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Research Report: Mapping Policy Responses to the Covid-19 Misinfodemic

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Preface

This research report is an output from a seminar on *Global Governance of Digital Technologies*, which was taught at the University of Bremen in the summer semester of 2020. That particular semester, which started right after the first wave of the Covid-19 pandemic hit Europe, was like none of us had previously imagined. What helped us to carry on was a collaboration with students and instructors across Europe as part of the first iteration of the Digital Constitutionalism Teaching Partnership. While the entire seminar (and most teaching at the University of Bremen) occurred online due to the pandemic, new challenges for society emerged almost weekly. Hence, in the seminar we focused on the problem of misinformation related to Covid-19 and as (emerging) scholars of political science set out to comparatively understand what is happening in this specific policy field. Students of the seminar have contributed, and since then updated, country and company case studies in which they illustrate the policy responses that have been applied by the respective entities. From these case studies three graduate students - Mariana Bernardes, Giorgi Davidian and Esther Hammond - developed a broader framework of how the classifications of international organizations can be applied to the cases in a meaningful way and how the concert of global policy responses can be understood through the lens of scholarship on Internet governance. This research report, after reviewing guidelines by international organizations on how to respond to misinformation related to the Covid-19 pandemic, analyzes policy responses in a comparative way. Following a framework provided by UNESCO, which classifies such misinfodemic policy responses, we analyze seven countries and two multinational companies: Armenia, Egypt, France, Hungary, New Zealand, Nigeria, Peru, Twitter and YouTube. After each case is discussed descriptively and in some detail, the case studies are summarized and presented in tabular form to allow comparison between cases. An additional layer of theory is provided by Mauro Santaniello's typology of four models of Internet governance which we adopted to the specific policy field of misinformation responses by states and companies. We conclude with a discussion of the implications of our findings.[1]

1. Introduction

Like the spread of the disease itself, the spread of misinformation regarding Covid-19 (Coronavirus SARS-CoV-2) has affected all countries in the world.[2] Unlike with pandemics related to diseases longer known to the public - such as the 2009/2010 influenza pandemic, in the case of Covid-19, new forms of digital communications, including the widespread adoption of social media, have fanned the flames of misinformation. While traditional media have been a vector for Covid-19 misinformation, their role is at least matched by the effectiveness of social messengers like WhatsApp, social media such as Twitter, Tik-Tok and Facebook, and other Internet-based communication. Due to the effectiveness of social media to transport information created by billions of users, these new technologies helped enable an *infodemic* and subsequently *misinfodemic* accompanying the Covid-19 pandemic.

An infodemic occurs when too much information about a specific topic is spread in a short period of time via digital and traditional media, making it impossible to have control over it. Consequently, also a great deal of misinformation is shared rapidly "causing confusion and risk-taking behaviours that can harm health [create] mistrust in health authorities and undermine the public health response" (WHO 2022a). According to the Pan American Health Organization (2020) "misinformation" includes to false information meant to delude the audience. Thus, the *Covid-19 misinfodemic* refers to the combination of the fast and uncontrolled spread of false or misleading information about Covid-19. A major problem of this phenomenon is its coexistence with a pandemic situation, it can have severe negative effects on human health - physical and mental (PAHO 2020).

The spread of misinformation between countries and organizations can be unevenly distributed, as some are more successful in limiting the Covid-19 misinfodemic, while others struggle to achieve this aim. There are many reasons why some countries and social media companies might have been hit more than others. The differences in the policy responses by governments may explain some of the variations. For instance, some governments have engaged with community-based public healthcare networks, others have implemented community engagement and national risk communication plans, while some others have brought about regulatory action against social media platforms. In the course of the misinfodemic, social media companies have correspondingly designed and implemented their own policy responses to the spread of misinformation on their platforms.

Rarely have as many policy responses been implemented across policy fields and across countries and platforms as during the ongoing pandemic.[3] Even within the narrower scope of the misinfodemic, international organizations, such as the WHO, OECD or UNESCO, saw themselves called to the stage to advise and coordinate policy making processes in order to generate the best outcomes for development, health and human rights (among other aims). In this report, we apply a methodological framework designed by UNESCO to the wealth of cases of policy responses. Using the criteria of the framework to identify ten different categories of policy

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[2] Misinformation, for the purpose of this report, is defined as non-factual information, which is communicated, independently of whether this occurred intentionally or (often referred to as "disinformation"), negligently or unintentionally.

[3] For an overview of early policy responses see Cheng *et al*. (2020).

responses to Covid-19-related misinformation, we attempt a partial mapping of policy responses in order to draw generalizable conclusions.

The selection of seven country- and two social media platforms case studies is obviously exemplary, rather than exhaustive. Nonetheless, with the inclusion of salient cases, the aim of this report is to utilize the UNESCO framework for comparative analysis and to relate the empirical detail to other theoretical frameworks. Due to the great importance of digital communications and the Internet for the misinfodemic, also expressed in the policy responses, the theoretical frame chosen for this research report are theories from the field of Internet governance, specifically Santaniello's typology of Internet governance models.

The remainder of the research report is structured into a further seven sections. In section 2, we discuss the notion of policy responses to the Covid-19 misinfodemic, including the guidelines produced by international organizations to guide national policy making (and private sector decisions). Thereafter, section 3 outlines this report's methodological approach to mapping policy responses onto the UNESCO framework, whereas in section 4, we present our theoretical frame of analysis, based on Internet governance research. The following two sections provide readers with more empirical details about the diversity of misinfodemic policy responses. They entail case studies of nation states policy responses, including Armenia, Egypt, France, Hungary, New Zealand, Nigeria and Peru (section 5), and policy responses by Twitter and YouTube (section 6). Finally. the report provides a descriptive summary of the mapping (section 7) and a theory-centered discussion of the results from an Internet governance perspective (section 8). Overall, this research report illustrates and theoretically examines the diversity of policies without the pretension to put forward a general theory of misinformation policy responses.

2.   Policy Responses to the Covid-19 Misinfodemic

The Covid-19 pandemic has raised multiple social and economic challenges worldwide and it has been assumed by many people that our lives will never be the same again (Wang/Wang 2020). Unlike previous pandemics, the Covid-19 pandemic occurred at a time when the world has been globally connected through the Internet, thus exposing information about the virus to distortion as it spreads through the Internet. As Rosenberg et al. (2020) argue, the world's first social media pandemic is indeed not immune to the proliferation of misinformation. That is, the health crisis itself leads to the need for information dissemination as a response, but because of the uncertainty of this situation, a substantial amount of distorted information is being shared, too. Consequently, researchers were prompted to label this incorrect or misleading information as misinformation or disinformation.

On March 28, 2020, the Secretary-General of the United Nations tweeted on his personal Twitter account that "our common enemy is Covid-19, but our enemy is also an 'infodemic' of misinformation" (UN 2020). The Director-General of the World Health Organization also declared that Covid-19, which was classified as an epidemic at that time, was going through an 'infodemic' of misinformation (WHO 2020a). Misinformation has proliferated like the virus, in the format of inaccurate advice or statistics, with governments and other actors releasing skewed data and conspiracy theories. For example, there have been conspiracy theories linking the rollout of 5G communication technology to the spread of the pandemic to the extent that

telecommunications infrastructures are reported to have been attacked (Financial Times 2020). Hydroxychloroquine as a cure for the virus was also promoted worldwide, in fact the former US President Donald J. Trump supported this misinformation in a press conference addressing his country (Giles et al. 2020). Some misinformed people also died from drinking highly concentrated alcohol in the hope of disinfecting their bodies (Silk 2020).

2.1. International Organizations' Guidelines on Policy Responses

In response to the global pandemic, several international organizations have come up with frameworks that can help journalists, policy makers, public and private institutions to tackle the problem of misinformation by providing standardized processes of policy formulation. Amongst several international organizations, the frameworks published by the World Health Organization (WHO), the Organization for Economic Cooperation and Development (OECD), and the United Nations Educational Scientific and Cultural Organization (UNESCO) are highlighted in this report, due to their popularity and broad adoption.

2.1.1. World Health Organization

Founded in 1948, the WHO is a United Nations agency with 194 Member States that conducts its operations with collaboration from multiple stakeholders including governments, civil society, health workers, other international organizations, academic researchers and others. The organization's main goals are to promote health globally and to help vulnerable people, and to achieve these goals it promotes and applies science-based policies (WHO 2022a). Therefore, the WHO has been at the center of the fight against Covid-19 since its outbreak. As the WHO affirms that one of its main responsibilities is to "direct and coordinate the world's response to health emergencies" (WHO 2022), it was expected that the organization would propose a management framework to help curb this phenomenon.

Initially, as a response to the Covid-19 misinformation, the WHO member states passed an emergency Resolution titled WHA73.1[4] "Covid-19 Response" in May 2020. This then followed with a information hub which was sourced by the WHO Information Network for Epidemics (EPI-WIN). The WHO Information Networks composes the risk communication team of WHO, whose purpose is to provide up to date and accurate information and advice to whoever accesses their website in an 'easy-to-understand' way. The EPI-WIN page delivers information in many languages (English, Spanish, French and Portuguese) and brings content formulated from different perspectives since the Covid-19 disease affects the whole world (WHO 2020a). Lastly, the ideas gathered from experts in managing Covid-19, and the response from a webinar consultation with speakers and stakeholders alike, formed the basis for the information hub, whose main purpose is to serve as a guidance for governments and health institutions concerning the misinfodemic (WHO 2020a).

Throughout 2020, the WHO has further developed and updated its website on the Covid-19 infodemic, where the public has open access to see everything that the organization has been working on since the disease was announced internationally and later declared a pandemic by the WHO. One year after the Resolution WHA 73.1 passed, a number of WHO member states held the WHA74 conference titled "Strengthening WHO preparedness for and response to

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[4] WHA stands for World Health Assembly.

health emergencies"[5]. The resulting outcome document entails a list of the organization's learnings with regard to the Covid-19 pandemic in order to faster and more accurately respond to similar health situations in the future. It affirms once more the negative impact of misinformation, and the need to contain them. In addition, the WHA74 Resolution urges WHO member states and other international actors (including the civil society and the private sector) to act on the proliferation of inaccurate information in all forms of media, particularly digital media.

In September 2021, the organization released the "WHO competency framework: Building a response workforce to manage infodemics". This key framework aims to help health institutions and organizations to hire and train their personnel in how to deal with misinformation, especially those employees, whose roles can influence decision-making. According to the WHO (2022) this framework contains five workflows to provide infodemic responses along an "epidemic curve" and four "domains" pointing out which competencies, knowledge and skills are relevant for infodemic managers – and how such domains are further organized in the form of tasks. In addition, the WHO, in partnership with the US and Africa Centers for Disease Control and Prevention (Africa CDC) and others, like UNICEF, developed training booklets about infodemic management. By January 2022, the WHO has held three Infodemic Manager Trainings, whose purpose is to train key staff (mainly in leadership positions) to develop certain skills considered essential by the organization when it comes to infodemic management (WHO 2022).

