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# **“Do as I say but not as I do”: Influence of political leaders’ populist communication styles on public adherence in a crisis using the global case of COVID-19 movement restrictions**

## **ABSTRACT**

This paper explores the influence of political leaders’ populist communication styles on public adherence to government policies regarding COVID-19 containment. We adopt a mixed-methods approach that combines: theory building with a nested multicase study design for Study 1 and an empirical study in a natural setting for Study 2. Based on the results from Studies 1 and 2, we develop two propositions that we further explain theoretically: (P1) countries with political leaders associated with engaging or intimate populist communication styles (i.e., the UK, Canada, Australia, Singapore, and Ireland) exhibit better public adherence to their governments’ COVID-19 movement restrictions than do countries with political leaders associated with communication styles that combine the champion of the people and engaging styles (i.e., the US); (P2) the country whose political leader is associated with a combination of engaging and intimate populist communication styles (i.e., Singapore) exhibits better public adherence to the government’s COVID-19 movement restrictions than do countries whose political leaders adopted solely engaging or solely intimate styles, namely, the UK, Canada, Australia, and Ireland. This paper contributes to the research on political leadership in crises and populist political communication.

**Keywords:** Populist communication, Political leadership, Social media, Crisis management, COVID-19

## **1. Introduction**

Political leadership is essential to managing complex and high-stakes global problems requiring solutions that may be hindered by public resistance to collective actions [5]. For example, during the COVID-19 outbreak, political leaders, together with public health experts worldwide, attempted to provide valuable advice to the public about necessary collective efforts, such as continuous adherence to new government policies and restrictions on movement between regions and cities, to effectively manage this health crisis [51]. The authorities played a central role in persuading the public to adhere to COVID-19 prevention measures, although these were deemed costly in terms of the emotional toll of quarantining and social distancing [27].

Paradoxically, the greatest barrier to the reinforcement of these preventative measures typically originates

from political motives. For example, the Trump administration in the White House consistently countered the rhetoric of public health experts and downplayed the health risks of COVID-19. On March 4, 2020, then-President Trump asserted that COVID-19 was like the flu; two days later, he falsely claimed that the situation in Italy was improving and that the US was handling the crisis much better than other developed countries. As late as March 15, 2020, with reported cases rising rapidly, Trump maintained that the crisis within the US was under control [27]. Related to this, the current paper examines the influence of politicians' populist communication styles on public adherence to government policies for COVID-19 containment.

Social media plays an important role in crisis management, especially in terms of delivering information, communicating with the public, and (re)establishing public confidence in government-led crisis management efforts [45, 53, 54]. This is especially important because the general public tends to struggle to find helpful information to follow during a crisis, which was especially the case during the COVID-19 pandemic [e.g., 30]. Social media platforms are accessible to most of the public in a given country; thus, they generate massive data and can have a meaningful influence on public engagement [5, 44] and partially help overcome disparities in technology adoption by socially vulnerable populations (e.g., racial and ethnic minorities, people who are socially isolated or with disabilities, older adults, and children), as was a key factor during COVID-19 [cf. 20]. Due to the “distributed, non-hierarchical, and democratic” [13, p. 93] nature of Twitter as a medium, political leaders can use tweets as “digital soundbites” to reach wider audiences. Hence, social media platforms are considered the “embodiment of populism” [12, p. 1312]. A key issue, however, is just how accurate and helpful such information is and if the communication style used matters during a crisis like COVID-19.

Analysis of the communication styles employed by political leaders is a valuable conceptual tool for exploring the political realm [e.g., 4, 11, 14, 34, 40]. Thus, we adopt the populist political communication style framework of Bracciale and Martella [12] as the theoretical lens to analyze political leaders' Twitter posts and to explain their populist political communication styles during their management of the COVID-19 crisis. Based on the communication-centered perspective, Bracciale and Martella [12] identified four populist political communication styles: (1) *engaging* (positive and nonaggressive; aiming at engaging supporters on political issues); (2) *intimate* (positive and personalized; focusing on building nonpolitical discussions around shared emotions

and aspects of private life); (3) *champion of the people* (negative and aggressive; aiming to build political narratives around simplification, position taking, and taboo-breaking); and (3) *man of the street* (negative and aggressive; aiming to legitimize a political leader as a “man in front of the people” through the use of vulgar language and the exploitation of fear and current news).

To date, research on political leadership in crisis and the use of social media for crisis management has focused on (1) conceptualizing, identifying, and examining key factors and their influences on political leaders’ ability to successfully manage a crisis and (2) investigating the information-sharing behaviors of governments, political leaders, or the public on social media in single-country settings. Related research on populist political communication [e.g., 4, 14, 33] focused on investigating the impact on (1) public engagement, (2) public receptivity, (3) voters’ attitudes toward gender equality in politics, (4) truth contestation, and (5) proliferation of political ideology. So far, only a few comparative studies [e.g., 18, 26, 38] have attempted to understand political leaders’ use of social media for crisis management; however, no study has empirically examined the role of populist political communication styles in crisis management. Addressing this gap is crucial in considering the outsized “social media bully pulpit” that political leaders have, especially in times of crisis, as exemplified by Trump’s use of Twitter during the preliminary stages of the COVID-19 pandemic.

Based on the populist political communication style framework [12], we employ a mixed-methods approach in two studies. Study 1 identifies the populist communication styles of six political leaders in six countries using inductive and deductive thematic analyses of their COVID-19-related Twitter posts. We comparatively examine the cases of the United Kingdom (UK) and Boris Johnson, Canada and Justin Trudeau, Australia and Scott Morrison, Singapore and Lee Hsien Loong, Ireland and Micheál Martin, and the US and Donald Trump from January 2020 to July 2020. Study 2 investigates the moderating effect of political leaders’ populist communication styles on the relationship between government policies for COVID-19 containment and public movement by conducting a regression analysis of panel data from Google’s COVID-19 Community Mobility Reports (GCCMR) and Oxford’s COVID-19 Government Response Tracker (OxCGRT). We further develop propositions linking political leaders’ communication styles and public adherence decisions, implying that certain populist communication styles are more suitable for social media crisis communication media than others. We

theorize that countries with political leaders associated with the *engaging* and *intimate* or a combination of both populist communication styles exhibit better public adherence to the government's COVID-19 movement restrictions than countries whose political leaders are associated with a combination of the *champion of the people* and *engaging* styles. We also posit that countries with political leaders associated with a combination of the *engaging* and *intimate* styles exhibit better public adherence to the government's COVID-19 movement restrictions than countries whose political leaders adopted solely the *engaging* or *intimate* styles.

Our research makes two key contributions to the literature. First, we contribute to the research on political leadership in crises by shedding light on the more effective and suitable populist communication styles for social media crisis communication. We do so by being the first to conduct a comparative study of political leaders from multiple countries to examine the role of their populist communication styles in crisis management, particularly in terms of public adherence to COVID-19 movement restrictions. Our results provide valuable insights for political leaders who are preparing to manage the next crisis. Second, we contribute to the research on populist political communication by undertaking a comparative case study with a two-staged analysis—within-case and cross-case—of political leaders and their tweets from January to July 2020. Doing so can help us understand the dominant and effective populist political communication styles associated with COVID-19 crisis management.

## **2. Theoretical Background**

To identify the research opportunities that our study addresses, we review the published research on political leadership in crisis and the use of social media for crisis management. To establish our theoretical lens for analyzing political leaders' use of social media for crisis management, we also review the literature on populist communication styles.

### ***2.1. Political Leadership in Crisis***

There are three main streams of research on political leadership in crisis (refer to Table A1 in Appendix A for details on the literature review). The first [e.g., 7, 8, 9] is conceptual in nature and focuses on developing frameworks for the analysis and assessment of political leaders' crisis-management skills and performances in the pre- and post-crisis periods. The second stream [e.g., 6, 17, 31] focuses on empirically investigating four key aspects of political leaders' managing a crisis: (1) their abilities to prioritize needs, select a team of qualified

crisis-management experts, and execute a crisis-management plan; (2) their willingness to coordinate international partners to assemble a collective crisis response; (3) their ability to sustain domestic political support during a crisis period; and (4) their use of charismatic language to help others cope with a crisis. The third research stream [e.g., 10, 16, 48] focuses on other aspects of political leadership, such as gender, decision to impose lockdowns, proximity of reelections, and public confidence, and their influences on crisis management.

## ***2.2. Social Media Use for Crisis Management***

There are three main streams of research on the use of social media for crisis management (refer to Table A1 in Appendix A for details on the literature review). The first stream [e.g., 1, 15, 36] uses content analysis to study governments' use of social media to communicate crisis-related information and its effects on public behaviors. The second stream [e.g., 19, 26, 27] conducts a content analysis of the political leaders' official social media accounts to explain their crisis management activities and approaches (i.e., lowballing a crisis, political partisanship, and political parties' consensus for crisis management), as well as the associated influence on public behaviors, such as noncompliance with preventative government measures. For example, President Jair Bolsonaro of Brazil opposed the adoption of social distancing measures, an attitude he clearly conveyed in his social media posts during the pre-election campaign. Such behavior encouraged many of his supporters to disregard preventative measures; in fact, some of the pro-Bolsonaro federal districts did not implement any social distancing measures [1]. The third stream [e.g., 24, 35, 36] examines the general public's use of social media to share crisis-related information, including tweets and retweets of situation-specific events, to avoid crisis consequences while coping with a crisis, including wearing protective masks and avoiding COVID-19 hotspots. For example, Gharavi [24] investigated the variation in Twitter activities at the state level based on Twitter posts—geolocated in the US—describing the most common symptoms of COVID-19, including cough and fever. A temporal lag (varying from 5–19 days) between the increases in the number of symptom-reporting tweets and officially reported positive cases is observed, implying that when pandemic-related behavior patterns appear in the media, they are usually early warnings of local outbreaks.

Thus far, only a few comparative studies [18, 26, 38] have attempted to explain political leaders' use of social media for crisis management; however, none have focused on political leaders' populist political

communication styles and how they influence public behavior during a crisis. To address this opportunity, we conducted a comparative analysis of the populist communication styles applied by six political leaders from the UK (Boris Johnson), Canada (Justin Trudeau), Australia (Scott Morrison), Singapore (Lee Hsien Loong), Ireland (Micheál Martin), and the US (Donald Trump) during the COVID-19 crisis. We combine Twitter data from these leaders with panel data on the public movement and government restrictions to understand their populist communication styles and theorize about their influence on public adherence behavior. Doing so can provide insights into which populist political communication styles work well for crisis communication and which ones do not.

### ***2.3. Populist Political Communication Styles***

The political communication style is a crucial constituent of populism [11] and refers to “a heterogeneous ensemble of ways of speaking, acting, looking, displaying, and handling things, which merge into a symbolic whole that immediately fuses matter and manner, message and package, argument and ritual” [43]. A political leader’s communication style is a useful conceptual tool for investigating various phenomena in the political realm [e.g., 4, 11, 14]. The populist political communication style framework [12] integrates two key elements: (1) *content* (what is being said), which includes the topic and function aspects, and (2) *form* (how it is being said), which includes the stagecraft and register aspects. Bracciale and Martella [12] further added three key types of strategies associated with political populism to their framework: accentuating the people’s sovereignty, criticizing the elite, and blackballing others [23] (see **Table 1**). By integrating key concepts from political communication style and populist political ideology, Bracciale and Martella [12] define four general populist political communication styles based on a communication-centered perspective (see **Table 2**): (1) *engaging*, (2) *intimate*, (3) *champion of the people*, and (4) *man on the street*.

Current research on populist political communication [e.g., 4, 14, 33] focuses on investigating its influence on (1) public engagement (reactions, comments, and shares), (2) public receptivity (evoking emotions), (3) voters’ attitudes toward gender equality in politics (warmth and competence), (4) truth contestation (relativizing the truth and discouraging untruthfulness), and (5) proliferation of political ideology (constructing one’s version of reality). In doing so, these studies conducted content analyses of political leaders’ Twitter or Facebook posts

**Table 1.** Populist political communication style framework concepts adapted from Bracciale and Martella [12]

Main constructs	Sub-constructs	
<i>Content:</i> what is being said on Twitter post	<i>Topic:</i> main argument of a Twitter post	(1) Political issues (e.g., politics, ideologies, and relationships among parties and institutions), (2) Policy issues (e.g., local policy issues to be examined and resolved or explaining the proposed solution for the issues), (3) Campaign issues (e.g., management or performance of campaigns), (4) Personal issues (e.g., reflections on a leader's private life), (5) Nonpolitical current affairs (e.g., sports, events, news, and TV programs).
	<i>Function:</i> main purpose of the Twitter post	(1) Campaign update (e.g., informing voters about campaign activities), (2) Self-promotion (e.g., promoting a leader's activities), (3) Setting the agenda (e.g., announcing details about activities), (4) Position taking (e.g., intervening in political and campaign issues), (5) Call to action (e.g., urging commitment from supporters for a specific task or goal), (6) Opposition (e.g., provoking other politicians, media, or citizens), (7) Endorsement (e.g., supporting a leader's party or fellow candidates), (8) Irony (e.g., engaging in sarcasm or asking rhetorical questions), (9) Request for interaction (e.g., calling others into question), (10) Small talk (e.g., sharing gossip or general chit-chat).
<i>Form:</i> how is being said on Twitter post	<i>Stagecraft:</i> highly public "doing" aspects of politics on Twitter	(1) Emotionalization (e.g., sharing emotions or insights), (2) Informality (e.g., using direct, simple, informal language), (3) Intimidation (e.g., narrating the leader's own life), (4) Negative emotions (e.g., referring to emotions of fear or resentment to evoke negative feelings), (5) Simplification (e.g., oversimplifying complex issues and solutions), (6) Storytelling (e.g., narrating politics characterized by the use of allusions, puns, and empty rhetoric), (7) Taboo breaking (e.g., being the first to do or say something deemed politically incorrect), (8) Vulgarism (e.g., using offensive language), (9) Instrumental actualization (i.e., analyzing specific events to convey political bias through the use of fallacious inductive reasoning)
	<i>Register:</i> communicative tone associated with making Twitter posts within 140 characters	(1) Referential or neutral, (2) Aggressive or provocative, (3) Humorous or ironic, (4) Conversational or participatory
<i>Political populism strategy</i>		(1) <i>Accentuating the sovereignty of the people:</i> act of sympathizing with the people, where the word "people" becomes an all-encompassing concept, regardless of the leader's political affiliation. (2) <i>Criticizing the elite:</i> expressing anti-elitist and anti-establishment sentiments, thus emphasizing the distance between "us" and "them" in a political, institutional, economic, or general sense. (3) <i>Blackballing others:</i> use of a political narrative that conveys "dangerous others" concepts, thereby establishing a common enemy in groups of populations "above the people."

in single- or cross-country settings, including Austria, Denmark, France, Germany, Hungary, Ireland, Italy, Poland, Romania, Spain, Sweden, and others. To seize this research opportunity, we use the populist political communication style as a theoretical lens to analyze political leaders' Twitter posts in cross-country settings and to explain their populist political communication style during the management of the COVID-19 pandemic.



**Table 2.** Populist political communication styles, adapted from Bracciale and Martella [12]

Populist Political Communication Style	Description	
	<i>Sentiment and Tone</i>	<i>Mechanisms and Aim</i>
<i>Engaging</i>	Positive and nonaggressive	Engaging supporters on political issues, promoting oneself and one’s party, and calling supporters to action or requesting interaction.
<i>Intimate</i>	Positive and personalized	Building nonpolitical discussion around shared emotions and aspects of private life.
<i>Champion of the people</i>	Negative and aggressive	Using an aggressive tone to engage in simplification, position taking, and taboo breaking to portray oneself as a defender of the people against “the establishment.”
<i>Man on the street</i>	Negative and aggressive	Using vulgar language, negative emotions, and instrumental actualization to legitimize oneself in the eyes of the people

### 3. Study 1

#### 3.1. Methodology

This work adopted a mixed-methods approach that combines theory building for Study 1 and an empirical study for Study 2. Study 1 adopted a theory-building approach based on inductive and deductive analyses with a nested multicase study research design [21, 22, 49] to identify the populist communication styles used by political leaders in their COVID-19-related Twitter posts. Theory building is particularly suitable when limited knowledge about the focal phenomenon exists [21, 22], in this case, the role of populist political communication in crisis management.

##### 3.1.1. Data collection

The data used in Study 1 were collected from Twitter, one of the most popular social media platforms today, with 126 million daily users [47]. In relation to our topic, previous studies have shown that Twitter is frequently used by political leaders as a public communication channel [12, 46]. Twitter post data were collected using data extraction software that was developed based on Twitter’s application programming interface [API; 50]. The Twitter API provides a function called Search User Timeline, which allows a developer to directly query the Twitter server and retrieve tweets posted on the timeline of specific users. The query for the search function was the screen names of the Twitter accounts of interest.

The returned data contained full tweet text and other metadata, such as tweet ID, date and time of the posts, associated links, hashtags, and the number of retweets and likes. Notably, the Twitter API has a quota such that only the last 3,200 tweets posted by each user can be retrieved. The data were collected in late July 2020, and the quota allowance was sufficient to capture all tweets posted by the selected political leaders from

January 2020 to the end of July 2020.

