed as rigorously and efficiently as possible.

While the authors here are responsible for some of the largest PHSMs trackers currently available, many of them have had to discontinue their work due to funding constraints ("ACAPS discontinued new data collection", 2021). This not only reduces the diversity of approaches to capturing PHSMs data but also makes it less likely that future PHSM will be documented at all, a possibility which will only grow bigger as the pandemic stretches out further into the future. Greater international collaboration among PHSM data trackers as well as more investment and financial support from policymakers and donors is necessary to continue broadening our understanding of the current public health crisis as well as informing future pandemic preparedness efforts.

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Discussion

As evidence-based policies gain increasing currency in the worlds of policy-making and research as well as predictive risk assessment (Bitetto et al., 2021), scrutinizing and evaluating the data on which these analyses are derived becomes ever more crucial. We have demonstrated in this chapter that the close to 50k policies documented for EU countries by the CoronaNet Research Project represents the largest, most comprehensive, and most detailed database of policies for these countries from the beginning of the pandemic since October 1, 2021. Indeed, this dataset is, on average, 10 times larger than the individual efforts of the next six largest datasets to collect data on COVID-19 PHSMs for EU countries and is 2 times larger than the combined efforts of these six largest datasets. Meanwhile, by harmonizing the data from these external datasets into the CoronaNet data, which we discuss in more depth in 'Study 2: Data Harmonization of COVID-19 PHSMs", we further ensure that what has substantively been captured by external datasets is also reflected in the data collected by CoronaNet.

However, as we have shown in this chapter, data cannot be divorced from either the institutions or institutional environment in which it is collected or the methodology employed to do so. As we highlight in "Study 3: The Future of COVID-19 PHSM Data Tracking", our ability to collect this data has been greatly reliant on volunteers, not necessarily because this is the most effective way to collect such data, but because funding constraints have limited the extent to which we could compensate people for their valuable contributions. Indeed, this is an issue that goes beyond any one individual project. Though the CoronaNet Research Project, which has been incredibly fortunate in being supported by the PERISCOPE Consortium and EU Horizon 2020 funding for its EU data collection effort, limits to this support coupled with the large number of policies EU governments have implemented in response to the pandemic have meant that it has not tried to collect PHSM data past October 1, 2021. Meanwhile, other data collection efforts, like ACAPS, JHU-HIT COVID and most recently the OxCGRT datasets have completely stopped their work in large part due to funding constraints. Given these limitations, there likely remains many more policies to document before a complete picture of COVID-19 PHSMs can be drawn across time and different levels of government and we urge greater attention and resources for this fundamental area of research.

Meanwhile understanding the underlying methodology of any dataset is crucial for understanding when it can be most appropriately used. As our country reports in Chapter 2 and “CoronaNet Research Project of COVID-19 PHSMs” in this chapter show, COVID-19 policy-making has been quite complex and nuanced. For example, researchers interested in knowing whether mandatory masks policies in all public spaces had a substantially greater effect on limiting the spread of the virus compared to mandatory mask policies targeted only towards schools would do well to use the raw CoronaNet data for forwarding understanding on this issue. However, researchers interested in knowing whether mask policies more generally had different effects on the spread of the virus compared to school policies more generally would be better served by the indices we develop and discuss in “Study 1: Summary Indices of COVID-19 PHSMs”.

Though we have focused primarily on presenting the data we have collected for EU countries in this chapter, we would be remiss if we did not point out here that data collection for countries beyond the EU are also important not just intrinsically, but for increasing understanding of drivers and effects of these policies in the EU specifically. For one, any analysis of the relative performance of COVID-19 PHSMs made in the EU compared to other regions of the world will require data on the latter. For another, any arguments about the effect of policies with respect to policies or other outcome variables that are unique to the EU necessitates a control region for forwarding causal inference on a given topic. The pandemic has shown us that the virus knows no borders and this insight applies to the collection of data about it as well.

Moreover, while we believe that the data that we have collected for on COVID-19 PHSMs in EU countries is an invaluable resource for policy makers and researchers who seek to understand their drivers and effects, we also want to warn against a potential streetlight effect: what can be measured, e.g. COVID-19 PHSMs, does not necessarily contain the universe of what is important to know for understanding COVID-19 policy responses. Indeed, there is a great deal of important qualitative, and contextual information that cannot be manipulated into a dataset form. For instance, Hungary’s turn towards authoritarianism or Belgium’s ability to centralize its historically decentralized government apparatuses, which our reports in chapter 2 of this deliverable highlight, are both necessary for understanding policy responses in those countries but would be difficult to capture as a variable in a dataset.