2.1.2. Organisation for Economic Co-operation and Development

The OECD, founded in 1961, is an organization of 37 countries, who are generally high income or developed economies, which was established to create better policies that foster prosperity, equality and opportunity amongst its member countries. The organization has derived four key actions that governments and platforms can take to counter Covid-19 misinformation on platforms, namely: 1) supporting a multiplicity of independent fact-checking organizations; 2) ensuring human moderators are in place to complement technological solutions; 3) voluntarily issuing transparency reports about Covid-19 misinformation; and 4) improving users' media, digital and health literacy skills (OECD 2020). In addition, the organization created a page which comprises all its policy responses since 2020 and, in February 202, held an event called "Tackling Misinformation: Working Together to Build Global Vaccine Confidence and Support an Inclusive Recovery" hosted by the UK government. The goal was to address and promote good practice principles amongst government communication responses when it comes to misinformation. Compared to the WHO and the UNESCO, the OECD is relatively less invested in tackling the misinfodemic.

2.1.3. United Nations Educational Scientific and Cultural Organization

Early ideas of an international organization that would promote education in order to prevent future world wars began in 1942, when some Western European countries met at a conference with that purpose. In November 1945, a UN Conference for the establishment of an educational

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[5] The draft resolution was proposed by Albania, Australia, Belarus, Canada, Chile, Costa Rica, Dominican Republic, Egypt, Georgia, Iceland, Japan, Montenegro, Norway, Paraguay, Philippines, Qatar, Republic of Korea, Republic of Moldova, Rwanda, Singapore, Sudan, Switzerland, Thailand, Turkey, Ukraine, the UK and Northern Ireland, the US, Uruguay, Vanuatu, and Member States of the European Union.

and cultural organization (ECO/CONF) was held in London. Among the 44 countries present, it was decided that an organization should be created to foster the "intellectual and moral solidarity of mankind" and to prevent another world war (UNESCO 2022).

In order to build and support global peace, UNESCO promotes international cooperation in education, sciences and culture. One of its most recent and relevant programs has been focused on contributing to the achievement of the Sustainable Development Goals (SDGs) of the UN's 2030 Agenda. UNESCO has its "own" SDG, SDG 4, which covers many distinct aspects of education. For the organization, education "transforms lives" and thus, seeking to guide institutions, civil society and others, with accurate information, and to fight misinformation regarding Covid-19, UNESCO created two policy guides called "Disinfodemic: Deciphering COVID-19 disinformation" and "Disinfodemic: Dissecting responses to COVID-19 disinformation", also referred to as policy brief 1 and 2, respectively.

These UNESCO policy guides provide a framework to understand different policy responses to the Covid-19 misinfodemic. The first policy brief addresses multiple types of misinformation concerning Covid-19, distributed in four formats and presenting ten categories of response with freedom of expression around the world. As for the policy brief 2 UNESCO analyses critically ten types of policy response to the spread of misinformation about the virus. The report presents that the misinformation life cycle begins with production, then transmission, followed by reception and ending at the reproduction. With this second policy guide, UNESCO evaluates responses that can act in each stage of this life cycle by interrupting the production; filtering the misinformation during the transmission; helping to prevent the fake information reaching its target (like a vaccine would do, by preventing the disease spread) and finally, preempting re-circulation of that information.

3. Methodology: Mapping Infodemic Policy Responses

This research report uses UNESCO's policy brief 1, "Disinfodemic: Deciphering Covid-19 disinformation" as a frame to see policies being empirically applied by a group of countries and companies and their respective responses to Covid-19 misinformation. The group of countries includes Armenia, Egypt, France, Hungary, New Zealand, Nigeria and Peru. In addition, we analyzed Twitter and YouTube. For each of these cases, a brief case study was conducted. The sampling of cases occurred based on three criteria: global diversity, initial analysis showing significant or outstanding policy responses, and familiarity (including language abilities) of the researchers with the case. UNESCO's classification system was applied to responses between early 2020 and mid-2021.

According to the organization's report, fake information is often hidden among true facts and camouflages itself in familiar formats. Along with that, UNESCO's research has found that the deception focuses on "beliefs rather than reason, and feelings instead of deduction. They rely on prejudices, polarisation [...] and individuals' search for simple sense-making in the face of great complexity and change" (UNESCO 2020:5). As a result, the policy brief identified four main misinfodemic format types: (1) emotive narrative constructs and memes, which are

designed with strong emotional languages and some elements of truth, thus making it difficult to decipher; (2) fabricated websites and authoritative identities, which publish seemingly accurate information, e.g. bogus cases of Covid-19; (3) fraudulently altered, fabricated or decontextualized images and videos, evoking emotions and creating confusion through viral memes and stories; (4) disinformation infiltrators and orchestrated campaigns, aimed at sowing discord in online communities and achieving selfish purposes.

The policy guide goes further to outline a series of misinfodemic response, categorized according to the aims rather than the actors behind the response (e.g. NGO, government, internet communication companies, news media). Below, we present UNESCO's ten misinformation policy response (sub)categories:

Category 3.1 concerns the "responses that focus on identifying Covid-19 disinformation" and it contains two subcategories. *3.1.a, "monitoring and fact-checking responses"* and *3.1.b "investigative responses"*. The first comprises the role carried out by independent fact checking organizations, academics and civil society organizations. It relies predominantly on human judgements, rather than automation tools, thus mitigating the risk of infringement of the right to freedom of expression, which does not apply to opinions. The second subcategory goes further into understanding the purpose of disinformation campaigns, particularly the originators, the means and level of dissemination, involved communities and money that might have been involved in the campaign - this response requires more effort than simply fact-checking.

Category 3.2, refers to the "responses governing the production and distribution of Covid-19 misinformation". It also brings along two subcategories which enlightens the category in general. These are *3.2.a."legislative, pre-legislative, and policy responses"* and *3.2.b. "national and international counter-disinformation campaigns"*. The subcategory 3.2.a, covers laws and regulations by individual states aimed at preventing and punishing acts of Covid-19 misinformation. It also comprises the removal of instructions for internet communication companies. Additionally, it requires a high level of transparency since legitimate media companies could easily be caught in the net. 3.2.b, involves mobilizing official campaigns to counter Covid-19 misinformation, by spreading state approved information. It ranges from using local language to facilitate correct information spread, and actively debunk so-called "fake news" that are in circulation.

Category 3.3, named "responses to Covid-19 disinformation within production and distribution*"* comprises three other subcategories*.* To begin with*,* 3.3.a *"curatorial responses*" involves pointing internet users to correct sources of Covid-19 information. However, this is somewhat challenging for platforms with encryption, where users' rights have to be infringed to enable curation of posts. Similarly, *3.3.b "technical and algorithmic responses"* also deals with the use of automation and artificial intelligence to investigate and detect misinformation on the Internet. Carried on by social media and search engine companies, this helps to ramp up the identification and subsequently limit the spread of misinformation. *3.3.c, "economic responses"* is not so different from the

other subcategories mentioned above, deals with the response that targets money making ventures, who use fake news to quickly monetize their posts and accounts on social media. This response has majorly been in the form of publicizing the ban of fake news publishers and demonetization of Covid-19 related posts.

Category 3.4, "supporting the target audiences of disinformation" is the last broad category under UNESCO's policy brief 1 response. Primarily, *3.4.a "ethical and normative responses"* entails open condemnations of misinformation. Such responses include statements from trusted official authorities and have taken the form of speeches and articles that enjoin the public to shun the spread of fake news. *3.4.b, "educational responses"* directly focuses on improving the educational level of the public through journalistic and digital training. By equipping the public with digital verification skills, people can verify and debunk fake news by themselves. Such responses are being launched particularly by journalism oriented civil society organizations and the public service around the world. 3.4.c, "*empowerment and credibility labeling efforts*" is the final response. It complements educational responses as they focus on specific verification tools by providing reputable and trustworthy sources of information along with published information.

Having these categories in mind, we examined a chosen country or social media company's policy responses in order to classify these accordingly. Next to this practical categorization based on UNESCO's model, we also aimed to contextualize the fight against the Covid-19 misinfodemic by relating responses to different types of Internet governance. The next section outlines the theoretical framework we utilize to that end.

4. Theoretical Framework: Internet Governance and Covid-19 Misinfodemic Policy Responses

In order to make sense of the individual case studies to be examined, we turn to theory. A comprehensive theory of policy responses (or *governance*) of health misinformation is still lacking. Since the misinfodemic primarily occurs online, even if not entirely, we turn to the field of Internet governance. We are confident that Internet governance research and theory helps us to better understand the different approaches states and platform companies took since the onset of the Covid-19 misinfodemic.

The most comprehensive universally accepted conceptualization of the term "Internet governance" was developed as part of the World Summit of the Information Society (WSIS) between 2003 and 2005. The Working Group on Internet Governance, tasked by United Nations Secretary General Kofi Anan came with a definition that has since influenced both practice and scholarship: "Internet governance is the development and application by governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet" (Lahmann/Engelmann 2018; WGIG 2005). Internet governance concerns itself with different

layers of Internet technology, including the Internet's physical infrastructure, its logical infrastructure (domain name system, Internet protocol), the applications created to run on these infrastructures, and finally the content distributed to and from end users. While these layers are often interrelated, and may all to some degree be relevant for the misinfodemic, the primary layer of concern in this report is the content layer. If social media platforms are arguably most important for the spread of the misinfodemic, then platform governance specifically is also a relevant approach to solving the problem (*cf*. Gillespie 2018).

Internet governance is a contested transnational policy field which sees private companies, state actors, civil society, and technical experts vie for influence (*cf*. Mueller 2010; Bradshaw et al. 2014; Lahmann/Engelmann 2018). It should be emphasized that assigning the leading role exclusively to the "private sector" group is not considered to be a meaningful approach anymore (Lahmann/Engelmann 2018). Hence, nowadays it is those other two groups over which the debate is taking place: state and multistakeholder fora (Flonk et al. 2020; Lahmann/Engelmann 2018). For example, Madeline Carr's (2015) analysis of Internet governance predominantly focusses on states. Despite the fact that she recognizes that civil society and private business are to a certain degree involved in Internet governance, Carr states that national governments are still the ones who are in charge. Other scholars differ in their analysis. Robert J. Domanski (2013) demonstrates that multiple various actors govern Internet, hence hinting to the prevalence of the "multistakeholder" perspective in the field (*cf*. Hofmann et al. 2017). Interestingly, John Bowers and Jonathan L. Zittrain (2020) also show that multistakeholderism has been on the rise since 2010. Furthermore, Lahmann and Engelmann (2018) suggest that both "multistakeholder" and "state" paradigms of Internet governance prevail, but that they exist in parallel to each other in different geographical locations. In particular, the former can be found in the West, while the latter in the "rest" (cf. Flyverbom et al. 2019).