To better understand the influence of political leaders on public adherence to public movement restrictions, data were collected from countries that managed the COVID-19 crisis exceptionally well, moderately well, and inadequately based on the total cases and total new cases over time (see **Table 3**). Based on the screening, Singapore and Lee were selected as a country and political leader that managed the crisis exceptionally well over time; the UK and Johnson, Ireland and Martin, Australia and Morrison, and Canada and Trudeau were selected as countries and political leaders that handled the crisis moderately well over time; and the US and Trump were selected as a country and political leader that failed to effectively manage the crisis.

**Table 3.** Sample population

Twitter Username	Real Name	Position*
@BorisJohnson	Boris Johnson	Prime Minister of the UK
@MichealMartinTD	Micheál Martin	Prime Minister of Ireland
@ScottMorrisonMP	Scott Morrison	Prime Minister of Australia
@leehsienloong	Lee Hsien Loong	Prime Minister of Singapore
@JustinTrudeau	Justin Trudeau	Prime Minister of Canada
@realDonaldTrump	Donald Trump	President of the US

\*Position at the time of data collection

### 3.1.2. Data analysis

First, the data on political leaders were manually cleaned to include only Twitter posts that were directly and indirectly related to COVID-19. After filtering, the final dataset included 437 posts for Johnson, 112 for Martin, 203 for Morrison, 167 for Lee, 1,240 for Trudeau, and 1,310 for Trump. Thus, a total of 3,469 tweets were analyzed. Then, the Twitter posts were categorized into five phases of COVID-19 management for each country based on the number of total cases and new cases (refer to Table B1 in Appendix B). The latter framework, developed by the Norwegian Institute of Public Health [41], allowed us to conduct a more comprehensive analysis of political leaders' influence on public adherence to COVID-19 restrictions. In Phase 1 (*Sporadic Cases*), most COVID-19 cases were imported into the country in question, and there was a little local transmission of the disease. In Phase 2 (*Clusters*), most cases consisted of imported cases and local clusters in the country. In Phase 3 (*Main Wave*), most cases resulted from widespread local transmission in the country. In Phase 4 (*Full Epidemic*), the cases reached their peak and exceeded the maximum capacity of the country's healthcare system. In Phase 5 (*Late Epidemic*), the country's cases went beyond their peak and began to decline [41].

After preparing the data, we conducted the analysis in two stages [39]. In the first stage, we performed a

within-case analysis, which focused on the salient characteristics of the six individual cases and examined the content and sentiment of Twitter posts for each political leader throughout the five phases. The template analysis technique [32] was adopted to inductively analyze emerging themes from Twitter posts in two rounds. We also allowed codes to emerge naturally from the data via grounded theory coding, and these were constantly modified throughout the analysis based on their usefulness and suitability, resulting in the modification of several themes. A final coding template consisting of multiple main themes and subthemes was created for each political leader. The data were also coded for sentiments, including neutral, positive (very positive and moderately positive), negative (very negative and moderately negative), and mixed using NVivo 11's autocode function. In addition, a summary of the political environment for each country was included to demonstrate the context in which the political leaders operated (refer to Appendix D for detailed within-case analyses for each of the six cases).

In the second stage, a cross-case analysis was conducted to identify similarities and differences across the six cases by highlighting emerging patterns via two rounds of analysis. Similar to the within-case analysis, we adopted the template analysis technique [32] for a deductive coding of the Twitter posts based on the five dimensions of the populist political communication style: topic, function, stagecraft, register, and strategy [12]. Specifically, the data were coded for each dimension, and values were assigned for the two key factors of the populist political communication style framework [12]: (1) communication tone (positive vs. negative) and (2) communication focus (personal vs. political). After assigning values ranging from -2 to 2 for these two factors, the main constructs were plotted on a graph (the x- and y-axis represent communication tone and focus, respectively) to illustrate the interdependencies between the different populist political communication styles. We also conducted an additional comparative analysis of the content and form of the Twitter posts, enabling us to identify their populist political communication styles. Importantly, we acknowledge that certain political leaders may not have had a populist orientation before this period. However, we argue that during the COVID-19 crisis and in certain political circumstances, their communication style took on populist rhetoric. Full details of the cross-case analysis are included in the Results section for Study 1.

To ensure the systematic documentation and rigor of the research process in Study 1, we followed formal

procedures for conducting qualitative research [21, 22, 49]. This enabled us to establish internal validity, construct validity, reliability, and external validity for this study (refer to Table C3 in Appendix C for details on the rigor criteria of Study 1).

### 3.2. Results

#### 3.2.1. Political leaders who use an engaging style

**Boris Johnson:** Johnson's posting frequency and percentage of COVID-19-related tweets increased progressively and remained stable, from 9 (14%) posts in Phase 1 to 98 (98%) in Phase 3 and 290 (96%) posts in Phase 5. The topic of Johnson's posts during this period mostly involved issues related to the COVID-19 crisis. For example, he regularly notified the public of government advice and repeatedly reinforced the importance of certain preventative measures, including regularly washing hands, restricting public movements, self-isolation, working from home, social distancing, increasing mental health awareness, COVID-19 testing, and so on.<sup>1</sup> He also frequently reminded the public of the risks of COVID-19 to ensure that everyone understood the facts about its transmission.<sup>2</sup> The function of his tweets was predominantly linked to calling for collective action to contain its spread and endorsing certain groups for their efforts in handling the crisis. Using general and hopeful statements, he repeatedly mentioned the outcomes of UK citizens' collective efforts to minimize the spread of the virus and praised the efforts of healthcare workers in fighting the pandemic multiple times.<sup>3</sup> He also frequently updated the public on easing COVID-19 restrictions, praised them for adhering to the current regulations, and informed them about the available financial support for businesses and individuals<sup>4</sup> (see **Figure 1**).

The stagecraft of Johnson's tweets during the COVID-19 crisis was associated with informality and some degree of emotionalization. For example, he attempted to convey hopefulness about the distant future by sharing insights and using informal language.<sup>5</sup> The register of his tweets was mostly neutral and conversational.<sup>6</sup>

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<sup>1</sup> "Stay home if you have a cough or fever."; "You should stay at home of seven days."; "Use soap and water for 20 seconds or use hand sanitizer."; "Stay two meters apart"; "If you are struggling, or are worried about someone, reach out for help."

<sup>2</sup> "Coronavirus: anyone can get it, anyone can spread it."; "If you don't follow these instructions, you are putting people's lives at risk."; "You might catch more than the sun at the beach today."; "#StayAlert, control the virus, save lives."

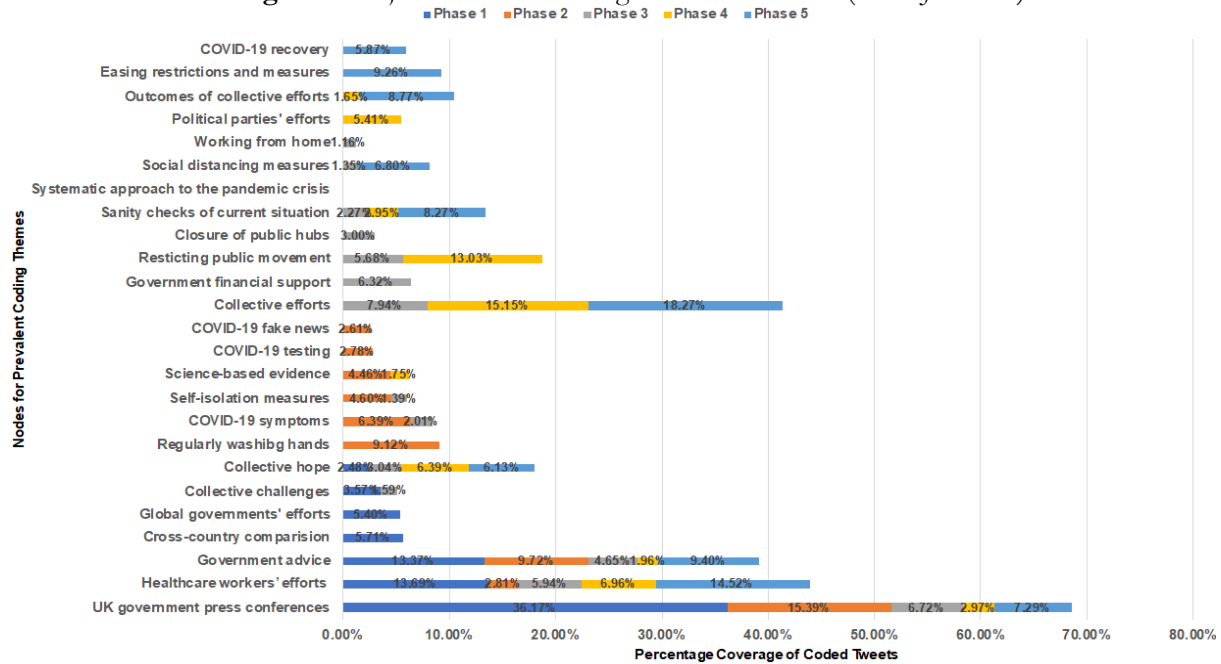
<sup>3</sup> "We are past the peak."; "Together we have made it through the peak."; "Thank you for all you are doing to fight the virus."; "Thank you for all that you have been doing so far."; "Thank you to the outstanding NHS staff."

<sup>4</sup> "In Leicester, we instituted a local lockdown in order to bear down on stubborn rates of infection. We will begin to relax the restrictions there next week. We can do so because the data is improving."; "The Coronavirus Business Interruption Loan Scheme is now available for small or medium-sized businesses facing cash flow issues. Get loans of up to £5m with 12 months interest free."

<sup>5</sup> "We will get through it together."; "Together we will beat this."; "You are the best of Britain."; "We can run the tide against coronavirus in the next 12 weeks."; "We have overcome so many challenges in the past."

<sup>6</sup> "Read more here on how best to protect yourself and others whilst staying at home."; "Stay alert by washing your hands regularly, using soap and water."; "If you are contacted by NHS Test and Trace – follow the instructions."; "We have published a roadmap for how and when the UK

**Figure 1.** Major and minor coding nodes for the UK (Boris Johnson)



Specifically, most of his tweets had neutral (57%) and positive (18%) sentiments (see **Table 4**). The strategy, however, was not evident in his tweets on the crisis.

**Table 4.** Sentiment analysis for all phases in the UK (Boris Johnson)

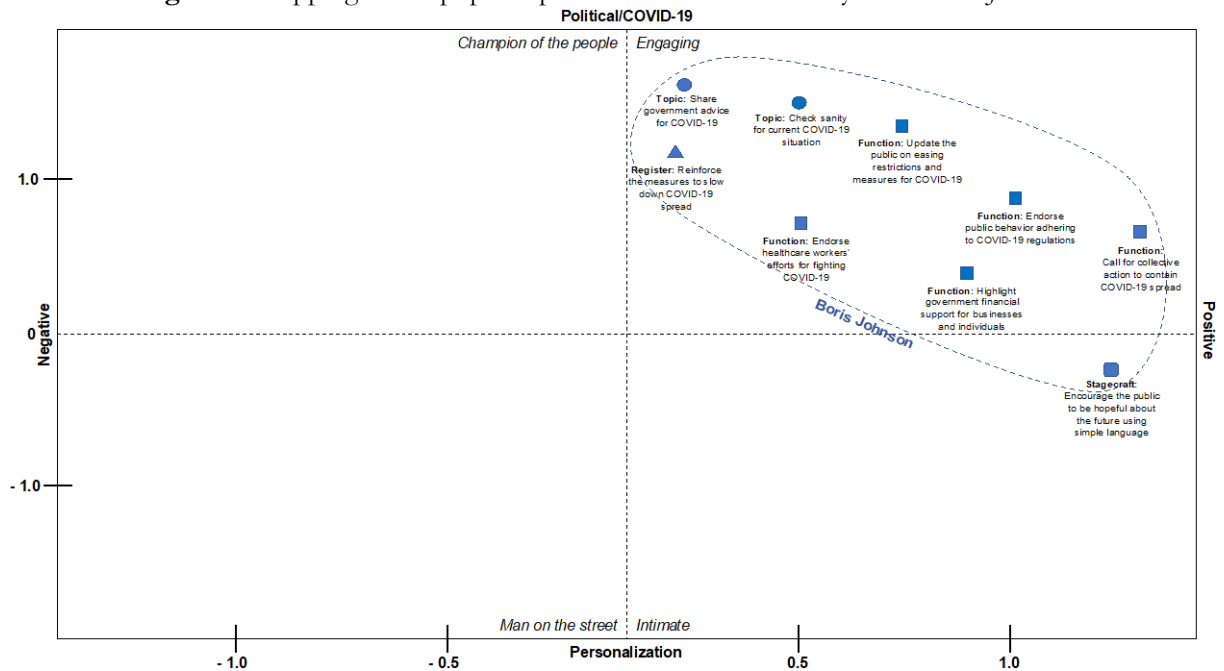
Codes/Phases	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Neutral	8	12	62	17	150
Negative	1	3	19	4	51
Positive	0	1	12	1	65
Mixed	0	0	5	2	24
<i>Total references:</i>	<i>9</i>	<i>16</i>	<i>98</i>	<i>24</i>	<i>290</i>

In summary, most of the populist political communication style dimensions associated with Johnson's tweets during the crisis were characterized by neutral and positive tones, the aim of which was to encourage the public to actively participate in reducing the spread of COVID-19 by adhering to government advice and taking protective measures. Thus, his populist political communication style during this period was primarily *engaging*, with some *intimate* elements (see **Figure 2**).

**Justin Trudeau:** Trudeau's posting activity increased steadily, with 12 (3.4%) posts in Phase 1, 271 (46%) in Phase 3, and 590 (38%) in Phase 5. Relative to Johnson, Trudeau posted more COVID-19-related tweets; however, his posting percentage was not as high as Johnson's throughout the phases. The topic of his posts during this period centered on the actions taken by the Canadian government to tackle the crisis. For example,

government will adjust our responses to the COVID-19 crisis.”

**Figure 2.** Mapping of the populist political communication style for Boris Johnson



he frequently mentioned the government’s financial package that was established to help businesses (e.g., Canada Emergency Wage Subsidy) and citizens (e.g., Canada Emergency Benefit) and to support the Canadian government’s efforts to work with other international governments to slow the spread of the virus, secure supply chains, and minimize economic damage.<sup>7</sup> The function of his tweets focused on promoting the actions taken by his government to contain the spread of the virus, reopen the economy, protect Canadian borders, and bring Canadian residents back home.<sup>8</sup> Like Johnson, Trudeau repeatedly called on the public to stick to preventative measures, such as social distancing, good hygiene, self-isolation, wearing masks, mental health support, COVID-19 testing, and so on<sup>9</sup> (see **Figure 3**).

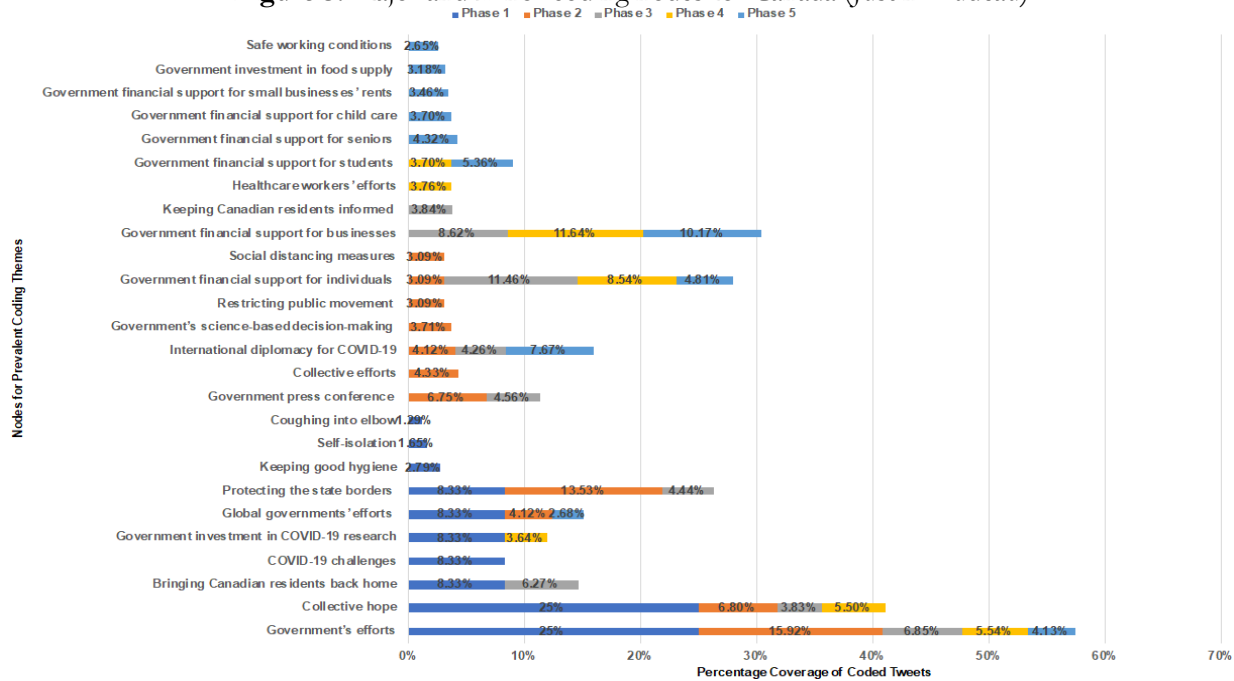
The stagecraft of Trudeau’s tweets was associated with informality. For example, he repeatedly used direct,

<sup>7</sup> “The new Canada Emergency Wage Subsidy would cover 75% of employee wages up to \$847 per employee, per week.”; “The new Canada Emergency Response Benefit will help everyone who has lost their income because of COVID-19.”; “South Korea was one of the first countries hit with an outbreak of COVID-19, and last night I spoke with the President about the latest developments.”