Ultimately, data never speaks for itself. We hope that researchers and policymakers can make use of the different perspectives on the COVID-19 PHSM data in the EU that we have presented here to find the most appropriate uses and contexts to use this data. While complete PHSM data for all countries, time periods and levels of governments is not itself a sufficient condition for a full understanding of policy drivers and effects during the COVID-19 pandemic, it is undoubtedly still a necessary one and the more work we can do to work toward this goal, the better we can illuminate the behavioral and social effects of the pandemic.

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Conclusion

Conclusion

Since virtually the beginning of the pandemic, there has been no shortage of authors offering lessons learned for improving future responses to health crises (Forman et al., 2020, Boin et al., 2020, Habersaat et al., 2020).[442] What these lessons learned point to in the abstract and what this deliverable over all has provided systematic, detailed and concrete evidence for is the following: while the pandemic has impacted virtually all dimensions of life, there is no single policy bundle of PHSMs that will always work at all times and places. Sensitivity to both the on-the-ground disease situation as well as the existing local context is necessary for adapting policy responses to fit a given situation. Moreover, the content of the policy is only the start. An effective pandemic response must take into account a variety of factors, including e.g. existing, political leadership, public trust, healthcare capacities.

Ultimately however, whatever the contours of the next global health threat, ideally we will not need to draw on lessons from year two of this pandemic, but rather be able to respond quickly and early such before it becomes a years-long global health crisis. To that end, the implementation of better preventative measures and investment in building robust crisis response protocols early on will be key to limiting the degree to which it will be necessary to contemplate the implementation of more stringent and disruptive PHSMs.

As with most complex issues, this is easier said than done. Given the complexity and scale of the COVID-19 pandemic, drawing lessons from it to apply to future public health threats is no easy task and requires harnessing as many types of evidence as possible to do so. In this deliverable, we have sought to provide a strong foundation for doing so by interrogating this problem from a number of different angles. Indeed, our first chapter explores how the EU an institution has helped set the parameters for COVID-19 PHSM

[442] For instance, in the 10 considerations that they forward, Habesatt et al (2020) put a large emphasis on including affected communities in the discussion about COVID-19 policies, communicating well with them and keeping them engaged. In their commentary, Boin et al. (2020), echo this sentiment insofar as they group their lessons into 4 main themes of which effective crisis communication is one and the inclusion of multiple stakeholders in formulating crisis response is another. They further emphasize the importance of gathering reliable information for basing pandemic response on (as well as being aware of the inherent limitations of doing so in a crisis situation) and the importance of strong leadership for effecting timely, adaptive, and coordinated responses. Forman et al. (2020)'s 12 lessons meanwhile also reflects many of these sentiments while also underscoring the need for transparency for building trust in the policy making process and calling out specific institutions like the EU and WHO for coordinating responses.

response. Its ability to do so has largely been a function of its previous experience and remit to do so. Given the experience it has now gained with the COVID-19 pandemic as well as the institutional and financial investments it is now making in public health with e.g. the HERA DG and EU4Health programs, it seems likely to affect an even more coordinated response in the face of the next pandemic. However, as our second chapter illustrates, individual level country response and studies on major factors driving policy responses show, individual countries will likely remain at the helm for the bulk of policy response. To that end, qualitative work will be important not only for providing context for the implementation and effectiveness of these policies but also for filling in the gaps for equally important but difficult to measure drivers of policy response (e.g. levels of coordination between different levels of government, compliance with PHSM). We hope the 19 country reports that make up our second chapter can help lay a foundation for this week. Larger-N studies meanwhile will be important for identifying common threads which can explain effective pandemic response, as the third chapter of this deliverable shows, though whether much can be done to manipulate these policy levers toward remains to be seen.

Finally, we hope that our corpus of close to 50k policy actions made in the EU (as well as the full corpus of nearly 170k observations in the complete dataset) publicly available through both the PERISCOPE Data Atlas and the CoronaNet website can help policy makers and researchers separate out the signal from the noise to not only draw general insights that can be help build a better health crisis response in the future, but also the impact the COVID-19 PHSMs have had on other policy areas. While we have focused on drivers of COVID-19 PHSMs in this deliverable, we note that though COVID-19 gained the unfortunate distinction of being a pandemic-level infectious disease by virtue of successfully spreading across the world, its universal nature expands past the confines of geography to impact a panoply of issues areas. Beyond eliciting a wide variety and volume of government policy-making targeted toward limiting the spread of the virus itself, as this deliverable has elucidated, it has also affected policy-making in areas as diverse as competition policy (Meunier and Mickus, 2020), environmental policy (Dupont et al., 2020, Pala et al., 2022) and cyber-security (Carrapico and Farrand, 2020). As this deliverable has shown, mapping and explaining government responses to COVID-19 is not only intrinsically important, but also instrumentally important for understanding how different areas of society have or have not been shaped by this enormous, unprecedented global public health shock.

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