Bringing various models of Internet governance together, Mauro Santaniello (2021) offers a typology of Internet governance based in two dimensions: level of inclusiveness and level of policy coercion, in which the first concerns the amount of participants involved in the process or a given Internet governance policy venue, and the second refers to the enforceability of these policies. The author argues these two dimensions provide a clear portrayal of political ingredients at play within the Internet governance field and present coherent nexuses existing among the models. Thus, the four models of Internet governance presented by Santaniello are: sovereigntism (high coercion and low inclusion); constitutionalism (high coercion and high inclusion); neoliberalism (low coercion and low inclusion); and multistakeholderism (low coercion and high inclusion). Santaniello states that in different periods of time there were different models that dominated the field and where we stand now with regard to this issue is a matter of debate. The neoliberal model to Internet governance has been in existence since the beginning of the field and it used to be much stronger. Multistakeholder approaches, particularly centering around the Internet Governance Forum and later the Internet Corporation for Assigned Names and Numbers (ICANN) became important during and after the WSIS (Mueller 2010). Next to sovereigntism, which has been on the rise recently (Santaniello 2021), constitutionalism is a model of Internet increasingly salient. This *digital constitutionalism* can be described as an "ideology that adapts the values of contemporary constitutionalism to the digital society" (Celeste 2019, p. 77). Where it relates to actual proto-constitutional documents, so-called Internet bills of rights, digital constitutionalism constitutes "a common term

connecting a constellation of initiatives that seek to articulate a set of political rights, governance norms, and limitations on the exercise of power on the Internet" (Redeker et al. 2018, p. 301).

This typology can also contribute to studying the governance of Covid-19 misinformation. In particular, by using Santaniello's typology we can conduct more structured and in-depth analyses of misinformation policy responses of countries or companies: we can differentiate better between the types of responses and consequently, provide a more comprehensive embedding of often ad-hoc policy responses into a larger framework of different (often competing) models of Internet governance. Misinformation governance is a much newer and narrower field than Internet governance, still lacking a strong theoretical governance discourse (beyond the platform governance discourse). It is noteworthy that addressing this issue in a comprehensive manner is of utmost importance, given the multifaceted threats posed by fake news to democracy, public order, etc. (Bowers/Zittrain 2020). Using Santaniello's typology to map policy responses by both states and platforms contributes to a deeper theoretical understanding of the landscape of global policy responses to misinformation.

The UNESCO framework in itself appears not sufficient to map policy responses because it does not reflect the quality of inclusion of various social actors in decision-making. For example, if country A and country B passed a law according to which, those who disseminate fake news may be fined, it means that we can group them together in UNESCO's "3.2.a. legislative, pre-legislative, and policy responses" category. However, these countries differ in what they call fake news: the government of country A labels as fake any information that it deems damaging for its reputation, while the authorities of country B follow the opinions of experts from various organizations and states to designate the status of "fake" to the particular news piece. Therefore, Santaniello's typology can help us to make a distinction between these two countries and locate them in different groups: country A in "sovereigntism" and country B in "constitutionalism".

5. Case Studies: Countries

Already by mid-2020, many countries had developed discernible policy responses to the Covid-19 pandemic. To help in the mapping of policy responses during the Covid-19 misinfodemic as referred to by UNESCO, this report analyses policy responses in seven countries. The cases take into consideration governmental responses and general information on how the countries were affected by the pandemic between mid-2020 and early 2022. These country cases were chosen by the authors based on their familiarity with them and their particular research interests.

5.1. Armenia
Armenia has been severely affected by the Covid-19 pandemic, and for several months was among the countries with the highest prevalence of the virus (Kazaryan et al. 2020). Like other countries in the world, Armenia had also been faced with Covid-19-related infodemic as described by the WHO "an overabundance of information – some accurate and some not – that

makes it hard for people to find trustworthy sources and reliable guidance when they need it" (WHO 2020a). In Armenia, the Covid-19 misinformation are mostly about nine key themes underlined in the policy brief from UNESCO.

On March 1, 2020, Armenia confirmed its first case of Covid-19, and shortly after, several local publications began sharing constant misinformation; fake news, and conspiracy theories that were rife in the media space. Some websites and social networks started to spread the "truthful" origins and how the virus was progressing, and moreover, a list of traditional therapies and drugs that are supposedly capable of preventing or even curing Covid-19 (Melikyan 2020). Therefore, on the 16 March 2020, the Armenian government decided to institute the State of Emergency, also known as SoE report (EVN Reports 2020).

In this report, one of the articles stated that it was announced by the government that people and mass media outlets when sharing information on the Internet regarding Covid-19 should use only the official ones, in addition, most of their publications cannot contradict official information. Those who share unverified information or fake news were punished with expensive fines and up to jail time. The government explained that these restrictions were necessary to avoid any aggression towards Covid-19's patients or panic among the population (OSCE 2020). Meanwhile, the Armenian police had already demanded to remove or edit several articles which contain information that can be classified as "causing public panic" linked to the coronavirus outbreak according to the government (Balasanyan 2020a and 2020b; Khulian 2020) and applied expensive fines to some journalists and media outlets. These kinds of policies perfectly fit into the UNESCO 3.2a category which includes legislative, pre-legislative, and policy responses. As described in UNESCO's report, this type of response ranges from interventions that criminalize Covid-19 misinformation on one side of the spectrum, to increasing the supply of public health information on the other, and less commonly, support for independent media.

This category is the most restricted one and produces many implications for journalism and media freedom. Therefore, it was criticized both in Armenia and in the international organizations invoking the right to freedom of expression and information. At the local level, ten journalistic organizations, led by the Yerevan Press Club (2020), issued a joint statement calling on the government and the commandant's office to "immediately declare invalid" the restrictions on the work of the media, supported by the opposition parties and civil society.

At the international level, the Organization for Security and Co-operation in Europe (OSCE) Representative on Freedom of the Media, Harlem Désir, underlined how "the law should not impede the work of journalists and their ability to report on the pandemic. Publishing only information provided by the authorities is a very restrictive measure which would limit freedom of the media and access to information disproportionately." (OSCE 2020). Under pressure, the government decided to lift the controversial article of the SoE on 13 April 2020. It also decided to monitor the media and in the case of a hike of the quantity of misinformation, the decision would be reversed (EVN Report 2020b). In UNESCO's framework, this initiative is an example of 3.1.a category that involves fact-checking and *monitoring* responses through the analysis of information channels (e.g., social media, messaging apps, news media, websites).

Furthermore, Daniel Ioannisyan, Coordinator of the Union of Informed Citizens NGO, gave a speech on 'right to freedom of speech and information'. He stated: "in Armenia, we clearly see that almost all sources that spread misinformation about Covid-19 and vaccination issues also

spread a number of other non-Covid-19-related pieces of narratives that are favorable for the official Kremlin" (Union of Informed Citizens 2020). Likewise, according to an investigation by the British news website openDemocracy, the Medmedia.am website has been used to promote false information about Covid-19. It was launched in 2019 with the help of the US State Department following Armenia's 2018 'velvet revolution' with the aim of promoting democracy. In its most famous articles, the Covid-19 pandemic is defined as "fake", and Armenians are called on to "refuse all potential vaccination programs" (Hovhannisyan 2020). The government reacted by debunking the main and most-spread misinformation through the new unified information center at the press service (Voskerchyan 2020). This type of activity should be considered part of two different UNESCO categories: the mentioned 3.1a regarding fact-checking and monitoring responses and the 3.4a "Ethical and normative" category. The government through its official communication channels provides the correct piece of information while discrediting fake news and in general misinformation.

In conclusion, the government of Armenia has responded both to the Covid-19 health crisis and its following misinfodemic. Its actions were perceived by civil society and the international actors as sometimes very restrictive and non-inclusive. In some countries, policymakers took advantage of the extraordinary situation to make propaganda against certain political or ethnic groups, increasing the acts of hate speech and sometimes reducing the rights of the population, such as the freedom of expression and free press. This could arguably be said about the case of Armenia.

5.2. Egypt

Egypt was the first country hit by the Covid-19 Pandemic in Africa. The first official case was confirmed on 14 February 2020 (Egypt Today 2020). As of February 2022, Egypt had over 23,000 official covid deaths (WHO 2022b). To control the spread of the virus, the country imposed a curfew starting on 25 March 2020, stopped all flights on 19 March 2020 and closed schools and universities (Mourad/Lewis 2020). The measures were initially planned until mid-April and were gradually lifted in June 2020 (Awadalla 2020).

Egypt has taken strong action against fake news in general and against information contrary to that given by official media about the Covid-19 pandemic. Already before the pandemic, in March 2019, it was announced that the highest Media Regulator in Egypt, the Supreme Council for Media Regulation (SCMR), can block websites and social media accounts without a court order and can also fine up to 250,000 Egyptian pounds ($14,400) if the website or account has spread misinformation. News outlets can be fined up to the equivalent of $298,000 (Magdy 2019). Social media users are subjected to these rules if they exceed 5,000 followers. This measure was not only targeted at misinformation, but rather it works as a general regulation for a host of topics such as inciting and violating the law, public morals, or racism. The new fines and punishments were criticized as unconstitutional and in violation of the basic freedoms of the press, they were regarded as censorship by the journalist's union as the offenses they could be punished for were vague (Magdy 2019). On March 28, 2020 it was added that intentionally spreading rumors about Covid-19 could be fined up to E£20,000 and result in imprisonment for up to five years (Ahram Online 2020). In a new epidemics law passed in November 2021 these figures were lowered to E£10,000 and one year in prison (Rashwan 2021).

In early April 2020, the SCMR stated they had already blocked dozens of accounts and websites because of pandemic related false information. They did not publish which websites specifically were blocked or how many exactly, but the news website *Huna Aden* and the website of the news report *El Gomhoria El Youm* received notice that they would be blocked for six months on 15 March (Reporters Without Borders 2020b). Shortly before the SCMR had also blocked six Facebook and Twitter accounts, without any more details.