<sup>8</sup> “I want you to know that we’re working around the clock, doing everything we can to support our economy and keep you safe.”; “Canadians can count on their leaders working together as we get through this.”; “We are pulling out all the stops to support you, your family, and your business through this pandemic.”; “This funding will help get infrastructure projects underway, give business the confidence to reopen, and make sure you—all hardworking Canadians—can get back on the job.”; “@AirTransat will operate flights from Guatemala City and San Salvador on Friday. We will continue to work with the airlines to help Canadian tourists come home.”

<sup>9</sup> “Social distancing is what we all need to be doing right now. #Flatten TheCurve”; “You can help prevent the spread of COVID-19 by washing your hands, not touching your face.”; “Most importantly, if you’re feeling sick: stay home.”; “In order to open our economy our economy, we need to be able to quickly detect and control any future outbreaks through testing.”; “If you’re a kid adjusting to a new kind of routine right now, or a senior feeling particularly isolated during this certain period. It is okay to be worried. But we’ve got your back.”

**Figure 3.** Major and minor coding nodes for Canada (Justin Trudeau)



simple, and informal language to explain his government's efforts in dealing with the crisis.<sup>10</sup> The register of his Twitter posts was predominantly neutral and participatory.<sup>11</sup> Like Johnson's tweets, most of Trudeau's were associated with neutral (45%) and positive (24%) sentiments (see **Table 5**). However, there was no evident strategy associated with his tweets.

**Table 5.** Sentiment analysis for all phases in Canada (Justin Trudeau)

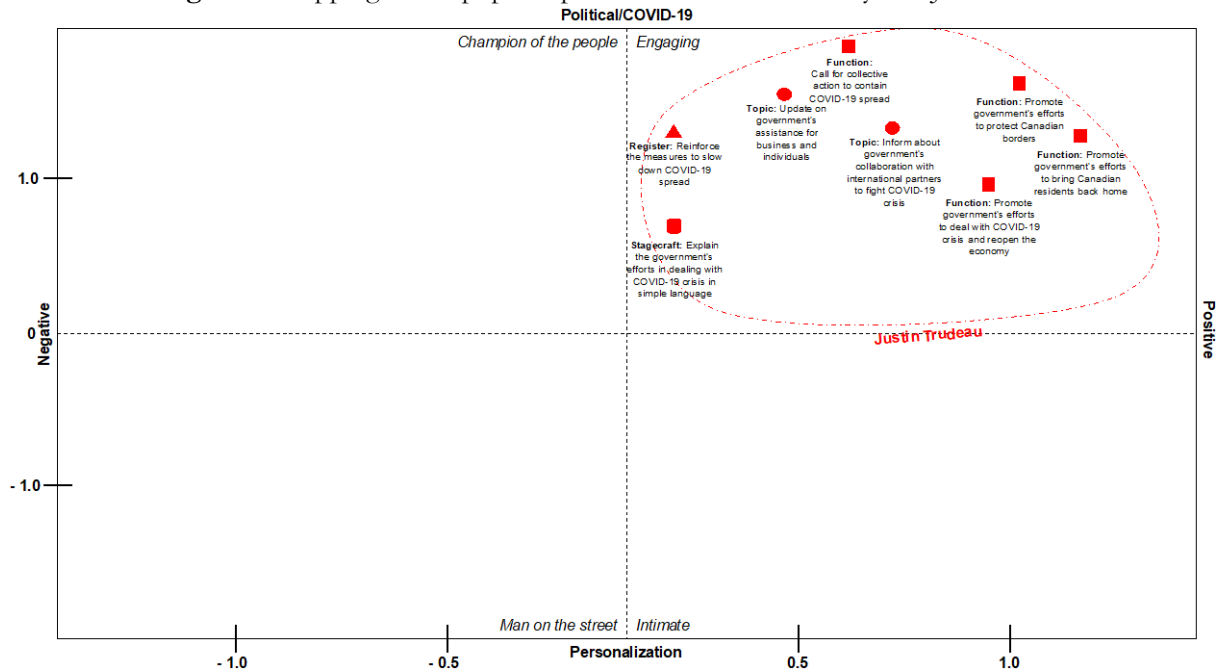
Codes/Phases	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Neutral	2	47	119	118	277
Negative	2	15	63	61	130
Positive	5	26	59	57	151
Mixed	3	2	30	34	32
<i>Total references:</i>	12	97	271	270	590

Most of the populist political communication style dimensions related to Trudeau's tweets were characterized by neutral and positive tones. These messages aimed to encourage the Canadian public to cooperate with the government to heighten awareness of the latest COVID-19 issues and called for a collective commitment to fight the virus. Thus, his populist political communication style was predominantly *engaging* (**Figure 4**).

<sup>10</sup> "The communities that need this funding have now been identified, and money is getting to them they can keep people safe. For people from Victoria to Hamilton, and Regina to St. John's know that help has arrived."; "Businesses can help to ensure a safe re-opening by following the 5 workplace safety steps"; "What is social distancing? Avoid crowded places and non-essential gatherings, avoid greetings such as handshakes, avoid contact with people at higher risk, keep a distance of at least 2 meters from others."

<sup>11</sup> "We are also funding four Canadian companies working on what may be breakthrough solution for COVID-19 rapid testing"; "Applications for the Canadian Seafood Stabilization Fund are now open!"; "Do wash your hands often."; "Share this with your friends: keep your environment clean."

**Figure 4.** Mapping of the populist political communication style of Justin Trudeau



**Scott Morrison:** Unlike Johnson's and Trudeau's, Morrison's posting frequency fluctuated, starting with 41 (67%) posts in Phase 1, 23 (100%) in Phase 2, and 92 (90%) in Phase 5. In contrast, the percentage of his COVID-19-related posts increased steadily throughout the phases. As with Trudeau's tweets, the topic of Morrison's tweets focused on government actions in tackling the crisis. For example, Morrison frequently emphasized the Australian government's financial assistance for citizens (e.g., JobSeeker) and small businesses (e.g., JobKeeper), its investments in industrial job creation, and its international diplomacy efforts to establish stronger economic ties with partners.<sup>12</sup>

The function of his posts centered on making a public call to action to follow preventative measures, endorsing government workers' efforts during the crisis, and promoting the Australian government's efforts to deal with the crisis. In particular, he constantly reminded the public about existing COVID-19 preventative measures, such as self-isolation, social distancing, mental health support, and washing hands, and prompted the public to download and use the COVIDSafe app to improve the government's contact tracing capabilities.<sup>13</sup>

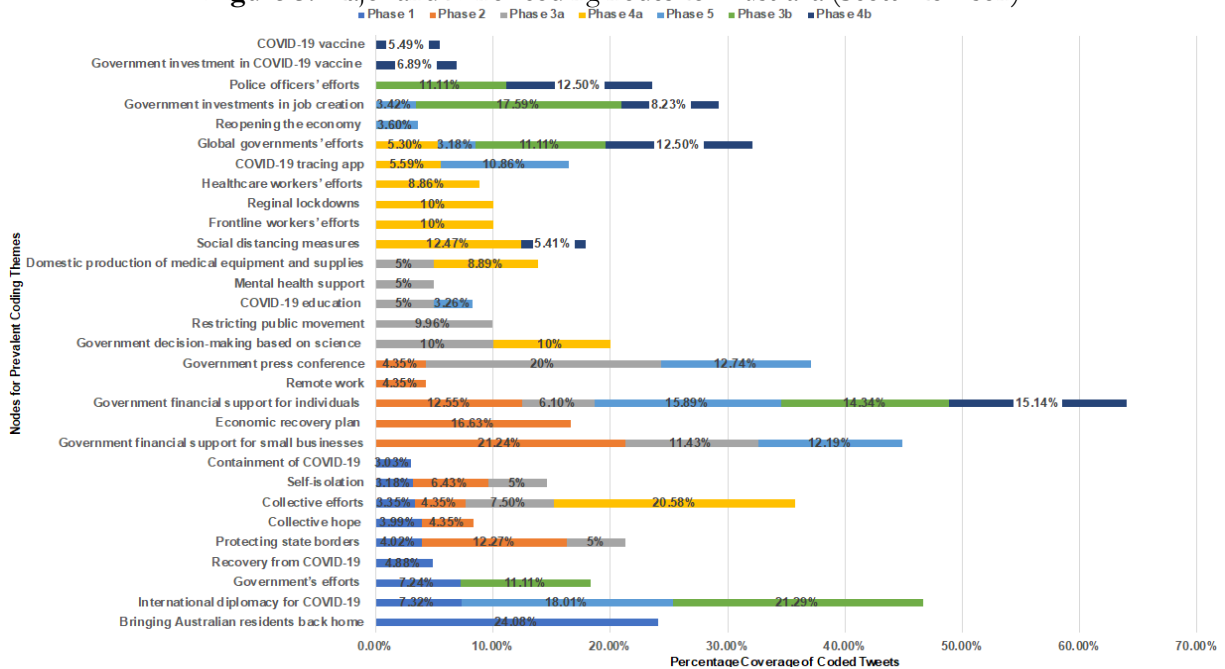
<sup>12</sup> "Over 838,000 Australian businesses have now registered their interest in our JobKeeper wage subsidy of \$1500 a fortnight for each employee."; "This \$215m investment to support Australian manufacturing businesses deliver 200 job-creating project projects across the country will be a key part of the recovery."; "Delighted to join President Jokowi in welcoming the entry into force of the Indonesia-Australia Comprehensive Economic Partnership Agreement. The agreement unlocks the vast potential of bilateral economic partnership, driving growth and creating jobs in both countries."

<sup>13</sup> "Anyone travelling to Australia from overseas will now be required to self-isolate for 14 days."; "Social distancing – staying 1.5m away from each other – is our best weapon against this virus."; "Update on the mental health impacts of coronavirus."; "Join me in helping to stop the spread



He also frequently endorsed the efforts of police officers and frontline workers in helping manage the COVID-19 crisis and promoted his government's efforts to constantly protect the borders and bring Australian citizens back home safe<sup>14</sup> (see **Figure 5**).

**Figure 5.** Major and minor coding nodes for Australia (Scott Morrison)



The stagecraft of Morrison's tweets involved informality and emotionalization. He repeatedly made reassuring statements about the government's efforts to deal with the crisis using simple language and some emotional statements.<sup>15</sup> The dominant register of his tweets was neutral and participatory,<sup>16</sup> and most of his tweets had neutral (46%) and positive (23%) sentiments (see **Table 6**). Finally, no strategy was evident in his posts.

**Table 6.** Sentiment analysis for all phases in Australia (Scott Morrison)

Codes/Phases	Phase 1	Phase 2	Phase 3a	Phase 4a	Phase 5	Phase 3b	Phase 4b
Neutral	15	9	11	8	44	3	3
Negative	8	6	6	0	21	1	1
Positive	12	6	3	1	18	5	2
Mixed	6	2	0	1	2	0	2
Total references:	41	23	20	10	92	9	8

of COVID-19. Download COVIDSafe. An app from the Australian Government.”

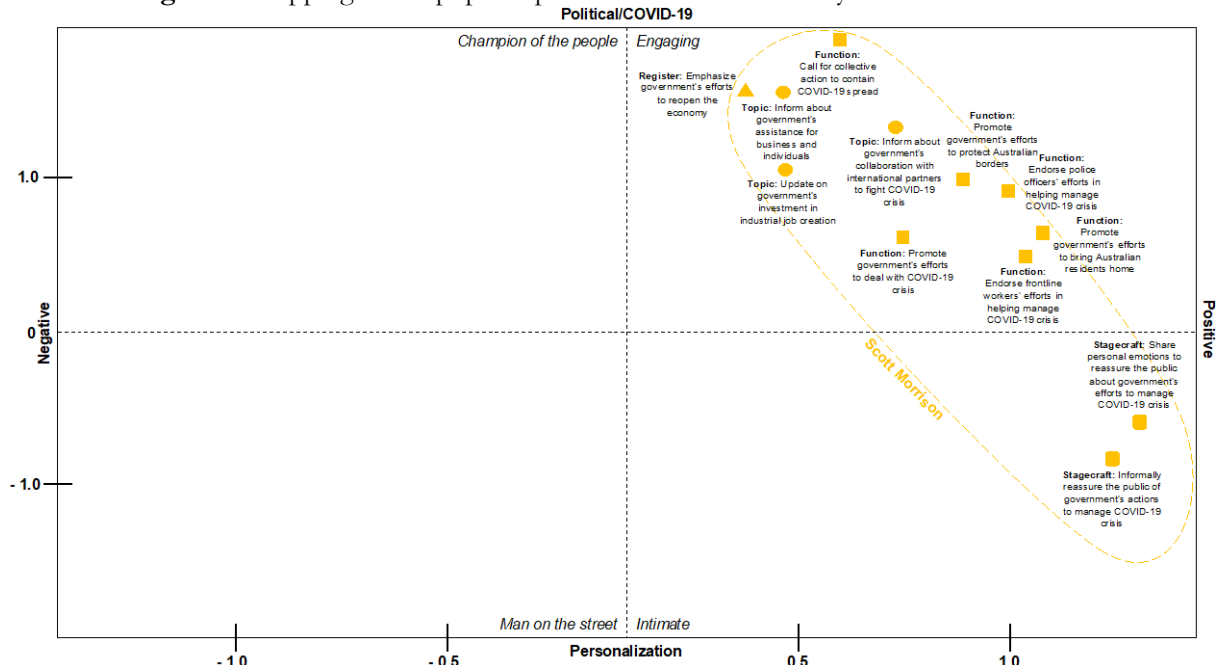
<sup>14</sup> “Thank you also to all the other incredible people on the frontline working to support our communities - including teachers, teacher aids, cleaners, delivery drivers, bus and train drivers, supermarket workers and so many others. You are the best of Australia.”; “Thank you to all our Australian Defense Force personnel who are out assisting in our fight against #COVID19.”; “Tomorrow we’re bringing home around 170 of the Australians who are on the Diamond Princess in Japan and they’ll also be quarantined for 14 days.”

<sup>15</sup> “Australia is not immune from #coronavirus but are well prepared.”; “The protection and safety of Australians is our highest priority.”; “Australians can be confident the Government is doing everything to ensure their safety and keep our economy strong.”; “Our government is going to continue to do everything it can to ensure Australia bounces back stronger on the other side.”; “A heartfelt thank you from all Australians for everything you are doing, and will do. We are doing everything we can to #flatten the curve to ease the burden on you.”

<sup>16</sup> “It includes a \$750 one-off payment to pensioners, low-income families, veterans and other income support recipients, and eligible concession card holders.”; “Job Keeper will be extended by six months to the end of March next year and the temporary supplement for those on income support will be extended until the end of the year.”; “A welcome move forward on the path to a COVIDSafe reopening across Australia.”

In summary, most of the populist political communication style dimensions associated with Morrison's tweets were characterized by neutral and positive tones. These messages aimed to engage the public in the current COVID-19 issues, promote government efforts to deal with the pandemic, and prompt collective action regarding ongoing preventative measures. Hence, his populist political communication style on Twitter during this period was generally *engaging*, with some *intimate* elements (see **Figure 6**).