According to Amnesty International, at least twelve journalists were detained by the Egyptian Police because of Covid-19 related misinformation allegations against them (AP NEWS 2020b). Among them is Atef Hasballah, who was detained under suspicion of joining a terrorist organization after doubting the official Covid-19 case count of the health ministry on Facebook (AP NEWS 2020a). Another journalist detained on fake news and terrorism charges because of an appearance on the Qatari TV-channel Al-Jazeera, Mohamed Monir, died in jail from Covid-19 (AP NEWS 2020c). There have been calls by human rights groups to release political prisoners and jailed journalists, which the Egyptian government has not heeded. Instead, four protestors demonstrating for the release of political prisoners were detained, as well as a journalist reporting on Covid-19 spreading in prisons (BBC 2021; Middle East Eye 2020). The demand for release has been supported by the UN High Commissioner for Human Rights, who also advised the country to act against misinformation by providing clear information instead of punishing critics (Colville 2020). 31 UN member states also expressed concern over the human rights and press freedom situation in Egypt and urged the government to stop acting against journalists, human rights advocates, and others (Kauppi 2021).

Misinformation allegations and penalties in Egypt came mostly after criticism of the government's handling of the pandemic, few to none were related to other misinformation surrounding the pandemic, such as alleged cures or claims about how the virus infects, or where it came from. Egypt's state-owned media has been praising the government for their "unprecedented" handling of the pandemic (Shea 2020). While other sources of news have criticized it for being too slow in applying measures such as a lockdown and not having enough medical supplies. Then, punishing and silencing critics while using their outlets to publish more positive news. These allegations give weight to claims that the Egyptian government is using the pretext of misinformation to control the narrative and censor those who speak against the government.

Egypt's response to criticism and what they refer to as "fake news" and their treatment of journalists during the pandemic has been criticized by Amnesty International, Journalists without Borders, the Committee to Protect Journalists, the countries journalist's union, and other freedom/ rights groups (AP NEWS 2020b; Magdy 2019). Before the pandemic, Egypt has already been criticized for its lack of journalistic freedom. It ranks as 166 out of 180 countries on the Reporters Sans Frontiers (RSF) World Press Freedom Index, being one of the world's biggest jailers of journalists (Reporters Without Borders 2020c).

Egypt's response against Covid-19 related fake news mostly falls into the category 3.2.a of the different categories set by the UNESCO (Posetti/Bontcheva 2020). The focus seems to be on punishing distributors of Covid-19 misinformation with high fines and imprisonment, with the potential of scaring of people who consider spreading misinformation or even information critical of the government. There have been little educational, informational or fact checking responses to fake news around the pandemic.

5.3. France

By late March 2021, around 93,000 people in France died from Covid-19, making the country one of the first in Europe with the highest number of confirmed fatal cases. The country faced regional and national lockdowns, curfews, closed universities, restaurants and shops. Despite harsh restrictions and multiple medical resources, the virus continued to spread and damage people's health and pockets because of business closing.

Covid-19 also nourished misinformation platforms with a plethora of conspiracy theories. Misinformation is an issue that the government and the civil society are trying to address in different manners. According to the Reporters Without Frontiers, France ranks 34 out of 180 in the 2020 World Press Freedom Index (Reporters Without Borders 2020a). Consequently, the measures undertaken by the public authorities to limit misinformation were more likely to be curatorial rather than punitive.

Firstly, on 11 March 2020, Clevy (a platform that provides chatbox to companies), and CSML (an open-source programming language dedicated to building chatbots), launched a chatbot in order to deal with uncertainties related to Covid-19. Anyone can ask questions anonymously about Covid-19 and access different features. For example, rules to follow in the case of a movement in the territory or a general information quiz about the disease's myths and false information. This Chatbot is available on covidbot.fr, Facebook and Workplace. The information that users receive from the chatbot is taken from verified sources, such as WHO, Ministry of Health and the Institut Pasteur. This chatbot is relevant to access other platforms who provide verified Covid-19 information. However, the answers to some questions are no longer valid in 2022. On 8 March 2022, when questioned about Covid-19 vaccine, the Chatbot answered – incorrectly – that no vaccine has been developed yet. France counts four authorized vaccines: those distributed by Pfizer (Comirnaty), Moderna, AstraZeneca (Vaxzevria) and Johnson & Johnson (Janssen). Hence, this policy response is paradoxically a source of information and misinformation because necessary information updates are not being made by the administrators (Visa Schengen 2022) According to UNESCO's categorisation of policy responses using a virtual anonymous agent in order to remediate Covid-19 related misinformation is technical and algorithmic response (3.3.b).

Secondly, in the beginning of March 2020, the journalist Julien Cazeneuve had an idea to bring together journalists and form a team in order to decrypt and verify questionable information (Floc'h et al. 2020). This project is now called Journalistes Solitaires (JS) and it is run by the five members of the decision-making committee. However, JS members are not the only ones to generate content, civil society can also contribute by filing a form with relevant information (Open Newsroom) on a particular subject (Journalistes Solidaires 2020). In 2022, the platform continues its activity (Durand et al. 2022) JS can be considered a monitoring and fact-checking policy response to Covid-19 misinformation according to UNESCO's categorization '3.1.a' because a variety of civil society members (journalists, readers, translators etc.) are mobilizing in order to debunk false information.

Furthermore, on 22 June 2020 Sorbonne University announced a collaboration with Kap Code in order to detect fake news on Twitter, especially about Covid-19. Sorbonne Center of Artificial Intelligence, together with CELSA Sorbonne Université looked for possibilities to tackle misinformation on social media with the support of artificial intelligence and communication studies. Ultimately, they initiated a discussion with the start-up Kap Code in order to find a

more efficient solution to this problem. The team has planned to carefully analyze and categorize tweets in order to determine the incorrect information based on its form. This project could allow the creation of future predictive models capable of detecting misinformation in case of another health crisis (Sorbonne Université 2020). This collaboration was translated into the creation of Epilogue: a platform aiming to centralize Covid-19 related information and analysis in order to limit misinformation propagation (Epilogue 2022). In UNESCO's categorisation of policy responses about Covid 19 misinformation the use of artificial intelligence to detect false information about the disease on Twitter is a technical and algorithmic response (3.3b).

In addition to the abovementioned policies, on 30 April 2020, the French government provided one its most controversial responses against the spread of misinformation on Covid-19, when a platform called "Desinfox Coronavirus" was launched. This platform appeared on the government website and it collected a plethora of articles about Covid-19. The press secretary Sibeth Ndiaye announced on Twitter that this platform will be deleted once the crisis will be over (Alemagna 2020). However, the platform was shut down five days after it was launched. Indeed, the Desinfox Coronavirus has raised criticism from the French media, with journalists accusing the government of being partial and taking information only from a selected list of sources. The SNJ (the National Union of Journalists) lodged an urgent appeal before the Council State in order to immediately stop the breach of pluralism in the expression of opinions and the neutrality of public authorities. Following this, the Minister of Culture Franck Riester announced the shutdown of the platform (Lemonde.fr 2020). In the UNESCO categorisation, the Desinfox Coronavirus is part of the National and international counter-disinformation category (3.2.b).

Moreover, the publication of the French pseudo-documentary "Hold-Up" pretending to uncover numerous facts about Covid-19, received backlash from the media and initiated a series of articles aiming to bring light to numerous lies in the movie. Liberation.fr particularly, took this mission seriously and published numerous articles, including one analyzing every minute of the movie and pointing out the different false news (Libération.fr 2020). Such a response can be categorised as 3.1b in UNESCO's framework.

Finally, on 16 December 2020, the French Ministry of Higher Education Research and Innovation launched a platform named "Désintox: la parole à la science" (Désintox: the word to the science) dedicated to decipher Covid-19 related misinformation (Ministère de l'enseignement supérieur de la recherche et de l'innovation 2020a). The goal is to regroup the work of notorious research institutes (e.g. France's National Scientific Research Center) and inform the public with verified and impartial information. According to UNESCO's categorisation, this type of response corresponds to the sub-category 3.2.b.

5.4. Hungary

In the freedom of expression realm, Hungary has experienced difficulties even before the Covid-19 outbreak (Human Rights Watch 2021; ECPMF 2020). These challenges have only been amplified by the approach the country has taken in handling the spread of the virus. In March 2020, Hungary gained a lot of global attention and criticism from human rights organizations and from the President of the European Commission, Ursula von der Leyen, due to its Covid-19 misinformation related restrictions on the freedom of speech (Botsford 2020). Additionally, the European Center for Press and Media Freedom (ECPMF) criticized Hungary's

approach and stated that the country does not comply with European legal standards (ECPMF 2020).

Freedom of expression has been a challenge in Hungary since before Covid-19 because the government controls most of the country's media outlets and the pandemic did not make publishing independent information any easier. In July 2020 Szabolcs Dull, the then editor-in-chief of *Index*, one of the biggest independent outlets in Hungary was fired due to a financial takeover, and replaced by someone linked to the Prime Minister, Victor Orbán and his government (Human Rights Watch 2021). Furthermore, *Klubrádió*, which is an independent radio station, had its broadcasting frequency restricted starting from February 2021. This decision was taken by the Media Council in September 2020, a regulatory body whose members are appointed by the country's ruling party (Human Rights Watch 2021). Additionally, the government task force holds daily press conferences, during which it favors pro-government journalists and even ignores critical questions and comments (Wiseman 2020). Not only journalists or broadcasters, but even the medical staff and other professionals have faced restrictions on the ability to share facts about the country's capabilities in dealing with the pandemic, as these would undermine the government (Spike 2020). This approach can be located within the UNESCO's category 3.2.a. "legislative, pre-legislative, and policy responses", as it punishes independent journalism, reporting or posting which might damage the government's image.

At the beginning of the pandemic, the Hungarian government announced a state of emergency, or state of danger as noted in the Constitution, with a decree Nr. 40/2020 on 11 March 2020. Some weeks later, on March 30, the Parliament passed the Act XII of 2020 (Polyák 2020), which confirmed the state of emergency and gave the Prime Minister Victor Orbán the ultimate power to bypass the Parliament (Wiseman 2020). Problematically, the Act did not define false information, as it vaguely stated that "(…) any conduct of publishing or spreading a false or distorted statement which endangers or details the successfulness of the defense during a state of danger is punishable (…)" (Polyák 2020), leaving 'false or distorted statements' or 'successfulness of defense' free for interpretation. This means that the government had the power to deem any information false or misleading. The spread of such information would be punished with up to five years of imprisonment (Polyák 2020; Deutsche Welle 2020a).

The state of emergency and the Act XII had serious consequences and put a lot of pressure on journalism making it difficult to freely publish an opinion. It was noted that any news that did not comply with the state given information would be categorized as fake and would be fined. This put a clear restriction on the access to information and freedom of speech of not just journalists but the whole country. Additionally, the deadlines for FOI (Freedom of Information) were postponed to 90 days, meaning that if and when journalists requested publicly held information, they would have to wait up to three months (instead of just one) to gain access (Wiseman 2020). The decree was in place until 16 June 2020, when the Hungarian Parliament voted to end the state of emergency (ECPMF 2020). By the time it ended, 134 criminal investigations were launched by the police due to the spread of supposed misinformation. Most of these investigations targeted people criticizing the government and its Covid-19 approach on social media (Human Rights Watch 2021). This policy response is an ideal example of the UNESCO category 3.2.a. "legislative, pre-legislative, and policy responses".

The Government of Hungary released a Covid-19 website in 2020, in order to inform the population about the spread of the virus. The website and its content have since been adjusted to

the development of the pandemic. The page has information on Covid-19 measures, preventative measures, and vaccinations. Furthermore, it provides statistics on how many people have been vaccinated, how many are currently infected, how many have been infected in total, and the number of Covid-19 related deaths in the country. Most importantly, the page provides a link leading to a vaccination registration (Government of Hungary 2022). Although this website does not fight misinformation, it can be seen as a direct contact point on getting information about the pandemic, and more importantly, on vaccines. This approach could be placed in UNESCO category 3.3.a. "curatorial responses".

Within the country's vaccination campaign in 2021, the Prime Minister turned his back on the EU's authorized vaccines and decided to use those provided by China and Russia. Hungarians are rather skeptical about getting vaccinated, as according to a *Eurobarometer* poll in January 2021, in which only 49% of those interviewed would get vaccinated at all (Thorpe 2021). At the same time, there seems to be even more mistrust regarding the Russian and Chinese vaccines – according to a *Pulzus* survey in January 2021, less than two percent of those interviewed would take them[6]. This mistrust is argued to result from a lack of information provided regarding the possible side-effects or the development of the vaccines. Furthermore, there are still many unanswered questions regarding the country's strategy. Orbán and the pro-government journalists have not published information about the government's mistakes regarding the vaccination campaign and have even gone as far as to silence anyone criticizing Orbán's strategy (Frenyó 2021). There does not seem to be a valid UNESCO category for this approach, but it could be argued that the category 3.1.a. "monitoring and fact-checking responses" would fit the best. However, the government and its loyal journalists do not carry out fact-checking in order to detect 'misleading' information, but rather to detect any outlet or person spreading information which goes against the government or the Prime Minister.

To conclude, we can see that Hungary's approach to fight against Covid-19 misinformation has been to turn down the spread of any independent information, allowing only government approved and controlled information to reach the public. It becomes apparent that the measures taken restrict free journalism and the freedom of speech of not only journalists but the whole population. However, this approach is not a new method for the government but builds on the already restricted access to independent information and freedom of expression that it perpetuates.

5.5. New Zealand

Throughout the Covid-19 outbreak, New Zealand has been receiving positive media coverage internationally for its successful handling of the pandemic and for being able to stop the spread of the virus (Friedman 2020). The country responded quickly to the fast spread and was able to make a short return to a somewhat normal life in June 2020, as there were no new cases within 17 days (Jones 2020). Within two years of the pandemic, New Zealand has confirmed a total of 18,460 cases and 53 deaths (as of 10 February 2022) (WHO 2022c). Seeing what was going on around the world, the Prime Minister Jacinda Ardern decided to impose a complete

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[6] However, according to data from February 4, 2022, out of the total 15.02 million doses administered, most (8.31 million) have been Pfizer/BioNTech, followed by Sinopharm (2.29 million) and Sputnik V (1.81 million) (Our World in Data 2022), which shows that the Chinese and Russian vaccines are among the more popular ones in the country.

lockdown on 25 March 2020 to prevent the massive spread of the virus (Phillips et al. 2020). Overall, she has been receiving a lot of positive media coverage on how she has dealt with the virus and its consequences.

On the same night of imposing the national lockdown, Jacinda Ardern turned to social media to share a live message to spread kindness and loving words with the nation, reassuring and informing the people about the situation (Phillips et al. 2020). Since then, she has often used this method to address the public directly and to answer any open questions. To include more in-depth knowledge in her chats, she started to host live question and answer sessions with different experts to answer more specific questions posed by the public (Cave 2020). Ardern's approach can be located in the UNESCO category 3.4.b. "educational responses". However, as further waves of infections hit the country, Ardern's strategy shifted slightly. At this point she does not turn to social media so much anymore, but she holds regular press conferences, where she is often seen urging people not to fall for misinformation and to trust the experts, as the country's director-general of health Dr. Ashley Bloomfield. She has also asked the citizens to keep an eye on the government-based Covid-19 website (Andelane 2020), which provides the latest news and updates regarding the virus and further information about misinformation and scams (New Zealand Government 2021; New Zealand Government 2022c). This approach is an example of the UNESCO category 3.4.c. "empowering and credibility labeling efforts".

Furthermore, New Zealand's health minister Chris Hipkins has also taken on the issue of misinformation and addressed emerging rumors at the end of 2020 in his public briefing and pleaded people to trust the science (Cook 2020). His approach fits within the UNESCO category 3.4.a, "ethical and normative responses", which includes statements or such by political leaders in order to combat the spread of misinformation. Moreover, public health expert Siouxsie Wiles and Toby Morris created comic illustrations and published them on Twitter, which inform about Covid-19 and explains how to tackle misinformation (Strickland 2020). This approach is an example of the category 3.4.b. "educational responses". Moreover, journalist David Farrier gathered examples of misinformation and published them online to show the readers the typical misleading messages circling around in order to build more awareness for this issue (Strickland 2020) – this can be detected within the categories 3.4.b. "educational responses" and 3.4.c. "empowerment and credibility labeling efforts".

Within the pandemic and the misinformation, the Pacific communities are more vulnerable to fall prey to misinformation and conspiracy theories. Additionally, a lot of the activists spreading conspiracy theories are from Pasifika and Māori communities (1 News 2020). The Pacific regions and communities are more unprotected against misinformation, as most of the reliable information is offered in English (at least at the beginning of the pandemic), resulting in certain groups being missed in the process of tackling misinformation, due to language barriers. In order to fight this, the government announced an awareness package of $17 million on 7 April, 2020 to support health providers and campaigns in Pacific languages (Radio New Zealand 2020). Such a measure fits to the UNESCO categories 3.3.a. "curatorial responses" and 3.4.c. "empowerment and credibility labeling efforts".

As already mentioned, the government of New Zealand launched a specific website regarding Covid-19 at the beginning of the outbreak. The page is dedicated to give first-hand government information and to keep everyone updated about the country's news. Importantly, this page is available in almost 40 different languages, providing help and advice to a wide audience,

including those speaking the Pacific languages, and adjusted regarding the virus' development. Once the vaccination campaign began, the page was also updated with relevant information regarding it. Hence, this website provides its audience with all the important information on how to stay safe, on the Alert Level statuses of regions, videos of the latest media and vaccine media conferences and daily updates regarding Covid-19 cases (New Zealand Government 2022c).

Although the website's homepage has the most important news, there is also a section regarding misinformation and scams that are easy to access. This gives advice on how and where to get the right information, how to detect scams and how to make a complaint when coming across misleading information (New Zealand Government 2021). Under each part there are links leading to further websites to read more about the topics. This approach regarding the website can be located within the UNESCO categories 3.3.a. "curatorial responses" and 3.4.c. "empowerment and credibility labeling efforts".

As the vaccination campaign against Covid-19 started, misinformation regarding this subject also began to spread and New Zealanders showed some hesitance and mistrust regarding the vaccines (Dahmen 2021). The earlier mentioned website was thus updated with a separate section regarding the vaccines - it now includes clear information on boosters, Covid-19 certificated, possible vaccine side effects, and more specific information for disabled people. It also provides a link for vaccine and booster registration and further information on vaccinating children (New Zealand Government 2022a). Furthermore, the government included a section where it linked free posters, flyers, social media tiles, videos, email signatures and screensavers about the Covid-19 vaccination campaign. All these either include facts, encouraging messages or further information about the vaccines. Most importantly, many of these aim to fight against the most popular types of misinformation, which are circling on the web. It is also important to note that some of the flyers are available in 23 languages, providing accessibility for the non-English speaking population. The government also included posters about how to recognize misinformation, which have trustworthy websites linked to them (New Zealand Government 2022b). This fits the UNESCO categories 3.3.a. "curatorial responses" and 3.4.c. "empowering and credibility labeling efforts".

To conclude, New Zealand's government reacted quickly to the spread of the virus, misinformation and to the mistrust surrounding the vaccines. Prime Minister Jacinda Ardern and other public and political figures have put in the effort to stay transparent and provide companionship during these hard times. All in all, the country has had a mixed tactic, taking on curational, empowering and educational approaches in order to minimize the spread of misinformation and to make sure that people are in the position to detect unreliable information.

5.6. Nigeria

Nigeria is a democratic nation in West Africa with over 250 ethnic groups, which translates into a broad variety of languages, cultures and religions (Igiede 2013). This nature of the country naturally gives room for informal media outlets besides the traditional formal radio and TV stations, due to its decentralized structure. While the presence of social media in the last few years have attempted to blur the line between small clusters of communities in media, independent social media influencers have also had the chance to build and grow their target audience, which is sometimes factored by a cultural denominator. Hence, private and public social

media influencers also known as content creators in the social media space are easily able to generate and propagate news, whether true or false, targeted at their own audience.

Such decentralized information availability in Nigeria, has given room for the easy spread of misinformation, with 85 million people, i.e. 42% of the country's total population on the Internet and 27 million of those using social media. The remaining 58% of its population is subject to distorted information as a result of the information gap created by the unavailability of direct information to this proportion. A huge focus is therefore placed on WhatsApp and Facebook who own 94% and 87% share respectively of the internet users in Nigeria (Digital 2020). Misinformation in times of Covid-19 is not the first fight the country has had to face with regards to major health issues, in 2014, Nigeria was affected by the Ebola virus that killed at least 10,000 people in West Africa (CDC 2019). The spread of incorrect information led to the death of at least two persons, therefore the health authorities had to take a stance in fighting against any form of misinformation (Ngozika et al. 2020).

The country's Minister of Information and Culture, Lai Mohammed in the Vanguard News-report of 3 April 2020 pointed that a spike in misinformation is distracting the government in the fight against Covid-19 (Urowayino 2020). The rumors started by attacking the credibility of the virus itself, as there was news that the virus cannot affect Africans, while some said that the virus was nonexistent, some religious leaders proclaimed that their members are resistant to the virus, as it was only a scheme of the devil against unbelievers. As more evidence of deaths due to Covid-19 unfolded, the rumors swayed into ensuring citizens that there are herbal cures ranging from the use of lime, salty water, and herbs to fight against the virus (Oluwadamilola/Okeke 2020).