**Figure 6.** Mapping of the populist political communication style for Scott Morrison

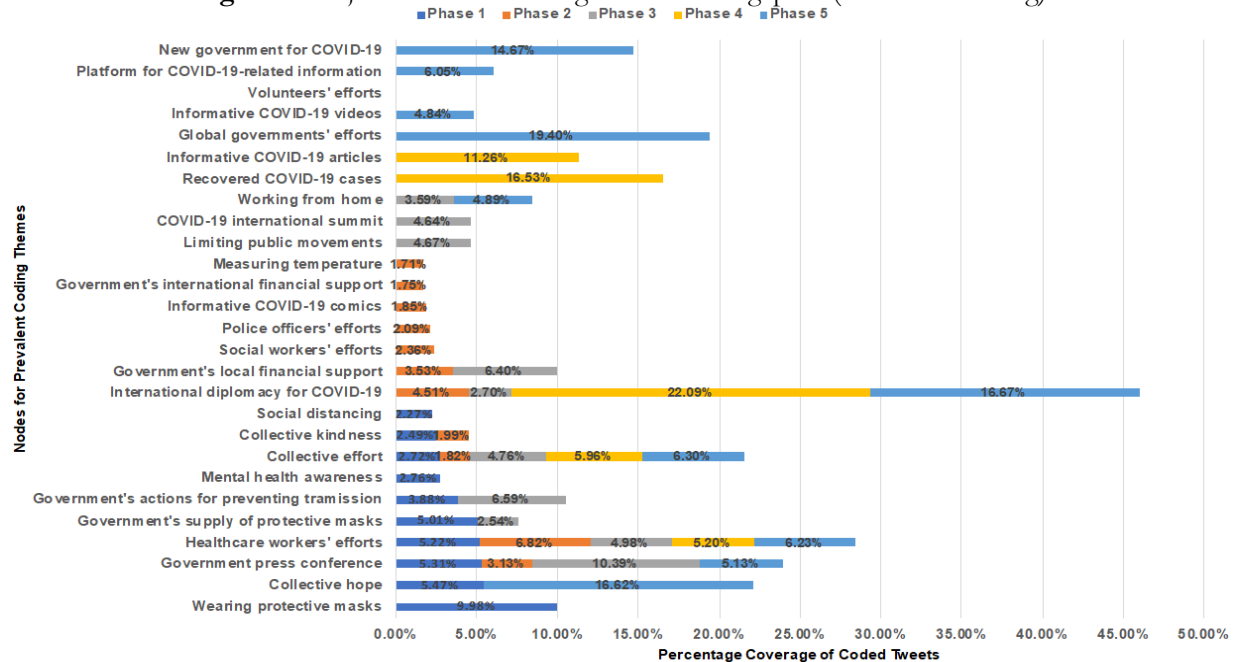


**Lee Hsien Loong:** Relative to the other political leaders, Lee posted fewer COVID-19-related tweets, although his posting frequency increased steadily, with 31 (94%) posts in Phase 1, 32 (84%) in Phase 2, and 70 (57%) in Phase 5. As with Morrison's tweets, the percentage of Lee's COVID-19-related tweets fluctuated throughout the phases. In line with other political leaders, the topic of Lee's tweets focused on informing the public about key developments in the country's crisis management. For example, he regularly informed the public about the number of COVID-19 cases and deaths, current measures in place to reduce transmission, the risks associated with transmission, collection spots for government-supplied protective masks, ways to apply for government financial support, and so on.<sup>17</sup> The function of his tweets centered on updating the public on COVID-19

<sup>17</sup> "Today, there is a large jump in the number of new cases."; "Sadly, two COVID-19 patients in ICU succumbed to the disease this morning."; "Many of the recent COVID-19 cases are work permit holders living in dormitories."; "We have formed the Teck Ghee CARE Task Force."; "The government has implemented support schemes, packages; will make every effort to ensure no one gets left behind."; "Visited the mask collection point at Tech Ghee Care RN Centre yesterday. Masks will be progressively rolled out to 1.37 million Singapore households at the RCs."

developments, calling for collective responsibility to prevent the spread of the virus, endorsing the efforts of healthcare workers, and promoting the Singaporean government's efforts to coordinate with international partners and actions to prevent the spread of COVID-19. For example, he regularly reminded the public "to do our part" and "remain united" to highlight the collective efforts necessary to prevent transmission, expressed gratitude for the continuous efforts of healthcare workers in treating patients, and promoted his government's efforts to coordinate with international partners to deal with the COVID-19 crisis<sup>18</sup> (see **Figure 7**).

**Figure 7.** Major and minor coding nodes for Singapore (Lee Hsien Loong)



The stagecraft of Lee's posts was associated with emotionalization, intimization, and informality. For example, he repeatedly expressed his hope regarding Singapore's short- and long-term prospects through broad emotional and personally insightful statements.<sup>19</sup> The register of his tweets was neutral and conversational.<sup>20</sup> The majority of his tweets were associated with neutral (42%) and positive (29%) sentiments (see **Table 7**).

<sup>18</sup> "Let's stay united"; "Let's all do our part"; "This massive exercise was made possible by the collective effort of the SAF and many Singaporeans."; "My deepest respect to all healthcare workers."; "Show your support for healthcare workers and others working hard to keep Singapore running."; "New Zealand PM @jacindaardern & I spoke tdy. We updated each other on how we were managing COVID-19 & discussed how we can support each other during this time, including keeping supply chains intact between our countries."

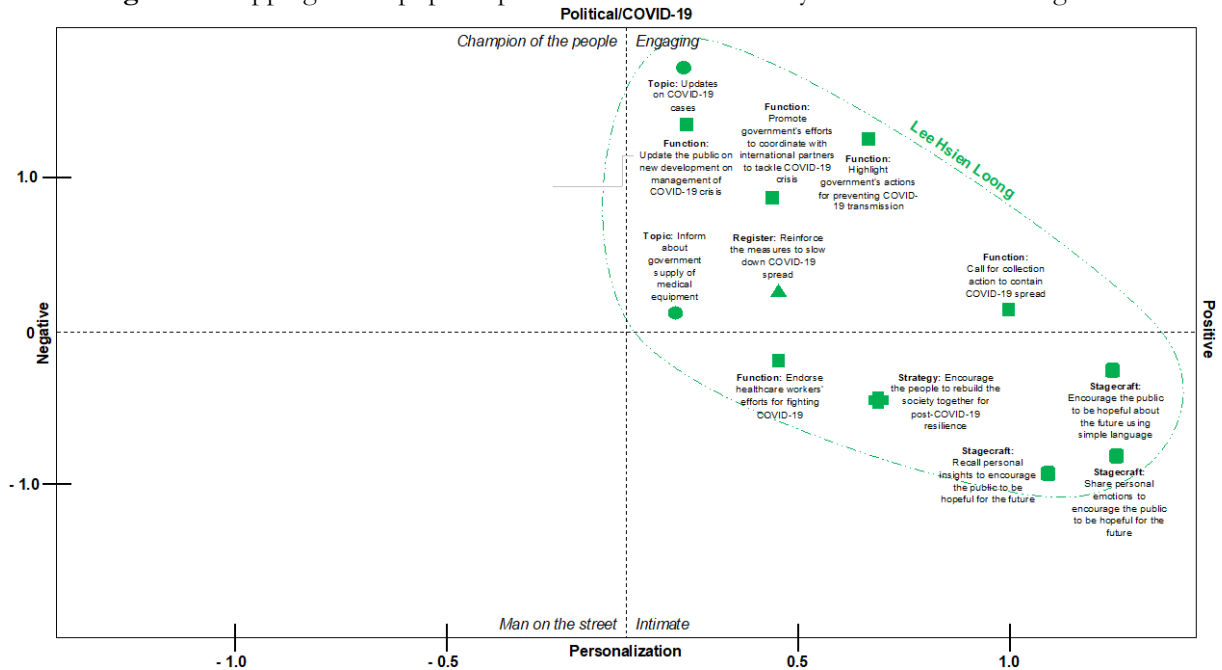
<sup>19</sup> "Together keep Singapore strong."; "Reassured that it is still business as usual in Singapore."; "Glad that the coronavirus situation has not dampened the festive spirit."; "Our community spirit remains strong."; "Our people's spirit of fortitude in the face of the COVID-19 crises is captured movingly in this series of @govsingapore videos."

<sup>20</sup> "This article explains clearly the rationale for the circuit breaker and what outcome we hope to see."; "Please #stayathomeforSG"; "Temasek Foundation is giving out up to 500ml of water-based hand sanitizer free for all Singapore households"; "We are holding an AMA [Ask Me Anything] tonight at 8 pm on our Facebook Page, so do log on if you have questions"; "Do continue to take the necessary precautions even while you are having fun outside."

**Table 7.** Sentiment analysis for all phases in Singapore (Lee Hsien Loong)

Codes/Phases	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Neutral	16	8	11	2	33
Negative	3	9	8	0	10
Positive	11	10	8	2	18
Mixed	<u>1</u>	<u>5</u>	<u>3</u>	<u>0</u>	<u>2</u>
<i>Total references:</i>	<i>31</i>	<i>32</i>	<i>30</i>	<i>4</i>	<i>70</i>

The strategy emerging from his posts accentuated the sovereignty of the people. He frequently encouraged the public to work together to (re)build the city using emotional and personal statements, thus emphasizing his closeness to the people of Singapore.<sup>21</sup> Most of the populist political communication style dimensions linked to Lee's tweets were characterized by neutral and positive tones. His messages aimed to inform the public about issues related to COVID-19 and to encourage Singaporeans to be alert about the latest developments. Thus, his populist political communication style was a combination of *engaging* and *intimate* (see **Figure 8**).

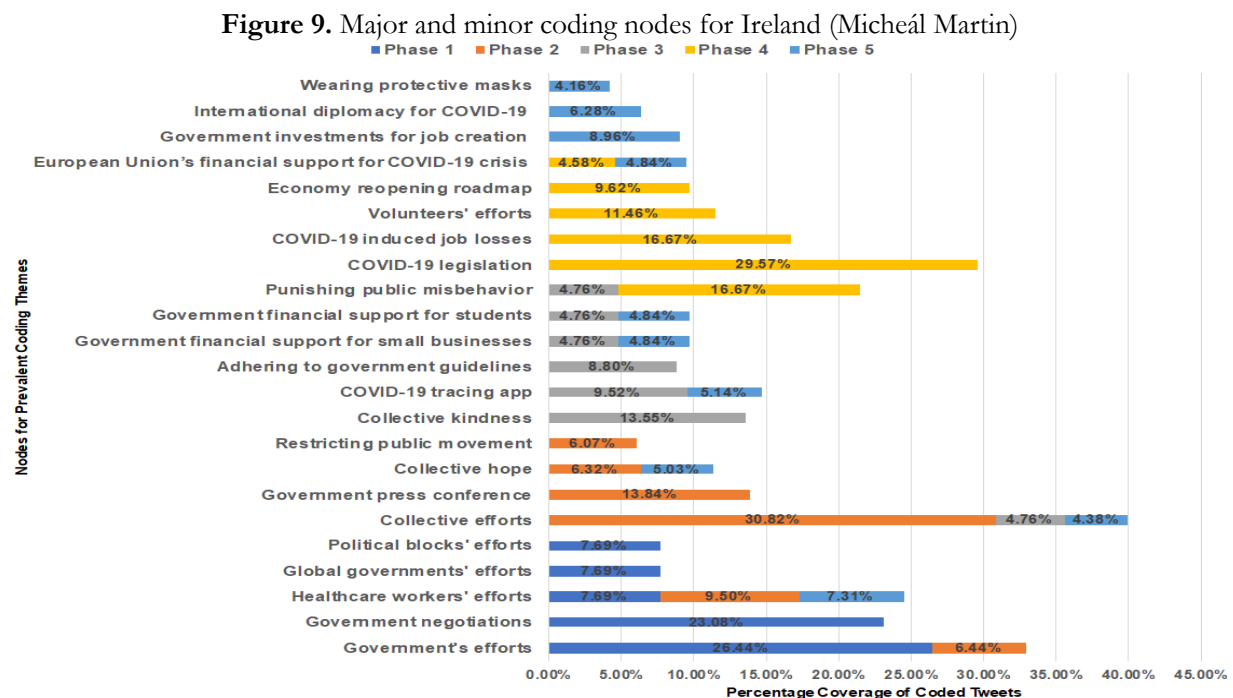
**Figure 8.** Mapping of the populist political communication style of Lee Hsien Loong

### 3.2.2. Political leaders who use an intimate style

**Micheál Martin:** Martin increased his posting frequency from 13 (73%) posts in Phase 1 to 21 (100%) in Phase 3 to 62 (65%) in Phase 5; however, the percentage of such tweets fluctuated throughout the phases. The topic of Martin's Twitter posts focused on explaining the importance of the public's role in reducing the spread of

<sup>21</sup> "Tackling COVID-19 needs everyone on the same page. My team will continue working closely with Singaporeans fight this dangerous threat."; "I look forward to working with our colleagues across the aisle to build a better and stronger Singapore."; "We cannot drop everything and wait for it to pass, we must keep building Singapore."; "Do explore these available job vacancies with an open mind."

COVID-19 and prompting them to adhere to current preventative measures, such as wearing protective masks in public, social distancing, washing hands, restricting public gatherings, and so on. He constantly reminded the public to follow the COVID-19 guidelines issued by the government.<sup>22</sup> The function of his tweets centered on updating the public about the availability of government-provided financial packages for small businesses (e.g., JobStimulus) and students (e.g., refunds for accommodation), calling on the public to practice kindness during this period, endorsing the healthcare workers' efforts in helping tackle the crisis, promoting the government's efforts to manage the crisis, and criticizing public misbehavior using irony and sarcasm. Like Johnson, Martin made calls for public kindness using positive and intimate statements, endorsed the efforts of healthcare workers, and promoted government actions to deal with the COVID-19 crisis<sup>23</sup> (see **Figure 9**).



The stagecraft of Martin's posts was linked to intimization, emotionalization, and informality. For example, he repeatedly made informal and emotional statements about addressing issues associated with the COVID-19

<sup>22</sup> "You may think you're fit and healthy and unstoppable, but you're jeopardizing people who aren't. Please think of them and follow the advice. We can beat this together."; "If you are to protect our loved ones and the most vulnerable from COVID-19 we must follow the guidelines and work for each other."; "Wearing a face mask out in public has proven to help stop the spread of COVID-19."

<sup>23</sup> "We all need to look out for each other, especially those most vulnerable in our communities."; "Compassion is a medicine. COVID-19 is taking so much from us, but it is also giving us something special. The opportunity to come together as one humanity to work together, to grow together."; "We experience these difficult times through #COVID-19, which require from the virtues of unity, courage, and resolve."; "This is one small thing we can all do. Take a moment this evening to talk to your family, our neighbors."

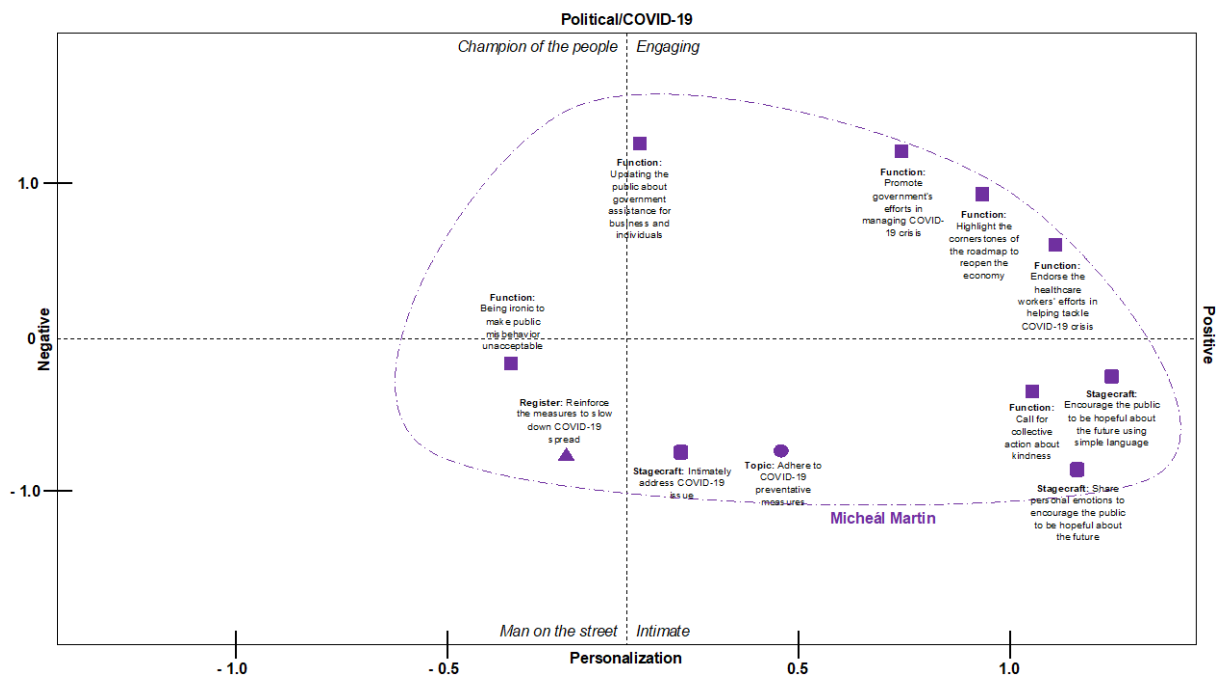
crisis, as well as general, positive statements about the future using simple language.<sup>24</sup> The register was mostly neutral and conversational, and even humorous and ironic at times.<sup>25</sup> Most of his tweets had neutral (51%) and positive (22%) sentiments (see **Table 8**). However, there was no apparent strategy emerging from his tweets during this period.

**Table 8.** Sentiment analysis for all phases in Ireland (Micheál Martin)

Codes/Phases	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Neutral	6	8	11	4	28
Negative	2	1	5	1	7
Positive	3	1	4	0	17
Mixed	<u>2</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>10</u>
<i>Total references:</i>	<i>13</i>	<i>10</i>	<i>21</i>	<i>6</i>	<i>62</i>

In summary, most of the populist political communication style dimensions associated with Martin's tweets were characterized by neutral and positive tones. These tones of communication were used to encourage candid discussions about ways of dealing with the crisis by sharing emotions and personal insights with the public. Thus, his populist political communication style was intimate, with a few *engaging* elements (see **Figure 10**).

**Figure 10.** Mapping of the populist political communication style of Micheál Martin



<sup>24</sup> “This virus is a very serious issue for the whole country and everyone has their part to play in delaying its spread and helping to protect our communities”; “It is not good enough that students still don’t have clarity on refunds for accommodation that they’re not using while the colleges remain closed. Needs to be sorted ASAP”; “We can beat #COVID-19 together”; “Together we will do it”

<sup>25</sup> “So many people are making such huge sacrifices. When your kids ask you, what did you in 2020 to fight the virus, you really want the answer to be ‘I was an idiot?’”; “A question for those who think that coughing and spitting at people during #COVID-19 is funny. What is wrong with you?”; “A message to those in our pubs and restaurants who are ignoring #COVID-19 recommendations on social distancing.”

### 3.2.3. Political leaders who use a champion of the people style

**Donald Trump:** Trump's posting frequency steadily increased throughout the phases, starting with 31 posts (4%) in Phase 1, decreasing to 25 (12%) in Phase 2, and ending with 364 posts (23%) in Phase 5. His posting percentage fluctuated from phase to phase: 4% in Phase 1, 43% in Phase 3a, and 23% in Phase 5ppe.

The topic of his tweets concentrated on highlighting his own efforts, those of his administration, the efforts of the US federal government to manage the COVID-19 pandemic, as well as updating the public on the economic recovery plan related to the crisis. For example, he frequently explicitly outlined the outcomes associated with (1) his own efforts,<sup>26</sup> (2) those of his administration,<sup>27</sup> and (3) those of the government.<sup>28</sup> He also frequently updated the public about his economic recovery plans and actions for dealing with the crisis.<sup>29</sup> The function of his tweets was associated mostly with the self-promotion of efforts to reopen the economy, the endorsement of his administration and government efforts to deal with the crisis, the endorsement of healthcare workers' efforts in fighting COVID-19, and his angst related to the coverage of the COVID-19 crisis by the mainstream media (a.k.a. "Fake News"), which he felt was making the US and its economy falsely look bad.<sup>30</sup> He also repeatedly opposed and criticized the Democrats' performance and policies linked to the COVID-19 crisis<sup>31</sup> (see **Figure 11**).

The stagecraft of Trump's tweets during the crisis was associated with simplification, vulgarism, taboo breaking, and instrumental actualization. For example, he regularly made insensitive, offensive, and inflammatory statements regarding the specific actions and decisions of Democrats.<sup>32</sup> The register of his tweets was

<sup>26</sup> "President @realDonaldTrump DELIVERED: 523 million gloves, 69 million surgical masks, 55 million N95 respirators, 10.5 million surgical gowns, 5.9 million face shields, 10,998 ventilators, and 8,450 federal medical station beds"; "President @realDonaldTrump just signed Phase 3.5 of coronavirus relief legislation into law."; "We are United in our effort to defeat the Invisible China Virus, and many people say that it is Patriotic to wear a face mask when you can't socially distance. There is nobody more Patriotic than me, your favorite President!"

<sup>27</sup> "CDC and my Administration are doing a GREAT job of handling Coronavirus, including the very early closing of our borders to certain areas of the world"; "We have perfectly coordinated and fine-tuned plan at the White House for our attack on Coronavirus."

<sup>28</sup> "The bill passed in the Senate today will provide an additional \$310 billion for the Paycheck Protection Program"; "\$49.9 million in Federal Funding is on its way to @DallasLoveField Airport to aid economic recovery"; "\$817 million will aid in the economic recovery."

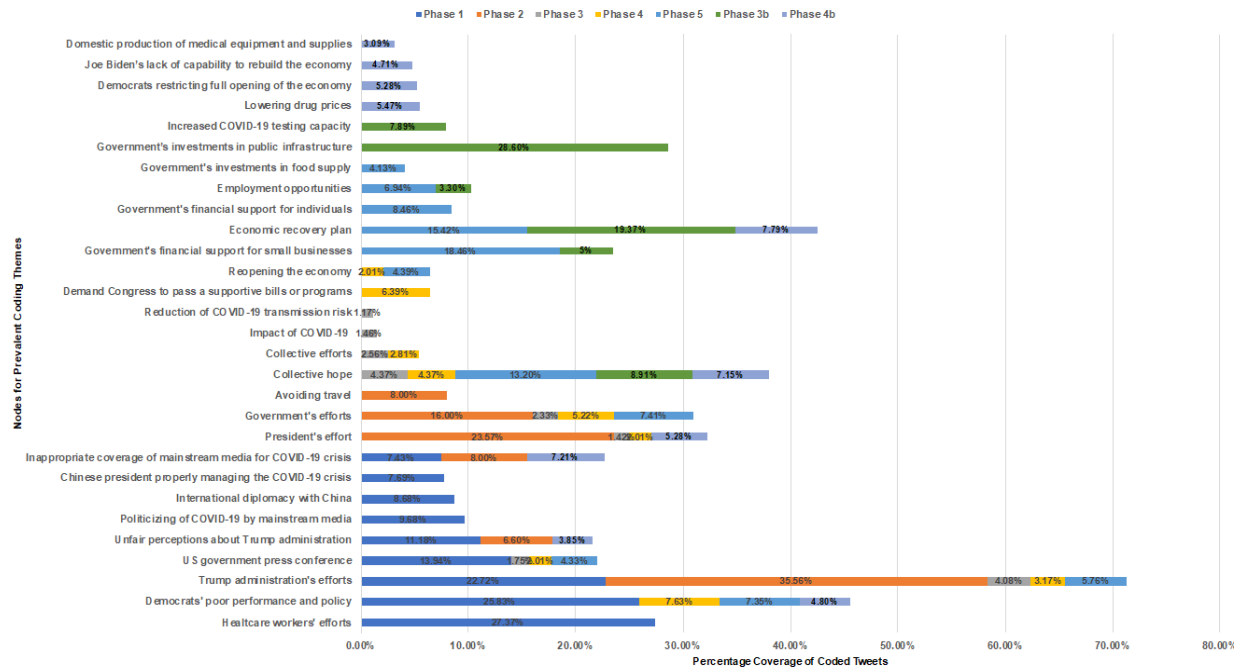
<sup>29</sup> "I'm proud to propose a \$6.8M award to @WisconsinDOT from @USDOT to complete the last phase of the Merrimac Bridge rehabilitation ñ more efficient and lower cost rail car travel over Lake Wisconsin!"; "Big \$\$\$\$ headed to the Pittsburgh area! I'm sending \$141.7M in CARES Act funding to @PGHtransit from @USDOT to aid in the recovery."

<sup>30</sup> "Wow! May retail sales show biggest one-month increase of ALL TIME, up 17.7%. Far bigger than projected."; "@realDonaldTrump authorized @USDA to ensure our patriotic farmers, ranchers, and producers are supported. We are moving quickly to open applications to get more payments out of the door and into the pockets of the farmers."; "Low Ratings Fake News MSDNC (Comcast) & @CNN are doing everything possible to make the Caronavirus look as bad as possible, including panicking markets, if possible. Likewise, their incompetent Do Nothing Democrat comrades are all talk, no action. USA in great shape! @CDCgov."

<sup>31</sup> "Dems are ignoring bipartisan calls for more funding from PPP. We need action not politics"; "Republicans were ready to expand funding for PPP last week, but Democrats blocked funding"; "Speaker Pelosi and Senator Scumer [sic] are holding [the funding] hostage, trying to get other priorities."; "You will never hear this on the Fake News concerning the China Virus, but by comparison to most other countries, who are suffering greatly, we are doing very well - and we have done things that few other countries could have done!"

<sup>32</sup> "Crazy Nancy Pelosi said I made a mistake when I banned people from infected China from entering the US in January. Tens of thousands of

**Figure 11.** Major and minor coding nodes for the US (Donald Trump)



generally aggressive and provocative, and it was even ironic at times.<sup>33</sup> His Twitter posts showed mixed sentiments: 539 (41%), 309 (24%), and 279 posts (21%) with neutral, positive, and negative sentiments, respectively (see **Table 9**). The strategy associated with his tweets was a combination of blackballing others, name calling, and criticizing “the elite.” For example, he constantly labeled Joe Biden and the Democrats as (1) the “dangerous other” who would be catastrophic for the future of the country and (2) “the establishment.”<sup>34</sup>

**Table 9.** Sentiment analysis for all phases in the US (Donald Trump)

Codes/Phases	Phase 1	Phase 2	Phase 3a	Phase 4a	Phase 5	Phase 3b	Phase 4b
Neutral	2	7	154	99	145	13	119
Negative	8	6	89	56	71	5	44
Positive	10	7	64	57	98	18	55
Mixed	6	5	36	37	50	4	45
<i>Total references:</i>	<i>26</i>	<i>25</i>	<i>343</i>	<i>249</i>	<i>364</i>	<i>40</i>	<i>263</i>

In summary, most of the populist political communication style dimensions associated with Trump’s tweets were linked to a mixed tone, which simplified complex issues related to the management of the crisis,

lives were saved as she danced in the Streets of Chinatown (SF) in late January. Biden agreed with her, but soon admitted that I was right.”; “I NEVER said people that are feeling sick should go to work. This is just more Fake News and disinformation put out by the Democrats, in particular MSDNC. Comcast covers the CoronaVirus situation horribly.”; “Joe Biden Plagiarizes President @realDonaldTrump is #Coronavirus Plan!”

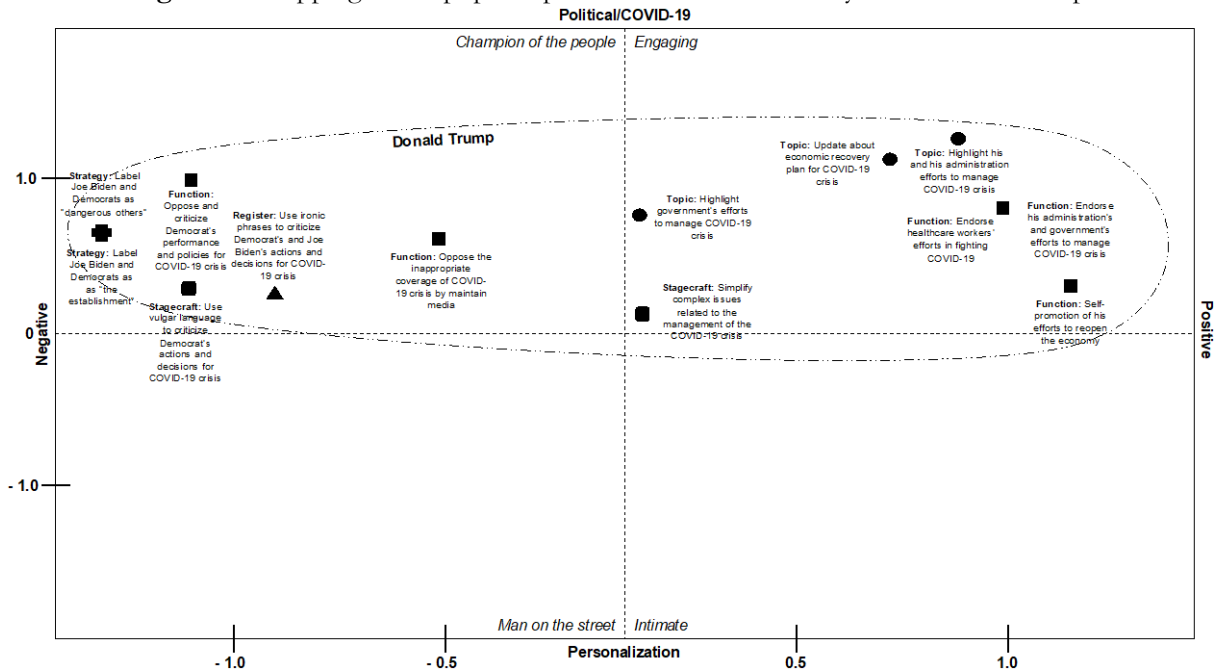
<sup>33</sup> “The Democrats would not have BANNED travel from heavily infected China, especially so early, therefore, far more people would have died. Corrupt Joe Biden now admits this!”; “Why isn’t the Fake News reporting that Deaths are way down? It is only because they are, indeed, FAKE NEWS!”; “Oh no, the Dems are worried again. The only one that can kill this comeback is Sleepy Joe Biden!”

<sup>34</sup> “Would destroy our American cities, and worse, if Sleepy Joe Biden, the puppet of the Left, ever won. Markets would crash and cities would bum. Our Country would suffer like never before.”; “Joe Biden is on a mission to eliminate as many American jobs as possible. No wonder union workers in Pennsylvania tell the Washington Examiner, [Joe Biden] scares me now.”; “With Biden drug prices will quadruple! After many years, the game is finally up for Big Pharma, and they’re happy about it!”



downplayed the health risks of COVID-19, and attempted to portray the Democrats as the “dangerous other” and “the establishment.” Therefore, his dominant populist political communication style was a combination of *champion of the people* and *engaging* (see **Figure 12**).

**Figure 12.** Mapping of the populist political communication style of Donald Trump



### 3.2.4. Summary of political leaders' populist communication style

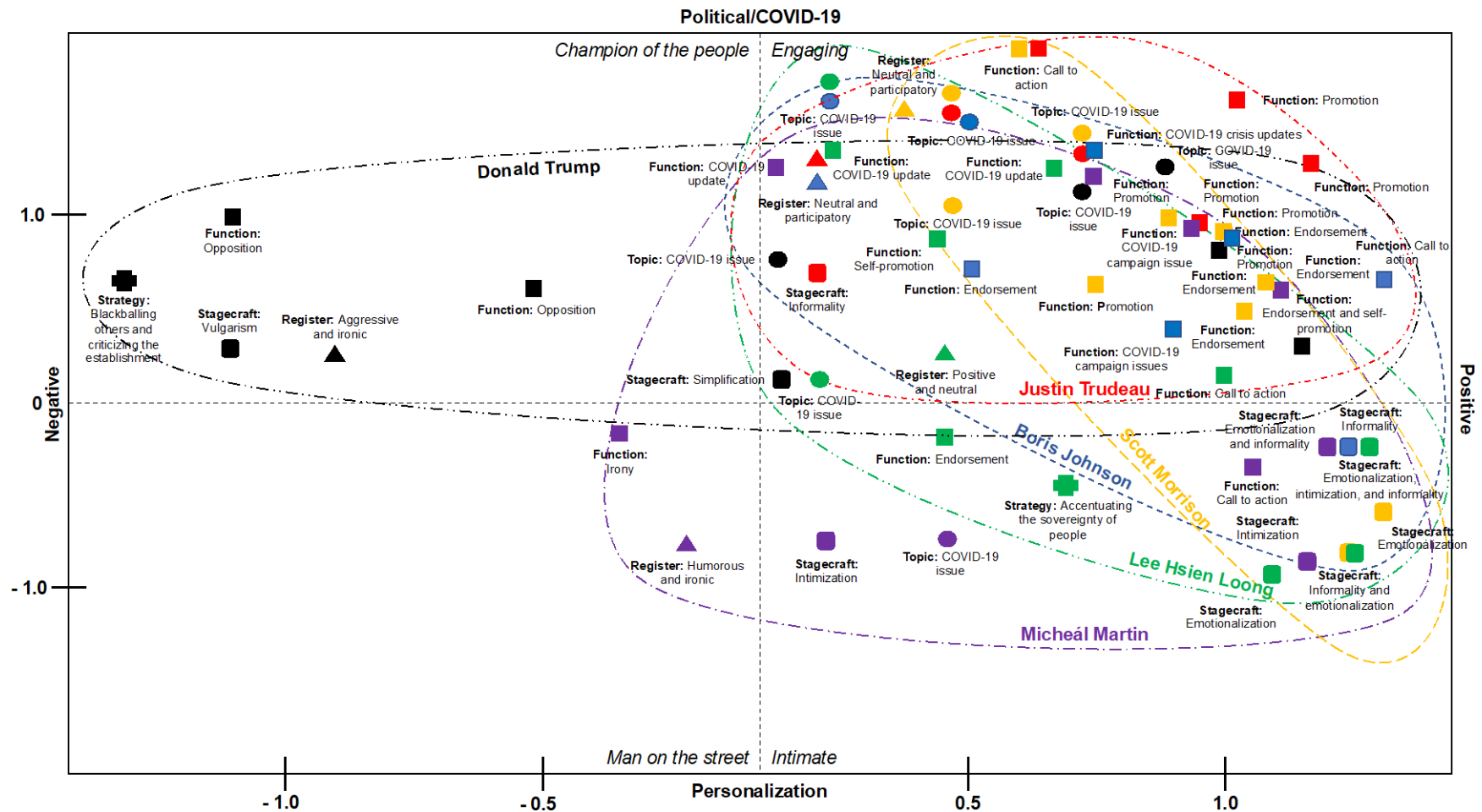
A summary of the mapping of the populist political communication styles for the selected political leaders is presented in **Figure 13** (Table E1 in Appendix E provides representative tweets for each political leader).