As part of efforts by the Nigerian government to combat social media misinformation, the government partnered with Facebook in 2019 to halt the spread of fake information during the general elections (Bakare 2020), since then, there have been strong debates in the parliament about the "anti-social media bill" which is officially known as the *Protection from Internet Falsehoods and Manipulation and Other Related Matters Bill 2019*. The bill was introduced by the Nigerian senate in September 2019, with the attempt to criminalize the use of social media in peddling false or malicious information. Although there was strong opposition to the bill by several civil rights organizations, including Amnesty International and Human Rights Watch, the bill passed its second reading, and was supported by prominent Nigerians. Though not passed into law yet, the bill shows the level of intolerance the government has concerning misinformation in Nigeria.

To begin with, the creation of the Nigeria Centre for Disease Control Act of 2018 (Abdulrauf 2020) prior to the Covid-19 pandemic had conferred and instilled information functions to the Nigeria Centre for Disease Control (NCDC) and to regulate an epidemic that affects the health of the people. The government, through the NCDC, established strong relations with fact checking organizations to ensure the debunking and correction of fake news while furnishing the people with facts about the pandemic. The partnership with Facebook is facilitated through Africa's first independent fact-checking platform known as Africa Check, using a tool called InfoFinder, which has a Nigerian platform known as DUBAWA a stage where policymakers, researchers, journalists and the general public can search for facts from a collection of selected facts is made available by providing a WhatsApp help desk (Facebook Journalism Project 2020). Facebook and WhatsApp users in Nigeria can also send messages to a telephone number

to receive back authentic and verified information. This initiative of the government fits into UNESCOs first response that is 3.1 which focuses on identifying Covid-19 misinformation. 3.1a of this focuses on fact checking responses while 3.1b also deals with investigative responses which the NCDC does on behalf of the government.

Another initiative worth noting is that of "Know Covid-19 Nigeria". This is a project that is undertaken by young professional Nigerians from many different jobs or positions in society using graphics and comics as a means of informing, educating and debunking misinformation. They do this by identifying news reports, articles and general data which contains misinformation and provide facts from the World Health Organization against them. They also have an official website with credible data on the state of the pandemic coupled with relevant statistics on the federal states (Olasupo 2020). This initiative when put under the scope of the UNESCO framework on deciphering Covid-19 disinformation falls under the 3.1.a, as it involves fact-checking and monitoring responses.

Additionally, the NCDC and UNICEF have also collaborated on efforts in Nigeria to fight the misinfodemic by launching a chatbot. This SMS-based interactive chatbot is free and can be accessed directly without using the internet. It provides a rapid response on Covid-19 updates from credible sources. Specifically, anyone in Nigeria can simply send "Coronavirus" to 24453 and receive immediate response from the chatbot (UNICEF Nigeria, 2020). The presence of the chatbot can be classified under the response governing the production and distribution of disinformation and most specifically, it can be explained with the 3.2.b; national and international counter-misinformation campaigns. Furthermore, as part of its mandate, the NCDC provides information to the public through multiple platforms on diseases and public health events. For example, it uses its social media accounts on Twitter (@NCDCgov) and Facebook to serve as a means of providing the people with credible information on Covid-19 while discrediting misinformation (Goethe-Institut Nigeria 2020). In UNESCO's framework these policy responses are covered by 3.4.a; ethical and normative responses and 3.4.b; educational responses.

Finally, the government and the World Health Organization (WHO) office in Nigeria have trained national journalists, focusing on the principles of public health reporting that include information accuracy, data sourcing and verification. The training also aimed to help change people's behavior in the face of Covid-19 (World Health Organization, Nigeria 2020). This can be considered a perfect example of 3.4.c; empowerment and credibility labeling efforts from UNESCO's framework.

In conclusion, the government of Nigeria has swiftly responded to the Covid-19 misinformation trend by developing on learning experiences from the previous Ebola epidemic in the country. It has combined efforts with local and international fact checkers to carry out fact checking responses. It has also carried out investigative responses by collaborating with DUBAWA, the country's partnership with UNICEF and NCDC can be seen as a national and international counter-misinformation campaign, by using the social media the country was able to engage in ethical, normative and educational responses. Lastly, through the collaboration with WHO the government has been able to empower labeling efforts against misinformation. All of these efforts fall under the UNESCO framework in one way or another, and in general have been able to help the country efficiently battle the fight against Covid-19 misinformation.

5.7. Peru

Peru has been one of the worst-hit countries in Latin America since the outbreak of the Covid-19 pandemic. Interestingly, Peru was one of the first countries who started imposing various types of strict measures to curb the spread of the virus (Bel/Horton 2020; Collyns 2020). In spite of this, unfortunately, Covid-19 has spread widely across the country.

Just like in the case of other countries, Peru has not been an exception when it comes to the Covid-related misinfodemic: this Latin American state has also faced the wave of misinformation since the virus came into play (Alvarez-Risco et al. 2020). There have been various types of fake news on agenda: some of them exacerbated the number of Peruvians who died or were going to die because of the pandemic, some dealt with spreading incorrect information regarding the health conditions of government officials, others concerned the fake cures etc. (Alvarez-Risco et al. 2020; Fogel 2020; Goodman/Carmichael 2020). Equally important is the fact that, more recently, one of the most significant targets of falsifications is the topic of Covid vaccines (Mudge/Weber 2020). As a result, various measures were implemented, aimed at addressing the misinfodemic in Peru.

For instance, the Peruvian government has been actively using various digital platforms – like Twitter, governmental websites etc. – to refute different Covid-related news deemed false. (Alvarez-Risco et al. 2020; Mudge/Weber 2020). In other words, when misinformation is spread, various officials (the President, the Minister of Health etc.) react to it by discrediting the given piece of information and by providing an authentic version of the news through their respective official websites, social media pages etc. Such type of activity can be located in 3.4.a. "ethical and normative" category of responses to misinformation presented by UNESCO.

Another interesting measure that contributes to fighting the pandemic-related fake news is an initiative by a group of independent academics, who created a handbook tailored for Peru that brings together facts regarding the Covid-19 based on numerous diverse official sources, including the WHO (Alvarez-Risco et al. 2020). It also shares various revealed fake news surrounding this topic. In terms of UNESCO's categorization, this response fits into the 3.3.a. "curatorial responses".

A campaign "Covid-19 does not kill by itself – let us not be accomplices" promoted by the Peruvian government is also worth mentioning (Andina 2020). This initiative is aimed at raising public awareness regarding a wide range of topics concerning the virus through spreading facts about the threats posed by the pandemic and the recommendations on how these dangers can be at least minimized. The government uses different ways of communication, like TV, radio, social media etc. to convey the messages (Reeves 2020; Andina 2020). With respect to UNESCO's framework, this initiative is an example of its 3.2.b. "national and international counter-disinformation campaigns" category.

Furthermore, there are two measures that fit into UNESCO's 3.4.b. "educational responses" group: first is related to the government's cooperation with the US-based non-governmental, non-profit global health organization Partners In Health (PIH); and the second is about an information hotline set up by the government in January 2021 (Gestión 2021). In the first case, the Ministry of Health of Peru collaborates with PIH, supporting the organization's efforts of combating pandemic in Peru through, among others, providing its population with accurate information about different aspects of the virus (Partners In Health 2020; Socios En Salud n.d.). As for the hotline, because of the global spread of fake news that 5G networks cause Covid-

19, some of the communities in Peru damaged communications infrastructure (Gestión 2021). In an attempt to solve this problem, in January 2021 the Ministry of Transport and Communications launched a hotline through which every Peruvian can receive multifaceted trustworthy information about the functioning of telecommunication antennas in general, and about the 5G networks in particular.

However, not all the measures directed against fake news in Peru are of just informative character. For instance, there was a case when Amílcar Huancahuari - a chief of the group responsible for combatting the pandemic in Ayacucho region - was fired by the authorities of the region for promoting chlorine dioxide as a cure against Covid-19 (Infosalus 2020; Leigh 2020). The idea of chlorine dioxide as an effective cure against the virus is recognised by health authorities around the world as erroneous, hence the doctor was dismissed for disseminating fake news (Leigh 2020; BBC 2020). This is a clear example of 3.2.a. "legislative, pre-legislative, and policy responses".

Finally, we can find even harsher measures rather than just firing, which also belong to the 3.2.a. category. For example, in April 2020 the Ministry of Justice and Human Rights stated that those who create or spread misinformation may end up in prison for between two and sixyears (Alvarez-Risco et al. 2020). The Ministry reiterated this point via Twitter on February 9, 2021, claiming that these measures are in line with the Articles 438 and 315 (amendment of 2002) of the Criminal Code of 1991 (Criminal Code 1991; Ministry of Justice and Human Rights, 2021).

6. Case Studies: Social Media Platforms

Due to the essential role that social media platforms play when it comes to the spread of fast (and not always accurate) information, they are at the forefront of the fight against the misinfodemic. Platform companies created policy responses to avoid their communication platforms becoming a catalyst for the spread of misinformation. Among those platforms that did, the authors went to analyze those cases they are most familiar with and had a particular research interest in.

6.1. Twitter

Twitter, as one of the biggest social media platforms today, was ahead of the situation and early on in the pandemic began to take action against the problem of false and misleading news or media. As expected, the company has had to deal with a lot of misinformation since then. In the past, Twitter used tools against fake news, which were expanded and applied together with other institutions, in order to provide the correct information. In the beginning of 2020, the social media platform began to block accounts and Tweets containing misinformation. One of the approaches taken by Twitter was to roll out a labeling system that flags Tweets with fake or misleading media and in more severe cases hides them from view under a message that the specific Tweet contains false information. Users can click that warning away to see the Tweet (Roth/Achuthan 2020). The labels focused on "synthetic or manipulated" media that is shared to deceive or cause harm. Users are also warned if they interact with a labeled Tweet,

e.g. by trying to retweet or like it. When judging if a Tweet should be labeled or removed, the company affirms that they also take the level of perceived risk caused by the Tweet into account, which can result in Tweets by more prominent users receiving different treatment as more people could see them and be harmed by misinformation.

In 2020, the social media platform also began labeling Tweets written by state-related officials, institutions, and media of the state. The program began its testing phase, which was only applied to the permanent members of the UN Security Council, in the summer of 2020 and expanded to include the members of the G7 along with most of the states that Twitter has previously attributed information operations to (Twitter Support 2021). The labels were attached to high-ranking officials and the accounts of institutions. This is supposed to make possible motivations behind Tweets by the labeled accounts more obvious to the readers (Twitter Support 2020). While the effort is not directly aimed at Covid-19 misinformation, it could help, as both Russia and China were accused by the EU of spreading Covid-19 related and other misinformation online (Bodoni 2020). In a similar vein, but with different intentions, Twitter is cooperating with local health institutions such as the British NHS to "blue-checkmark" as many official accounts such as hospitals to make them seem more trustworthy and to defend against imposters, which is the blue checkmarks' original purpose (Crouch 2020; Chu/McDonald 2020).