## 4. Study 2

### 4.1. Study 2 Methodology

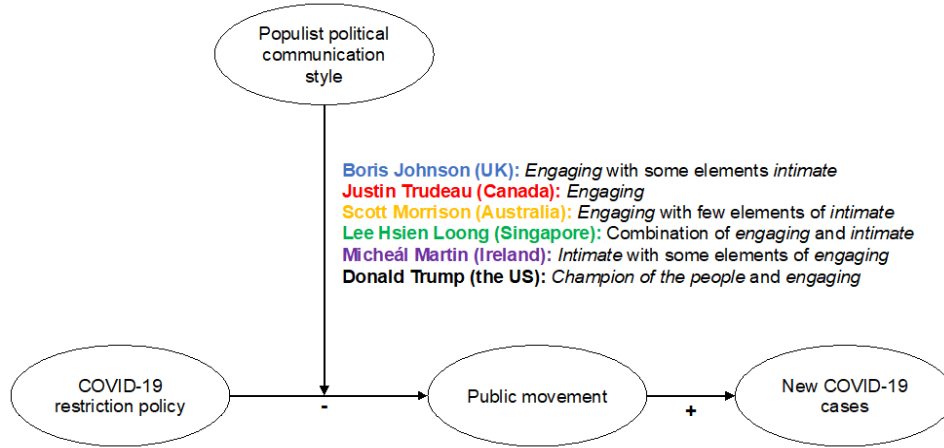
Building on Study 1, Study 2 adopted an empirical approach using dynamic panel data to investigate the relationship between leaders' populist political communication styles and public adherence to government policies for COVID-19 containment. During the crisis, each country had distinct sets of restrictions and political leaders who employed specific populist political communication styles, as shown in Study 1. Furthermore, the ongoing nature of the COVID-19 crisis enabled us to capture the influence of populist political communication on public adherence in a natural setting. Thus, we built a model to explore the correlation between public movements and government restrictions during the crisis. Then, we tested the model based on the available data regarding public mobility and government policy responses to the COVID-19 outbreak in the UK, Canada,

**Figure 13.** Mapping of the political leaders' populist political communication style



Australia, Singapore, Ireland, and the US. The objective of the model was to test the moderation effect of political leaders' communication styles on the relationship between government restrictions and public movements (see **Figure 14**), which also informed the proposition development.

**Figure 14.** Research model for Study 2



#### 4.1.1. Data collection

The data used in Study 2 were collected from the GCCMR and the OxCGRT. The data that captured the public movements and activities (i.e., GCCMR) were sourced from the COVID-19 Community Mobility Reports developed by Google Inc. [25]. These reports were regularly compiled to show how public mobility changed in response to government restriction policies during the COVID-19 crisis. The reports capture movement trends over time across various categories of places, such as retail and recreation, groceries and pharmacies, parks, transit stations, workplaces, and residential areas. The data collection was done daily to capture changes in mobility from a baseline measure based on the period preceding the COVID-19 crisis. Study 2 extracted mobility data from the reports on the UK, Canada, Ireland, Australia, Singapore, and the US to test the model.

The data for measuring government policy responses to the COVID-19 outbreak (i.e., OxCGRT) were sourced from the Government Response Tracker developed by the University of Oxford [42]. The platform systematically collects information on several common policy responses made by governments from 180 countries. The tracker's indicators include, among others, containment, economic response, and health systems. Among these, containment indicators are the most relevant to public mobility, because they track government policies related to school closures, workplace closures, public event cancellations, restrictions on gathering size, public transport closures, stay-at-home requirements, and restrictions on domestic and international travel.

Therefore, Study 2 focused on extracting data on containment indicators from the OxCGRT.

The public mobility data collected from the GCCMR were aggregated by averaging the data for all five phases for each country. This process was carried out for every location in each country (e.g., retail, recreation, groceries, and pharmacies) and then plotted using line charts for visual inspection and analysis. Next, the containment indicators from the OxCGRT were also extracted and aggregated by phases for each country. Given that several indicators were available (e.g., school and workplace closures), the values of all daily indicators were summed to create an overall measure of the COVID-19 containment level.

To ensure consistency with Study 1, data from the GCCMR and the OxCGRT were collected from February 15 to July 31, 2020. Given that government restrictions began in February 2020 in most of the selected countries, the data collection for Study 2 began on February 15, 2020. The resulting period included data covering 168 days for each of the six selected countries (the UK, Canada, Australia, Ireland, Singapore, and the US). Each record included a country ID, the number of daily public movements, the level of government restriction, and the number of new daily COVID-19 cases. The final dataset consisted of 1,260 records for each of the six selected countries over a period of 210 days.

#### 4.1.2. Operationalization and model construction

In Study 2, *public movement* was operationalized as the total number of movements recorded by the GCCMR (i.e., movements in retail stores and recreation areas, groceries and pharmacies, parks, transit stations, workplaces, and residential areas) each day for every country. *Government restriction policy* was operationalized as the total number of restriction levels recorded by the OxCGRT each day for every country. Government restriction policy was organized into seven categories: school closures, workplace closures, public event cancellations, restrictions on gatherings, public transport closures, stay-at-home requirements, and restrictions on internal movements. *New cases* were operationalized as the total number of newly confirmed COVID-19 cases each day for every country. *Populist political communication style* was coded as various dummy variables (engaging, intimate, and champion of the people) based on political leaders in different countries, as discussed in Study 1 (see **Table 10**). *Population* was operationalized as the total population of a country in 2020. **Table 10** presents the descriptive statistics and bivariate correlations among the variables included in Study 2.

**Table 10.** Coding of political communication styles

Populist Political Communication Style	Countries (Political Leaders)
<i>Engaging</i>	UK (Boris Johnson), Canada (Justin Trudeau), Australia (Scott Morrison)
<i>Intimate</i>	Ireland (Micheál Martin)
<i>Combination of Champion of the People and Engaging</i>	US (Donald Trump)
<i>Combination of Engaging and Intimate</i>	Singapore (Lee Hsien Loong)

#### 4.1.3. Data analysis

In Study 2, we paired days to form a lagged model, a dynamic panel data structure wherein a series of pairs of two adjacent days were compared. Here,  $Movement_{it}$ ,  $LeaderCommunication_{it}$ ,  $GovernmentRestrictionPolicy_{it}$ , and  $NewCases_{it}$  respectively represent the daily public movements, government restriction policy in a country, a political leader's populist communication style in a country, and the newly confirmed COVID-19 cases per day in a country. Hence, the general research model is proposed in the form of two equations:

$$\begin{aligned}
 Movement_{it} &= \alpha + \beta_1 GovernmentRestrictionPolicy_{it} + \beta_2 LeaderCommunication_{it} \\
 &\quad + \beta_3 GovernmentRestrictionPolicy_{it} \times LeaderCommunication_{it}, (1) \\
 NewCases_{it} &= \alpha + \beta_1 Movement_{it-1}, (2)
 \end{aligned}$$

where subscripts  $i$  and  $t$  denote the specific country and time, respectively.

The equations represent autoregressive-distributed lag models from panels with a few cross-section units ( $i = 4$  political communication styles), each observed for a relatively large number of periods ( $t = 168$  days). This situation is typical for the use of dynamic panel data. The approach focused on methods that can be used in the absence of any strictly exogenous explanatory variables or instruments and extend easily to models with endogenous variables, thus leading to a widely used class of generalized estimating equations (GEEs) for the analyzed panel data [28] (refer to Table F1 in Appendix F for details of the descriptive statistics and correlations).

Two separate analyses were conducted in Study 2. The first examined the influence of government restrictions on public movements and new daily COVID-19 cases (see **Table 11**). The second analysis examined the moderating effect of populist political communication style on the influence of restrictions on public movements and new daily COVID-19 cases (see **Table 12**). To address potential endogeneity issues, we conducted a difference-in-difference (DID) robustness test for Study 2 [29]. From October 2021, the governments of all six selected countries dropped their COVID-19 restrictions policies. This change in the COVID-19 restriction policies allowed for further examination of the different effects of government restriction policies on public

**Table 11.** Regression results of the influence of government restriction policy

Dependent variables:	Model 1 Public movement (GEE linear model)	Model 2 Public movement (GEE linear model)	Model 3 New cases (GEE negative binomial model)
<b>Independent variables:</b>			
Aggregate government restriction policy		-8.316*** (0.288)	0.250*** (0.010)
Restriction policy type:			
School closures	-64.580*** (8.754)		
Workplace closures	-34.068*** (4.673)		
Cancellations of public events	19.715 (18.038)		
Gathering restrictions	-6.497*** (2.721)		
Public transport closures	-28.726*** (5.503)		
Stay-at-home requirements	-21.552*** (7.062)		
Restrictions on internal movement	32.493** (14.318)		
<b>Control variable:</b>			
Population	5.804E-7*** (6.322E-8)	2.174E-7*** (1.523E-8)	1.459E-8*** (2.2358E-10)
Observations	871	871	871

Standard errors in parentheses; significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 12.** Regression results of the moderating effects

Dependent variables:	Model 4 Public movement (GEE linear model)	Model 5 Public movement (GEE linear model)	Model 6 New cases (GEE negative binomial model)
<b>Independent variables</b>			
Aggregate government restriction policy (AGRP)	-8.828*** (0.271)	-5.623*** (0.478)	
Public movement			22.289*** (4.021)
<b>Dummy variables of political communication style</b>			
Engaging	-37.424*** (5.283)		
Intimate	-73.784*** (6.220)		
Engaging & intimate	-117.639*** (4.872)		
<b>Interactions of IV and dummy variables</b>			
Engaging * AGRP		-1.722*** (0.607)	
Intimate * AGRP		-4.750*** (0.702)	
Engaging & Intimate * AGRP		-8.805*** (0.606)	
<b>Control variable</b>			
Population	3.146E-8 (2.271E-8)	3.146E-8 (2.270E-8)	0.00011*** (9.303E-6)
Observations	871	871	871

Standard errors in parentheses; significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

movements. Two factors were considered to determine the length of the examination timeframe for DID testing. First, the timeframe could not be too short; otherwise, it would not truly reflect behavioral changes in the public. Second, the timeframe should match the period when the governments in the six selected countries initiated their COVID-19 restriction policies, that is, February 15 to July 31, 2020; otherwise, the timeframe would accumulate too many unrelated activities. Therefore, we performed a robustness check by collecting data from the six selected countries from February 15 to July 31, 2022.

A new variable was created for two types of COVID-19 restriction policies, where “0” represents the

situation in which the restriction policies were applied in the period of 2020, and “1” represents the situation in which the restriction policies were not applied in the period 2022. The populations of each selected country were added as a control variable in the model. The DID results indicated that without governments’ COVID-19 restriction policies, public movements were more active ( $\beta = -9.104, p < 0.000$ , Model 7), consistent with the findings from the data analysis in Study 2 (see **Table 13**).

**Table 13.** Regression results of the robustness check

Dependent variables:	Model 7
	Public movement
<b>Independent variables</b>	
Change of restriction policy	-9.104*** (2.956)
<b>Control variable</b>	
Population	7.805E-9 (7.924E-9)
Observations	1742

Standard errors in parentheses; significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0$ .

## 4.2. Results

To slow the rapid spread of COVID-19, the analyzed governments implemented a wide range of containment measures, including closures of schools, workplaces, and public transport; restrictions on private gatherings, public events, international travel, and internal movements between cities/regions; and stay-at-home requirements. The governments showed considerable national-level variation in terms of which measures were adopted and how quickly they were implemented. Study 2 examined the effects of six different government restriction policies on public movement in Model 1. Further, the overall aggregate government restriction policies on public movement were investigated in Model 2 and those on new cases were examined in Model 3.

In Model 1, the results showed that government-initiated restriction policies on school, workplace, and public transport closures; gathering restrictions; and stay-at-home requirements all had significant influences on public movement, indicating that these policies work effectively on regulating the latter. However, policies on cancellations of public events did not show significant influence on public movements. Interestingly, the policy regarding restrictions on internal movements had a positive influence on public movements, indicating that the former had an opposite effect on the latter. This means that the signal restriction policy on internal movement cannot restrict public movements; thus, to become effective, such a policy should be used together with other restriction policies.

The results also showed that the aggregate government restriction policies had a significant effect on public movement ( $\beta = -8.316, p < 0.000$ , Model 2) and that public adherence to movement restrictions resulted in a

decrease in new cases ( $\beta = 22.289, p < 0.000$ , Model 6). In particular, the respective government policy indexes on COVID-19 containment increased gradually throughout the phases, starting in Phases 1 and 2, reaching the highest point in Phases 4 and 3b, and stabilizing in Phases 5 and 4b. In addition, public movements in most of the categories, including retail and recreation, transit stations, workplaces, and groceries and pharmacies, decreased gradually throughout the phases. The decrease in public movements started in Phase 2, reached the lowest point in Phases 4 and 3b, and started increasing again in Phases 5 and 4b (refer to Figures F1 and F2 in Appendix F for the visualization of the COVID-19 restrictions and public movements across the phases).

Next, to further understand the relationship between public movements and government policies for COVID-19 containment, the different communication styles were compared in Model 4 in terms of the relationship between government restrictions and public movements. First, the populist political communication style was coded as a set of dummy variables. For the first dummy variable (i.e., engaging), data were coded “1” if the populist political communication style was engaging and “0” if it was any other style. Similarly, the second and third dummy variables were coded as “intimate” and a “combination of engaging and intimate,” respectively. With the dummy variable coding, the reference group was the group coded 0 on all dummy variables. In this analysis, the reference group was a combination of “champion of the people” and “engaging.” The unstandardized regression coefficients for the populist political communication style dummy variables represented the difference effects between the mean value of the aggregate government restriction policies of each political communication style and that of the reference group (i.e., champion of the people and engaging). In addition, the influence of the interaction of government restriction policy and populist political communication style on public movements was examined in Model 5.

The results showed that the combination of engaging and intimate populist political communication styles ( $\beta = -8.805, p < 0.000$ , Model 5) had the highest correlation with public adherence to COVID-19 movement restrictions, followed by solely intimate ( $\beta = -4.750, p < 0.000$ , Model 5) and solely engaging ( $\beta = -1.722, p < 0.000$ , Model 5), relative to the combination of the champion of the people and engaging styles. In the UK, Canada, Australia, Ireland, and Singapore, where the political leaders relied on engaging, intimate, or a combination of engaging and intimate styles, the correlation was stronger than in the US, whose political leader



adopted a combination of champion of the people and engaging styles. Similarly, in Singapore, whose political leader used a combination of engaging and intimate styles, the relationship between public movements and government policy was stronger than those reported in the UK, Canada, Australia, and Ireland, where the political leaders adopted solely engaging or solely intimate populist communication styles. Therefore, we derive the following:

**Proposition 1.** “Engaging,” “intimate,” or a combination of “engaging and intimate” populist political communication styles have a stronger positive influence on public adherence to COVID-19 movement restrictions than a combination of “champion of the people and engaging” styles.

**Proposition 2.** A combination of “engaging and intimate” populist political communication styles has a stronger positive influence on public adherence to COVID-19 movement restrictions than solely “engaging” or solely “intimate” styles.

## 5. Discussion

### 5.1. Contributions to Theory and Research

This paper makes a twofold contribution to theory and research. First, it builds on research on political leadership in crisis [e.g., 10, 16, 48] and is the first to conduct a comparative study of six political leaders from six countries—the UK and Johnson, Ireland and Martin, Australia and Morrison, Singapore and Lee, and the US and Trump. We take a social media analytics approach to examine the influence of their populist communication styles on public actions for preventing a crisis. We develop propositions that explain the moderating role of political leaders’ communication styles in public adherence to COVID-19 movement restrictions. The first proposition posits that *engaging*, *intimate*, or a combination of *engaging* and *intimate* populist communication styles have a stronger influence on public adherence to COVID-19 movement restrictions than a combination of *champion of the people* and *engaging* styles. The second proposition states that a combination of *engaging* and *intimate* styles has a stronger influence on public adherence to COVID-19 movement restrictions than solely *engaging* or solely *intimate* communication styles.

Second, this paper contributes to the research on populist political communication [e.g., 4, 11, 14] by conducting a case study with a two-stage analysis (i.e., within-case and cross-case) of political leaders and their Twitter posts from January to July 2020. The objective of the within-case study is to understand the different populist political communication styles associated with the management of the COVID-19 crisis. The results suggest that political leaders primarily adopt a combination of populist communication styles: (1) *engaging* with

some intimate elements (e.g., Boris Johnson and the UK), (2) *engaging* with a few *intimate* elements (e.g., Scott Morrison and Australia), (3) a combination of *engaging* and *intimate* (e.g., Lee Hsien Loong and Singapore), (4) *intimate* with some *engaging* elements (e.g., Micheál Martin and Ireland), and (5) a combination of *champion of the people* and *engaging* (e.g., Donald Trump and the US) styles. The objective of the cross-case study is to theorize about the moderating roles of different political leaders' communication styles in public adherence to government policies for COVID-19 containment. The results indicate that the populist political is a moderator of the relationship between COVID-19 restriction policy and public movements; hence, the populist communication style can be seen as a useful political tool for crisis management.