An example of how relevant it is to take measures as labeling in order to control the spread of misinformation was what happened about "reopening" the US. It seems that 45-60 percent of accounts spreading and amplifying misinformation arguing for the reopening of America were bots (Hao 2020). They were especially effective when retweeting posts collectively, making certain Tweets more prominent on the platform. Twitter responded by expanding its labeling and removing effort with a focus on Covid-19 related misinformation (Derella/@Vijaya 2020). They introduced new labels and warning messages that are supposed to direct users to the correct information about the topic at hand (Matthews 2020). Tweets containing false news or similar about the Covid-19 pandemic, such as alleged cures, harmful treatments or denial of health authorities' recommendations will be marked to be removed by the platform. This also extends to misinformation about the Covid-19 vaccines (Twitter Safety 2020). Twitter will not delete these Tweets themselves, instead the account behind the Tweets will be blocked from tweeting until they have removed their Tweet, or they have successfully appealed against the removal (Matthews 2020). Tweets to be removed are hidden from public view. Repeatedly offending accounts will be banned, first temporarily and then permanently, if they continue (Twitter Safety 2021).

To promote correct information about the pandemic Twitter has modified its search function to show only official, correct information and does not show content from the platform first. The relevant search prompts are constantly updated and include typical misspellings. The information is fitted for the user's location through partnerships with over 70 countries (Chu/McDonald 2020). Additionally, the social media platform has also given "Ads for Good" credits to nonprofit organizations dedicated to fact-checking. They have partnered with the Spanish organization maldita.es and malditabulo and the Taiwan Fact Checking Center, among others. Through the Ad's for good system nonprofits can get benefits like promoted accounts and Tweets on the platform to reach more people (Twitter Public Policy 2020).

Among the efforts against fake news, Twitter focuses on removing or labeling the Tweets containing it. This places most of their actions into the category 3.3.a on the types of responses to fake news proposed by UNESCO (Posetti/Bontcheva 2020). Banning accounts from the platform would fall into 3.2.a category as it is 'action against the producers and distributors of the misinformation'. However, as Twitter is an online platform, one can argue that removing someone from the platform is also a type of 'curational' response. Twitter has also contributed in providing correct information on the pandemic by linking sites to the WHO website. Educational responses are type 3.4.b in UNESCO's categorization, though counter-disinformation campaigns (like linking to correct information directly under misinforming Tweets) falls under 3.2.b.

As Twitter refrains from directly declaring statements as false they do not directly engage in fact checking (Matthews 2020). To deal with the many Tweets, the social media platform uses algorithms for almost all action against misinformation at some point, thus it also falls into 3.3.b of the types of responses, algorithmic and technical responses. Thus, Twitters' response falls mainly into 3.3 and 3.4, though the company and platform does not fit perfectly into the typology and could often fit in one or another category.

6.2. Youtube

As Covid-19 spread rapidly around the world, so did misinformation and increased pressure on YouTube, an American online video sharing platform with over 2 billion users. Before the pandemic, YouTube was already known as a major source of misinformation and finding a solution in its role of disseminating non-factual content became an essential strategy (Oi-Yee Li et al. 2020). Videos on YouTube often spread through links via other social media and messaging platforms such as Facebook and WhatsApp (Oi-Yee Li et al. 2020; Echtermann 2020). A study done by Heidi Oi-Yee Li et al. (2020) in March 2020 on the platform's most popular videos in the English language regarding the keywords 'coronavirus' and 'Covid-19', revealed that about 25 percent of those contained non-factual information. Together, at that point in time, they accounted for about 62 million views. Furthermore, an unrepresentative but exemplary study done by German fact checking website CORRECTIV concluded that about 46 percent of all links containing misinformation sent to and reviewed by them lead to YouTube (Echtermann 2020). These findings are congruent with a poll published by the State Institute for Media of North-Rhine-Westphalia (Germany) which found out that over 80 percent of respondents come across misinformation regarding Covid-19 while surfing the web (Landesanstalt für Medien NRW 2020).

Appealing to their responsibilities in an open letter, multiple health experts including Germany's leading virologist Christian Drosten demanded from the major tech-companies to join the fight against the 'infodemic' during the Covid-19 pandemic. The platforms should act against the flood of misinformation and the health crisis caused by it (Echtermann 2020). YouTube created multiple strategies to cope with this challenge, the simplest one was to remove videos containing misinformation regarding Covid-19. On this matter, the social media platform updated its guidelines to fit the issue of the pandemic. Hence, in case a video contains information contradicting the WHO and/or local authorities' information about Covid-19, it

will be a violation of users guidelines. Especially on the topics of Covid-19 prevention, diagnosis, transmission, and treatment.

According to the YouTube Help guidelines, videos may be excluded from this new policy "if that content includes context that gives equal or greater weight to countervailing views from local health authorities […] or to medical or scientific consensus." Furthermore, content is allowed "if the purpose of the content is to condemn or dispute misinformation that violates our policies." (YouTube Help 2020) If a user violates the new guideline for the first time, he or she receives a warning. Second time offenders will receive a strike with the third strike leading to the channel being "terminated" (YouTube Help 2020). In respect to UNESCO's categorization of policy responses, this measure falls under subcategory 3.3.b "technical and algorithmic responses", due to the mechanics of removal. Though, this is done automatically or by humans is not specified. Nevertheless, it still falls under "technical".

Another strategy of YouTube to prevent the spread of misinformation, is to install an information box underneath any video with the main topic of Covid-19. This information box is linked to the local health authorities' website to provide valid information to the users and is also found in YouTube's search box, when searching for videos on the topic of Covid-19 (Wojcicki 2020). The information box was highly criticized by the collective as they claim that it gives a sort of validation for content that does not provide factual-information and is still on the platform. As users see the name of the authority, they may be led into thinking that the information given is true (Echtermann 2020).

Additionally, YouTube started to prioritize videos by official sources and news outlets when searching for videos about Covid-19 or related topics such as 'corona'. This is another strategy to provide users with information the website has deemed as useful and informative (Neubert/Gehmlich 2020). Also contributing to this strategy is the free advertisement space YouTube is providing to organizations in the health field such as the WHO (Wojcicki 2020). These three strategies correlate with both subcategories 3.3.a. "curatorial responses" and 3.4.c "empowerment and credibility labeling efforts". This is since these mechanisms "point users to authoritative sources of public health information" and support "[…] the target audience of Covid-19 disinformation campaigns", which in the case of YouTube is the user. Furthermore, they are also "providing links to trustworthy sources of information."

Lastly, to lower the incentive for content creators on the platform to publish videos that include misinformation, YouTube also demonetized videos on the topic of the virus for a short time. This step belongs to category 3.3.c. economic Response". As now, such videos fall under the 'sensible content' category and only creators who can provide a correct self-certification, additionally to different news partners are able to profit from said videos (Wojcicki 2020). This sparked some controversy among the creators since the demonetization was done by algorithm making 'YouTubers' afraid to miss out on potential profits for wrongful demonetization (VidIQ 2020). In addition, YouTube's CEO Susan Wojcicki appeals to the community and the strength of the community on her blog post from March 2020, thanking everyone for contributing to the platform's positive environment (Wojcicki 2020).

7. Summary of Case Studies

The cases in this report come with a great diversity of actors, initiatives and developments over almost two years, since early 2020. The attempt has been made in this report to provide a categorization of policy responses according to the subcategories created by UNESCO. For a visual summary of the categorization of the case studies explored in this report, see Table 1. The table shows which categories and subcategories of the UNESCO policy responses were implemented across seven countries and the two selected social media platforms.

Case	Categories									
	Identifying Covid-19 disinformation		Focus on the *production and distribution* of disinformation		Responses *within production and distribution* of disinformation			*Supporting* the target audiences of disinformation		
	3.1 a	3.1 b	3.2 a	3.2 b	3.3 a	3.3 b	3.3 c	3.4 a	3.4 b	3.4 c
Armenia	●		●					●		
Egypt			●							
France	●	●		●		●				
Hungary	●		●		●					
New Zealand					●			●	●	●
Nigeria	●	●		●				●	●	
Peru			●	●	●			●	●	
Twitter			●	●	●				●	
YouTube					●		●			●

Table 1: Summary of country and social media case studies

From the table, we can infer that a few categories are more popular than others, as is the case for subcategories 3.2a and 3.3a, "legislative, pre-legislative, and policy responses" and "curatorial responses", respectively. On the other hand, subcategories 3.3b, "technical and algorithmic responses" and 3.3c, "economic responses" where the least applied between the nine cases. Technical and algorithmic responses were applied only by France through a chatbot, that is regularly updated with information from verified sources and the economic responses by YouTube when it demonetized videos about the virus for a short period. The company was highly criticized by content creators who had their videos demonetized by the platform at the beginning of 2020 (Alexander 2020). It is interesting to point out that category 3.4c, "empowerment and credibility labeling efforts" was only applied by New Zealand, for instance when the government released an "awareness package" in April 2020 to support health providers and

campaigns in Pacific languages, since English is not their main language. Another policy within the 3.4c subcategory was the attitude of a journalist from New Zealand who gathered examples of false information and published them online to show the readers typical examples of misleading information circulating.

Armenia, Egypt, and Hungary have been accused, mainly by journalists, of restricting the freedom of expression of the media. Their governments have applied subcategories 3.1a and 3.2a. These categories are in fact the ones that aim to monitor and verify Internet responses related to Covid-19, and that recommend governments to take legal measures, such as fines and imprisonment in case of spreading misinformation. The focus of these subcategories is to address the issue of misinformation through punitive action and by controlling the dissemination of misleading content. However, when it comes to governments where citizens and the media do not fully enjoy freedom of expression and their leaders use such measures for political purposes, such policy responses may come under justifiable scrutiny.

The implementation of Covid-19 misinformation policy responses for outside purposes and to stifle free expression are problematic. For such reasons, UNESCO emphasizes educational measures and information rather than a punitive approach, aligning with its mission which is to contribute to "peace, the eradication of poverty, [...] and intercultural dialogue *through education, the sciences* [...] *and information*" (UNESCO 2022). Thus, accordingly, the categories in group 3.4, mainly subcategories 3.4a "ethical and normative responses" and 3.4b "educational responses" should be prioritized whenever possible. For instance, the governments of New Zealand (highly praised by the international media in the treatment of the pandemic from the beginning), Nigeria and Peru share a more education-focussed approach to tackling Covid-19 misinformation in mid-2020, by applying these subcategories. The goal of such policy guidelines should not be to control the media, but rather to educate the population by guiding people to the correct sources, which are health experts and serious journalism, which will criticize the government in case it takes wrong actions.