### **5.2. Contributions to Practice and Public Policy**

Our study offers practical insights into which populist political communication styles are more or less suitable for crisis management, which informs both communication practice and public policy. First, during a crisis, political leaders should adopt *engaging* or *intimate* communication styles, or a combination of both, while avoiding negative and aggressive styles such as *champion of the people* and *man of the street*, as these styles can lead to public distrust and non-adherence to government policies. That is, to build trust and encourage adherence to government policies during a crisis, political leaders should focus on building non-political discussions around shared emotions and aspects of private life. Negative and aggressive communication styles, which focus on simplification, position taking, taboo breaking, and exploitation of fear and current news, should be avoided by political leaders as they can lead to public distrust and non-adherence to government policies. Second, the combination of populist communication styles used by political leaders is important. For example, Singapore's political leader's combination of *engaging* and *intimate* styles resulted in better public adherence to government policies during the COVID-19 crisis than other countries where only *engaging* or *intimate* styles were adopted.

### **5.3. Limitations and Future Research Directions**

This paper has several limitations. First, the generalizability of the results may be limited because only six countries were examined. Future studies should thus examine other countries that exhibit similar and dissimilar political dynamics and compare the outcomes of political leaders' communication styles on public perceptions of and behaviors related to the COVID-19 crisis. Researchers, for example, have looked at the public's reactions to the COVID-19 crisis on Weibo in China [53], and similar comparative analysis of the reaction of the public

in other countries would likely be illuminating. A global study of the COVID-19 crisis could provide further avenues of investigation associated with regional and cultural differences, which could be reflected in the populist political communication styles of government leaders. Moreover, the context of crisis communication we focus on is involving political communication. There is a parallel stream of research on corporate crisis communication on social media that could also likely benefit from a similar focus of communication style used on social media [e.g., 52, 56].

Second, this paper focused solely on the moderating role of political communication style in public adherence to COVID-19 movement restrictions and did not consider other key moderators. Therefore, future studies should theorize and consider other key moderators to provide deeper insights into political leaders' communication styles and the roles of other moderators in COVID-19 crisis management. For example, understanding the moderating role of a political leader's gender in their COVID-19 response would be a worthwhile future direction. This study also did not account for the interaction effects of multiple political leaders' communication styles or the conflicts they may generate. Hence, the outcomes that lead to mixed signals in message recipients could be of interest to future research. Moreover, national-level and individual-level cultural differences have been shown to profoundly differentially affect technology use and communication [37], and such difference were also shown in respect to willingness to use contact-tracing apps during COVID-19 [2]. Moreover, indications are that there were profound differences in the public's reaction to the COVID-19 pandemic across countries and cultures [3, 53], and there were even differences in reactions on Twitter to the pandemic based on occupation [55]. Thus, national- and individual-level cultural differences should also be investigated for the context of political communication style during crisis management on social media. Another opportunity is to consider the effects of different kinds of crisis communication on vulnerable populations, as such populations have unique needs and challenges during major crises like COVID-19 [cf. 20].

Third, this paper used GCCMR and OxCGRT to approximate public movements and government-initiated COVID-19 restrictions, respectively. However, these do not fully capture the environmental complexity associated with a certain government's response and public reactions to COVID-19. Thus, future studies should consider the use of mobile data and official government health site data to provide more accurate insights into

public movements and government responses. Furthermore, this study did not consider the moderating role of the number social media posts on influence on public adherence to COVID-19 movement restrictions; thus, future research should further explore whether the number of social media posts directly translates to a more effective influence on public adherence to government policies or restrictions.

## 6. Conclusion

This paper investigated the moderating role of leaders' different political communication styles in encouraging public adherence to government policies for COVID-19 containment. It adopted a mixed-methods approach that combined (1) inductive theory building with a nested multicase study design for Study 1 and (2) an empirical study in a natural setting for Study 2. The approach in Study 1 featured a two-stage analysis (i.e., within-case and cross-case) of Twitter posts from six political leaders in six countries. In Study 2, a model was built to explore the correlation between public movement and government restrictions during the COVID-19 crisis from January 2020 to July 2020 using data from the GCCMR and the OxCGRT. Based on the results of both studies, propositions were developed explaining the moderating roles of distinct populist political communication styles on the influence of government restrictions on public movements.

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## Appendix A: Literature Review

**Table A1.** Review of research streams on political leadership in crisis and social media for crisis management

Study & outlet*	Purpose and Theoretical Perspective	Findings and Contributions	Variables and relationships	Methods and analyses
Adam et al. [1], newspaper (CM&SM)	This article contrasts the different attitudes of Democratic and Republican lawmakers on government measures and racial discrimination through inductive analysis of the tweets sent by lawmakers during the COVID-19 outbreak.	The Democratic Party criticized the US government's response to COVID-19. Part of the Republican Party praised the government's actions. A small number of tweets link the coronavirus to China or Asians. The Democratic Party expressed concerns about racism or other problems with these terms. The Republicans think this is not a problem.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>COVID-19 related Twitter posts as a percentage of all tweets by Democratic and Republican lawmakers</li> <li>Higher levels of audience engagement</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>The severity of the COVID-19 crisis (January to March) (+) → Coronavirus-related Twitter posts as a percentage of all tweets by Democratic and Republican lawmakers</li> <li>Racism or discrimination (+) → Higher levels of audience engagement</li> </ul>	<b>Method(s):</b> Qualitative coding (148,130 tweets from members of US congress) <b>Analysis:</b> Inductive content analysis <b>Context:</b> US <b>Channel(s):</b> Twitter
Ajzenman et al. [2], journal (CM&SM)	This article details President Bolsonaro's actions against the local social distancing measures implemented by each Brazilian state. It uses a standard econometrics method to analyze pro-Bolsonaro states and shows that the president's words greatly influenced these states.	Leaders' recommendations on COVID-19 are taken seriously by followers. In Brazil, in pro-Bolsonaro states, his presidential acts had a stronger effect on relaxing social distancing than in other states. When the presence of the media and the greater the penetration of the Internet, opinion leaders (such as TV presenters) play a more vital role in spreading prevention or counter-prevention information than do political leaders.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Social distancing</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Pro-Bolsonaro (+) → social distancing</li> <li>Media presence and internet penetration (+) → social distancing</li> </ul>	<b>Method(s):</b> Regression analysis using publicly available on social distancing presidential election data from 3,975 municipalities in Brazil <b>Analysis:</b> Ordinary least squares <b>Context:</b> Brazil <b>Channel(s):</b> <ul style="list-style-type: none"> <li>Social distancing index (<a href="https://inloco.com.br/">https://inloco.com.br/</a>)</li> <li>2018 Presidential election data from Superior Electoral Court</li> </ul>
Boin et al. [5], journal (PLC)	The authors identify two factors which are significant in determining the result of post-crisis blame game: 1) To what extent should the responsibility for poor crisis management be attributed to leaders and governments	The authors use the case of President George W. Bush and the aftermath of Hurricane Katrina to emphasize the importance of political leader's leadership style on the political management of inquiries. They propose a framework to illustrate the interaction between leadership styles and crisis-induced blame game, which may help explain the dynamics and outcome of this blame game for other cases. They summarize different types of	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Pressures of accountability and blaming (vulnerability to crises)</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Need for control and personal involvement, sensitivity to context</li> <li>High need for control and personal</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Literature review</li> <li>Case studies</li> </ul> <b>Context:</b> US

	<p>(through inquiries, press, legislators); 2) Political astuteness of leaders' blame management behavior during and in response to crisis investigation. They focus on the second factor and explore how it relates to the first one. They analyze the relationship between two dimensions of leadership style: a leader's need for control and a leader's sensitivity to context and crisis management behaviors.</p>	<p>leadership style and related crisis behavior and blame implications. They summarize three challenges faced by leaders in respond to post-crisis management: 1) Public Inquiries (stonewalling versus cooperating); 2) Public criticism (denying versus acknowledging responsibility); 3) Political verdicts (persevere versus resign)</p>	<p>involvement (-) → vulnerability to rapid onset crisis</p> <ul style="list-style-type: none"> <li>• High sensitivity to context (+) → vulnerability to rapid onset crisis</li> <li>• High need for control and personal involvement, high sensitivity to context (-) → vulnerability to slow-building crises</li> <li>• High need for control and personal involvement, low sensitivity to context (+) → vulnerability to slow-building crises</li> <li>• Low need for control and personal involvement, high sensitivity to context (+) → vulnerability to rapid-onset crises</li> <li>• Low need for control and personal involvement, high sensitivity to context (-) → vulnerability to slow-building crises</li> <li>• Low need for control and personal involvement, low sensitivity to context (+) → vulnerability to rapid-onset crises</li> <li>• Low need for control and personal involvement, low sensitivity to context (+) → vulnerability to slow-building crises</li> </ul>	
Boin et al. [6], book section (PLC)	<p>This chapter first introduces the analysis of the financial crisis from 2007 to 2010, and then establishes a framework to analyze the main problems faced by political leadership.</p>	<p>Politically crisis is a mixed-motive game for incumbent governments that offering executive leaders the opportunity to show they are calm, composed, and committed when under pressure; as well as being a target in the various blame game that contemporary crises inevitably elicit. Leaders or government cannot well handle the crisis pressure. Crises motivate government reform. The first step the leader took was to avoid punishment. The belief system is very important for some leaders to resolve the crisis.</p>	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>• Stock</li> <li>• Measure</li> </ul> <p><b>IVs and relationships:</b></p> <ul style="list-style-type: none"> <li>• Performance: perform well during the crisis, their stock goes up crisis becomes worse, they get blamed</li> <li>• Belief system: leader's belief will influence the future measure they take in the crisis</li> </ul>	<p><b>Method(s):</b></p> <ul style="list-style-type: none"> <li>• Comparative case study</li> <li>• Literature review</li> <li>• Survey</li> </ul> <p><b>Context:</b> Europe</p> <p><b>Channel(s):</b> Speech Policy</p>
Boin et al. [7], periodical (PLC)	<p>This article lists ten executive tasks of crisis management selected from extensive studies of crisis management.</p>	<p>This article provides a comprehensive framework for assessing leadership performance in times of crisis.</p>	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>• Leadership performance in times of crisis</li> </ul> <p><b>IVs and relationships:</b></p>	<p><b>Method(s):</b> Literature review</p> <p><b>Context:</b> Global</p>



			<ul style="list-style-type: none"> <li>• Conditions created to facilitate early recognition</li> <li>• Creating, facilitating, and rehearsing a sensemaking method</li> <li>• Consider carefully which decisions they should make and decision making after some form of due process</li> <li>• Monitor and assess vertical and horizontal coordination Ensure coordination effective and intervene where coordination was lacking or dysfunctional</li> <li>• Monitor the state of critical systems and connections Acquire the relevant expertise</li> <li>• Interpret the crisis clearly and provide detailed explanation about how to lead community out of crisis</li> <li>• Cooperate with communications professional to disseminate correct and timely information to the public</li> <li>• Try to explain their actions transparently and constructively before and during the crisis</li> <li>• Record the crisis and open to negative feedback Reflect and learn from lessons</li> <li>• Actively participate in crisis preparing</li> </ul>	
Boin and Hart [4], journal (PLC)	This article investigates the persistent tensions between the expectations and realities of crisis leadership. It explores the notion that crises in general represent key opportunities for reform. The authors argue that the opportunities for reform during a crisis are smaller when there is a mismatch between requirements for effective crisis leadership and reform.	The probability of reform caused by the crisis is smaller than previously thought. Management is a leadership issue. There are gaps between expectation and reality of crisis leadership. Effective crisis management is at odds with effective reform. Leaders need to formulate a crisis- management philosophy, avoid reforms as much as possible, and prepare for long term exceptional challenges. Leaders should not push reform without considering opposite arguments. If they use the crisis to ignore critics, they will mobilize their own opposition at a time when their performance is already under scrutiny. Crisis-induced reform creates exceptional challenges for the long term.	N/A	<b>Method(s):</b> Literature review  <b>Context:</b> Global
Bligh et al. [3], journal (PLC)	This article digitally analyzes the language changes in President Bush's speeches before	The great anxiety and uncertainty caused by terrorist attacks will prompt people to appreciate the 'strong' lead-	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Charismatic leadership</li> <li>• Media's commentary</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>• Literature review</li> <li>• Induction data analysis</li> </ul>

	and after the 9/11 crisis through a computerized program.	ers who are usually associated with charismatic transformational leaders. Charismatic leaders will pay attention to the connection between the present and the past and mention their similarities with followers and their identification with followers to inspire followers to identify with the leader's future vision. At the same time, charismatic leaders will be more active, and speeches will mention adversity, including hardship, to mobilize followers to act. After the 9/11 crisis, the charismatic language adopted by President Bush did make him highly recognized by the public.	<ul style="list-style-type: none"> <li>• Fluctuations in the polls</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• The continuity between the past and the present leader–follower similarity values, beliefs, and faith-based principles adversity, including hardship and blame (+)→ charismatic leadership</li> <li>• Markedly less concrete and tangible (-)→ charismatic leadership</li> <li>• Changes in the President's rhetoric (+)→ media's commentary</li> <li>• Charismatic content of the previous week (+)→ fluctuations in the polls</li> </ul>	<ul style="list-style-type: none"> <li>• Computer screening</li> </ul> <b>Context:</b> US <b>Channel(s):</b> <ul style="list-style-type: none"> <li>• Public speeches</li> <li>• Radio addresses</li> </ul>
Bol et al. [8], journal (PLC)	This article compares the political attitudes of respondents who filled in the questionnaire right before the enforcement date and those who did right after, using data from a unique online survey fielded throughout the months of March and April 2020 on representative samples of the population of 15 Western European countries (a period in which seven countries started national lockdowns).	Although this policy has important negative consequences for the population, both human and economic, this article finds that respondents who took the survey right after the enforcement date show higher levels of both specific and diffuse political support than those who took it right before. First, lockdowns have increased vote intentions for the party of the Prime Minister/President by about 4 per cent points. Second, they increased trust in government and satisfaction with democracy by about 3 per cent on the response's scale. These effects are particularly interesting when considering that these two groups of respondents are very similar in terms of socio-demographics and unrelated political attitudes like ideology and political interest.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Political support</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Lockdown announcements (+)→ political support</li> <li>• School closing (+)→ political support</li> <li>• Workplace closing (+)→ political support</li> </ul>	<b>Method(s):</b> Survey (1000) <b>Context:</b> Europe (15 Western European countries)
Chen et al. [10], journal (CM&SM)	This article set up a theoretical model of CEGSM to explain that emotional value will alleviate the effects of media richness, dialogic loops, and content types, which in turn, influence citizen engagement. They use software coding to statistically analyze each post and analyze the effects of emotional valence on public participation.	This study investigates how to promote citizen engagement through government social media during the COVID-19 crisis. Media richness negatively predicts citizen engagement, but dialogic loop facilitates engagement. Information relating to the latest news and the government's handling positively affects citizen engagement. All relationships were contingent on the emotional valence of each Weibo post.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Level of citizen engagement through government social media (CEGSM)</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Media richness (-)→ level of CEGSM</li> <li>• Dialogic loop (+)→ level of CEGSM</li> <li>• Latest news (+)→ level of CEGSM</li> <li>• Social media technology features require the public to click more to obtain supplementary information on pictures or videos (-)→ level of CEGSM</li> </ul>	<b>Method(s):</b> Qualitative coding <b>Analysis:</b> Content analysis of 1411 Sina Weibo post from "Healthy China" account <b>Context:</b> China <b>Channel(s):</b> Sina Weibo
Christensen et al. [11],	This article analyzes the reac-	The political structure of Norway has hindered his cross-sectoral activities. For terrorist organizations, the	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Crisis management</li> </ul>	<b>Method(s):</b> Qualitative con-

journal (PLC)	tions to the attacks of political leaders and police leaders using descriptive crisis management theory. It explains the crisis management from organizational, instrumental, and cultural-institutional perspective.	Prime Minister blames the government and promises follow-up studies to preserve the legitimacy of his leadership. The established organizational structure cannot cope with major disasters or crises. What it needs is a flexible response, and more cooperation across departments and levels. Structural and cultural constraints can influence the strategies that leaders make. When mistakes in measures are found, they will be classified as insufficient leadership. Response to the terrorist attacks is characterized by complex interactions between mutually influential factors, by dynamics between symbolic factors and structural and cultural influence.	<ul style="list-style-type: none"> <li>• Popular demand</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Cultural</li> <li>• Structural</li> <li>• President: Restorative speech in response to terrorism</li> </ul>	<p>tent coding (150 unique references and documents)</p> <p><b>Analysis:</b> Qualitative content analysis</p> <p><b>Context:</b> Norway</p> <p><b>Channel(s):</b></p> <ul style="list-style-type: none"> <li>• Policy documents</li> <li>• Speeches by central actor</li> <li>• Mass media coverage</li> </ul>
Conover and Sigelman [12], journal (PLC)	This article establishes a TRA model through data analysis and analyzes the influence of different independent variables on the degree of public support for policymaking.	The sources of leadership: diffuse support for the presidency and specific support for the incumbent President. Support or non-support for policies cannot reflect the president's influence. But the president's opinion can indeed have an impact on foreign policy. Policies involving military operations will weaken the influence of the president's own image. Other political orientations of the public will play a decisive role.	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>• Policy (no military action)</li> </ul> <p><b>IVs and relationships:</b></p> <ul style="list-style-type: none"> <li>• Diffuse support for the presidency (+) → policy with no military action</li> <li>• Political variables (+) → policy with military action</li> </ul>	<p><b>Method(s):</b></p> <ul style="list-style-type: none"> <li>• Literature review</li> <li>• Survey (416 residents from Lexington, Kentucky through a telephone poll)</li> </ul> <p><b>Analysis:</b> Structural equation modelling</p> <p><b>Context:</b> Iran</p>
Dada et al. [13], journal (PLC)	This article analyzes the speeches made by 20 heads of government around the world to highlight the differences between men and women leaders in discussing COVID-19.	Five primary themes emerged across a total of 122 speeches on COVID-19, made by heads of government: economics and financial relief, social welfare and vulnerable populations, nationalism, responsibility and paternalism, and emotional appeals. Although all leaders described the economic impact of the pandemic, women spoke more frequently about the individual effects. Women leaders were also more often found describing a wider range of social welfare services, including mental health, substance abuse and domestic violence. Both men and women from lower-resource settings described detailed financial relief and social welfare support that would impact most of their populations.	N/A	<p><b>Method(s):</b> Qualitative coding</p> <p><b>Analysis:</b> Inductive analytical coding of speeches for specific themes based on language and content</p> <p><b>Context:</b></p> <ul style="list-style-type: none"> <li>• Bangladesh</li> <li>• Belgium</li> <li>• Bolivia</li> <li>• Brazil</li> <li>• Dominican Republic</li> <li>• Finland</li> <li>• France</li> <li>• Germany</li> <li>• India</li> <li>• Indonesia</li> <li>• New Zealand</li> <li>• Niger</li> <li>• Norway</li> </ul>