8. Conclusion: Digital Sovereigntism on the Rise?

Beyond the classification into the different categories and subcategories of the UNESCO framework and in order to visually demonstrate how Santaniello's typology could be applied this case, Table 2 maps the case studies presented in this report (countries and social media platforms) onto the four ideal-typical models of Internet governance. This analysis was conducted entirely based on what was presented in each case study in this article. By applying the theory to the case, we not only show the strengths and limitations of the theoretical framework - this process also helps us understand each case study from a higher-level perspective, thus going beyond the policy-level classifications (and their aggregations) possible with the UNESCO framework.

		Inclusiveness	
		High	Low
Coercion	High	Constitutionalism: Nigeria	Sovereigntism: Armenia, Egypt, Hungary, Peru, Twitter, YouTube
	Low	Multistakeholderism: France, New Zealand	Neoliberalism: none

Table 2: Santaniello's typology applied to Covid-19 misinfodemic policy responses

Constitutionalism is the model of Internet governance that is based on higher levels of inclusiveness and coercion simultaneously. Interestingly, constitutional models are often associated with the digital policies of the European Union, with its strong rights-based approach and willingness to shape the digital economy through effective legislation, as in the case of the General Data Protection Regulation (GDPR). Our case studies show that with regard to the fights against Covid-19 misinformation, Nigeria is a champion of digital constitutionalism. This might be a surprise given the country's relatively low rank in the Rule of Law Index: in 2021, Nigeria ranked 121 out of 139 countries included (World Justice Project 2022). However, given the narrow scope of this study, different results are entirely plausible given concrete sets of policies. In Nigeria, there are many actors actively participating in the Internet that are very influential in Nigeria's society, with a special emphasis on content creators. During the pandemic, these creators have shared much information with their targeted audience which sometimes constituted Covid-19-related misinformation. As a result, the government alone at some times and with partnerships at other times, decided to act against the false information. Aligned with Santaniello's idea that "all people should participate" in (digital) constitutionalism, Nigeria's government trained journalists, worked together with Facebook and Twitter, facilitated proper information arriving to the public via social media working in partnership with international institutions like UNICEF, etc. A proposed bill (*Nigeria's Protection from Internet Falsehood and Manipulation Bill 2019*), which would arguably "reduce future socio-economic opportunities that the Internet could offer for Nigeria by undermining its security and trustworthiness, and by limiting global access to information by Nigerian citizens, cutting them off from realities of international relevance" (Mabika & Ogu 2022), has so far not been passed. However, Twitter, a means by which citizens access information about the Covid-19 pandemic - among other things - has been blocked in Nigeria for seven months after a disagreement about a Tweet by President Muhammadu Buhari (Maclean 2022).
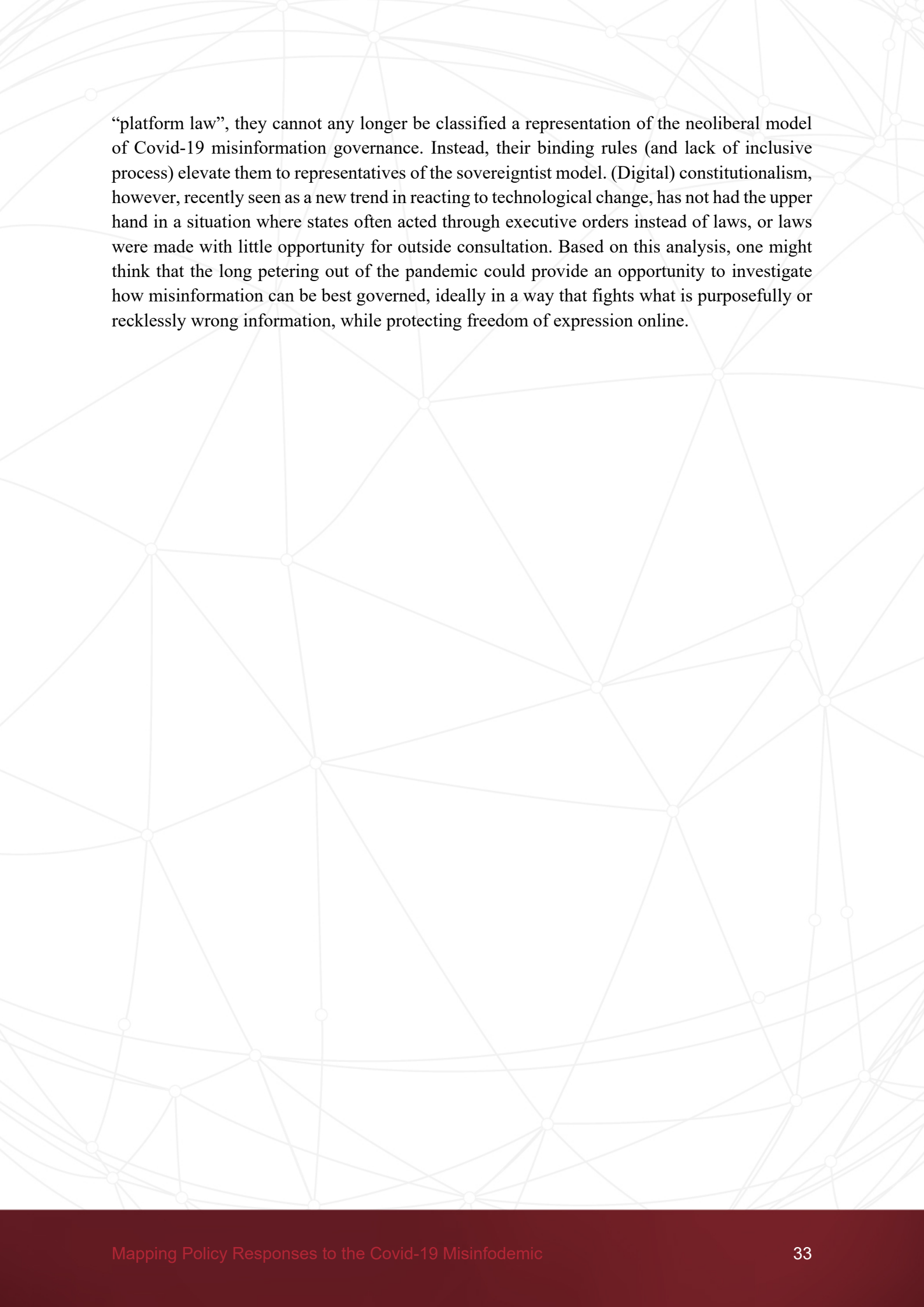
Based on our analysis of the case studies of France and New Zealand demonstrate that policy responses can follow the Internet governance model of multistakeholderism. This model shows a lower level of coercion, but a high level of inclusiveness. It is said that in both countries there were many actors working in partnership with the government or individually, and developing online solutions to fight misinformation, like chatbots (France) and comic illustrations being shared via Twitter created by public health experts (New Zealand). Interestingly, the French government launched a website informing about Covid-19 and was criticized. Differently from

other countries that follow a sovereigntist approach, France took in consideration the criticism and shut down the platform. Regarding the level of coercion, there were no elements of strong coercion being discussed in these two cases, at least not in response to the Covid-19 misinfodemic.

Many countries and the two social media platforms analyzed in this article can be considered expressions of a sovereigntist model of Covid-19 misinformation governance. The levels of coercion and inclusiveness are not necessarily the same among the members of the group, but based on the available information, they seem to share a tendency of low inclusiveness and high coercion. It can be argued that, in the case of some of these countries (Armenia, Egypt and Hungary), the sovereigntist model was negatively applied, since it has restricted freedom of expression, however, in the case of Peru, for example, the government, while being less inclusive, acted in a less antidemocratic way - showing the range of expressions of the sovereigntist model. In Armenia, Egypt and Hungary, the government was the only official actor entitled to share information about Covid-19 and to punish those who shared anything contrary to it. With high levels of coercion, in Armenia whoever shared information not verified by the government would be punished with fines and possible imprisonment. Similarly in Egypt and Hungary, in which the national governments are also the dominant actors in these countries' Covid-19 misinformation governance. Peru can be considered an expression of the sovereigntist model because the national government is the main actor to fight misinformation and to provide accurate information for their people. However, the Peruvian government did not demonstrate an outright censoring behavior towards the media. For example, the government allowed an initiative of academics that developed a handbook that brings together fact-checked information from diverse sources, including WHO. Additionally, Peru showed a high level of coercion because a doctor was fired by Peruvian authorities due to the promotion of Covid-19 misinformation (considered as so not only by the government, but also other health authorities).

Based on our analysis, Twitter and YouTube also follow a sovereigntist model because as companies, their social media guidelines are, in many ways, like public policies for countries, representing "platform law" (Kaye 2019). Both these companies have developed new regulations to fight against misinformation. For instance, they filter the content that is published in their platforms and decide to flag it as dangerous (akin to legally binding law that applies a punishment to certain utterances) or they are even allowed to expel a user of their platforms if the regulation is not being properly followed. When doing so, they lacked broad involvement of those they govern through their regulations.

A country or company that most resembles a neoliberalist model of Covid-19 misinformation governance with reference to Santaniello has not been identified in this report. However, this might very be due to a methodological issue after all. Specifically, due to the criteria for inclusion of a case relating to significant policy responses (that could be analyzed), it was unlikely that cases could be included that were characterized by a low level of bindingness and a low level of inclusion.

Concludingly, we can say that indeed sovereigntism played an important role in the response to the Covid-19 misinfodemic. Santaniello (2021) points to new vigor in the development of sovereigntist and constitutionalist models of Internet governance. Based on our non-representative sample, we can show that indeed the former seems to be a crucial element in countries and, arguably, in social media companies as well. Since the latter are developing what is effectively

"platform law", they cannot any longer be classified a representation of the neoliberal model of Covid-19 misinformation governance. Instead, their binding rules (and lack of inclusive process) elevate them to representatives of the sovereigntist model. (Digital) constitutionalism, however, recently seen as a new trend in reacting to technological change, has not had the upper hand in a situation where states often acted through executive orders instead of laws, or laws were made with little opportunity for outside consultation. Based on this analysis, one might think that the long petering out of the pandemic could provide an opportunity to investigate how misinformation can be best governed, ideally in a way that fights what is purposefully or recklessly wrong information, while protecting freedom of expression online.

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