				<ul style="list-style-type: none"> <li>• Russia</li> <li>• South Africa</li> <li>• Scotland</li> <li>• Saint Maarten</li> <li>• United Kingdom</li> <li>• US</li> <li>• Taiwan (local leaders)</li> </ul> <p><b>Channel(s):</b> Official, public national addresses, statements, or speeches</p>
Davis [14], journal (PLC)	This article uses an inductive method to divide the charismatic language used by President Bush in the face of crisis. A comparative analysis of the president's performance and followers' approval ratings after the 9/11 crisis and Hurricane Katrina crisis were also made.	The charisma of the leader and the approval rate of the followers are sensitive to the crisis. The influence of charismatic language on followers decreases with the time elapsed after the crisis, increasingly lower levels of perceived leader effectiveness. The characteristics of the crisis, such as the cause, threat level, source of responsibility, etc., are the determinants of the leader's charming and the follower's perception of the leader's efficacy.	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>• Charismatic leadership</li> <li>• Approval ratings</li> </ul> <p><b>IVs and relationships:</b></p> <ul style="list-style-type: none"> <li>• Crisis (+) → charismatic leadership</li> <li>• Charismatic rhetoric (+) → approving ratings</li> <li>• Time that passed following each crisis (-) → approval ratings</li> </ul>	<p><b>Method(s):</b></p> <ul style="list-style-type: none"> <li>• Literature review</li> <li>• Computerized qualitative coding (124 major speeches and radio addresses from President Bush regarding Hurricane Katrina crisis)</li> </ul> <p><b>Analysis:</b> Content analysis</p> <p><b>Context:</b> US</p> <p><b>Channel(s):</b> Major speeches and radio addresses delivered</p>
Doogan et al. [15], journal (CM&SM)	This article examines the tweets on COVID-19 non-pharmaceutical interventions (NPIs) in six countries and compares the trends in public perceptions and attitudes toward NPIs. The authors aim to identify factors that influenced public perceptions and attitudes about NPI regimes during the early phases of the COVID-19 pandemic. They use the topic model MetaLDA method to construct the topic document set, and to encode and qualitatively analyze it.	The decline in the public's compliance with nonprofit organizations appears to be due to the complexity of the implemented system and the lack of understanding of the system. The analysis of social media provides government and health authorities with insights on how to promote their plans and critical views on their communication strategies.	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>• Implemented restrictions early</li> <li>• Compliance with NPIs</li> </ul> <p><b>IVs and relationships:</b></p> <ul style="list-style-type: none"> <li>• Obtained community support and have willingness to comply (+) → implemented restrictions early</li> <li>• Less willing and protracted debates (-) → implemented restrictions early</li> <li>• Government's ability to respond to key information (+) → compliance with NPIs</li> </ul>	<p><b>Method(s):</b> Automated qualitative coding (777,869 English language tweets)</p> <p><b>Analysis:</b> Induction and comparison through topic model MetaLDA</p> <p><b>Context:</b></p> <ul style="list-style-type: none"> <li>• Australia</li> <li>• Canada</li> <li>• New Zealand</li> <li>• Ireland</li> <li>• United Kingdom</li> <li>• US</li> </ul> <p><b>Channel(s):</b> Twitter</p>

Druckman et al. [16], journal (CM&SM)	This article proposes models of COVID-19 attitudes that can be used to analyze the factors which may affect the changes in attitudes of the two political parties in regards to the epidemic.	Strong evidence that emotional polarization drives the response to the crisis. Many COVID-19 infections, the partisan gap disappeared. The policy polarization among the public has not increased.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Attention to disease</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Severity of the epidemic (+) → attention to disease</li> </ul>	<b>Method(s):</b> Literature review <b>Context:</b> US <b>Channel(s):</b> Mainstream media
Farazmand [17], periodical (PLC)	Surprise management theory used in this article draws on dynamic systems theories and chaos and complexity theories. This article further demonstrates the development and application of ‘surprise management’ theory to manage the future crisis and chaos. This article introduces the theory of surprise management which includes its principles, conditions for development, its requirements, and the capacity.	There are three major failures identified and discussed in the article during different stages: 1) planning and preparedness—a failure of politics and administration; 2) response failure—not making decision in time, a lack of intergovernmental coordination and ‘politics of neglect’; 3) failure of leadership and management in response and recovery—leadership crisis and chaos transformation.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Effective surprise management</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Adequate resource</li> <li>• Using crisis conditions as opportunities to train and prepare capacities</li> <li>• Provide extensive, specialized, and rigorous training</li> <li>• Autonomy and authority in performance</li> </ul>	<b>Method(s):</b> Literature review <b>Context:</b> Global
Favero and Pedersen [18], journal (CM&SM)	This article uses preregistration survey experiments from US residents to test how information prompts affect people’s willingness to socially distance themselves.	In the context of the COVID-19 pandemic, social distancing represents a pro-social behavior. Self-interest is more effective than pro-social motivation or empathy in attracting people to social distancing. The COVID-19 information prompt will not affect the reported social distance, or even the probability of participation in social distancing.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Duration to maintain social distancing</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• High empathy (+) → duration to maintain social distancing</li> </ul>	<b>Method(s):</b> Survey-based experiment (1,502 responses) <b>Analysis:</b> ANOVA and ordinary least squares <b>Context:</b> US
Galaz et al. [19], journal (PLC)	This article first compares the difference between cascading ecological crises (CEC) and ordinary social ecological crisis. Based on these differences, it analyzes the challenges that leadership will face in accordance with the development trend of the crisis.	Cascading ecological crises is the sudden ecological crisis that triggered a cross departmental and geographic crisis. Scholars or national policy makers have insufficient ability to respond to political problems caused by emergent ecological problems. CEC is difficult to predict due to its complexity, which tests the decision-making and coordination capabilities of leaders. At the same time, in a crisis, leaders are vulnerable to blame, which affects reform and learning after the crisis. In severe cases, institutions and leadership will be severely weakened. Compared to other contingencies, there are a few major differences in ‘cascading’ ecologic crises resulting from the combination of a lack of early warnings, abrupt ecological change, and the mismatch between decision-making capabilities and the cross-scale dynamics of social-ecological change. Cascading ecological crises	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Crisis judgement</li> <li>• Crisis management</li> <li>• Leadership challenges</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Biophysical process, human activity spread, the scope of the observed crisis, projected crisis scope</li> <li>• Early warning, sense making, decision making, meaning making, termination, and accountability and learning</li> <li>• Crises phases</li> </ul>	<b>Method(s):</b> Literature review <b>Context:</b> Global

		pose a range of difficult institutional and political leadership challenges seldom explored in the literature. They are notoriously hard to detect in advance due to their underlying complexities, and poor monitoring systems. They challenge the decision-making and coordinating capacities of actors at multiple levels of societal organization due to their cascading and recombining capacities. They are prone to blame games, which hinder post-crisis learning and reform.		
Gharavi [21], book (CM&SM)	This article selects samples by filtering keywords and perform data analysis on these tweets. It compares the changes in Twitter and the development of COVID-19 and analyze the early warning role that Twitter can play.	Acting requires early warning signs to detect an outbreak. According to Twitter's estimates, states have shown a time lag between the informal outbreak and the official outbreak. When epidemic behavior patterns appear in the media, they are early warnings of local outbreaks.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>The number of tweets</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Official outbreak (+) → number of tweets</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Literature review</li> <li>Descriptive analysis</li> </ul> <b>Analysis:</b> Data induction <b>Context:</b> US <b>Channel(s):</b> Twitter
Genovese [20], journal (PLC)	The author separately analyzed the pressure and crisis management methods that leaders leverage when facing a crisis. In discussing pressure, the author lists various pressures, point by point, and gives examples or quotes previous opinions.	The US President's pressure in the time of crisis includes tight time, serious consequences, incomplete information, psychological prejudice, complex events, communication difficulties, pressure, and bureaucratic resistance. To alleviate the crisis of conflict with other countries, leaders can try to promote multidomain communication between the two parties and achieve effective high-level dialogue.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Possibility of war</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Crisis control system (-) → Possibility of war</li> </ul>	<b>Method(s):</b> Literature review <b>Context:</b> US
Green et al. [23], journal (CM&SM)	This article analyzes the tweets of people from both major US parties during the COVID-19 pandemic. Analyze the difference between the two parties' tweets and the actual situation.	The polarized words and deeds of political elites can hinder effective responses to public health crises. There is a major difference in the number and content of tweets sent by the two major US political parties. Political consensus on COVID-19 failed to materialize quickly in the US.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Party polarization</li> <li>Consistent public behavior</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>The severity of the crisis (+) → party polarization</li> <li>Party elites reach consensus on public health crisis (+) → consistent public behavior</li> </ul>	<b>Method(s):</b> Quantitative and qualitative coding (30,887 tweets from US Congress members) <b>Analysis:</b> Descriptive and content analysis <b>Context:</b> US <b>Channel(s):</b> Twitter
Grossman et al. [24], journal (CM&SM)	The authors examine how political partisanship mediates the relationship between governors' COVID-19 communications and residents' voluntary compliance with physical distancing policies. They do so by using county-	Governors' recommendations for residents to stay at home preceded stay-at-home orders and led to a significant reduction in mobility that was comparable to the effect of the orders themselves. Effects were larger in Democratic- than in Republican-leaning counties—a pattern more pronounced with Republican governors. Democratic-leaning counties also responded more strongly to recommendations from Republican than	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Median time at home, min</li> <li>Log median time at home</li> <li>Share of devices home all day</li> <li>Log distance traveled</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>COVID-19 messages</li> </ul>	<b>Method(s):</b> Quantitative coding of mobility data and Google trends and qualitative coding of tweets from US governors <b>Analysis:</b> Regression and content analyses

	level data on citizens' mobility patterns, past electoral returns that serve as proxy for county-level partisan preferences, and the timing of communications about COVID-19 by US state governors.	from Democratic governors. Political partisanship influences citizens' decisions to voluntarily engage in physical distancing in response to communications by their governor.	<ul style="list-style-type: none"> <li>• Social distancing messages</li> <li>• Stay-at-home messages</li> <li>• Post social distancing message</li> <li>• Post stay-at-home message</li> <li>• Trump vote margin</li> </ul>	<b>Context:</b> US <b>Channel(s):</b> Twitter
Haman [25], journal (CM&SM)	The authors collect Twitter data from global leaders and analyzed their use during the COVID-19 pandemic. Through data analysis, the growth of the leaders' followers was compared over time.	Nearly 67% of the leaders of UN member states have tweeted about COVID-19 on Twitter. During the outbreak of the epidemic, the account followers of leaders of all countries increased. The influence of leaders on the public is believed to have risen. Citizens intend to obtain information from social media (in this case, Twitter).	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Follower of incumbent leader</li> <li>• The language used</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Time (during outbreaks in various countries) (+) → follower of incumbent leader</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>• Literature review</li> <li>• Quantitative analysis (50,872 tweets and number of followers from 143 state leaders)</li> </ul> <b>Analysis:</b> Content and regression analysis <b>Context:</b> Global <b>Channel(s):</b> Twitter
Hübner [26], journal (PLC)	The article argues that the German crisis management regarding the Eurozone is largely driven by ideas that preserve German norms but do not live up to the challenges faced during crisis. Germany's insistence on its own interests and norms hinders the delivery of a comprehensive crisis management of the Eurozone crisis within the European Union.	The case of Germany is illustrative, as the same small political party coalition, CDU/CSU, with the same chancellor but different governing party partners was involved in the management of two far-reaching economic crises. The crisis management in both cases demonstrates similar patterns. In the first phase of crisis management, both governments tried to ignore the range and depth of the crisis and tried to explain it away as a special circumstance. In the second phase, they were willing to accept that both crises pose fundamental challenges but only implemented piecemeal measures and tried to procrastinate making any far-reaching decisions.	N/A	<b>Method(s):</b> Literature review <b>Context:</b> Germany
Janssen and van der Voort [27], journal (CM&SM)	This article defines agility and adaptability and compares their differences from many aspects in the context of crisis management. The case of the Netherlands is used to analyze the country's approach of emergency crisis to understand adaptive governance in practice.	In the context of crisis management, adaptive governance requires oscillation between decentral and central decision-making structures. Agility can hinder adaptability. Agility may come at the cost of adaptability. Bureaucracy and adaptability can go hand in hand. Agile and adaptive governance are not the same. Culture, law, and technology might hinder adaptiveness.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Responds</li> <li>• Government's ability to respond to change</li> <li>• Quality of decision-making</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Time (+) → responds</li> <li>• Adaptive governance (+) → government's ability to respond to change</li> </ul>	<b>Method(s):</b> Inductive theory building based on observations of responses to COVID-19 in the Netherlands <b>Analysis:</b> Critical analysis <b>Context:</b> The Netherlands <b>Channel(s):</b> Regular press conferences

			<ul style="list-style-type: none"> <li>Decision speed (-) → quality of decision-making</li> </ul>	
Johnson and Williams [28], journal (PLC)	This article discusses the gender in political leadership during COVID-19 pandemic.	Whereas male political leaders historically drew on their traditional role as the male head of household to display forms of masculine protectionism toward citizens, women leaders are now able to draw on their traditional motherly role—for example, as the member of the household who traditionally cares for the sick—to display forms of feminine protectionism. As a result, international women leaders have managed to leverage women's role in the home to their advantage in the political sphere. Ardern is depicted as providing the maternal comfort that we seek when we are ill—the one to comfort us and lessen our anxieties.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Management of crisis</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Feminized private (home) (+) → management of COVID-19 crisis</li> <li>Masculine public (economy) (-) → management of COVID-19 crisis</li> </ul>	<b>Method(s):</b> Literature review <b>Context:</b> <ul style="list-style-type: none"> <li>US (Donald Trump)</li> <li>New Zealand (Jacinda Ardern)</li> </ul>
Jong et al. [29], journal (CM&SM)	The authors assess which MH17-related activities or absence of certain activities of Dutch mayors were discussed in newspapers and tweets, and how these activities were evaluated at different stages. The authors assess and compare how mayors were perceived and evaluated by analyzing both regular and social media.	Most newspaper articles published and tweets during stage I & stage II & stage III were labelled as “neutral.” The number of tweets fluctuates during the first stage and the second stage. Several peaks are related to National Memorial Anniversary. The ‘meaning making,’ ‘remembering,’ and a ‘listening ear’ were used to support practical needs from private citizens. Mayors should facilitate both public and private activities that are not only about crisis management, but also about healing processes from disaster to restoration.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Perceived evaluations of mayors</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Not attend a memorial service (-) → perceived evaluations of mayors</li> <li>Remark about the daughter of President Putin (-) → perceived evaluations of mayors</li> <li>Participate in local gatherings (+) → perceived evaluations of mayors</li> <li>Visit and support victims' families (+) → perceived evaluations of mayors</li> </ul>	<b>Method(s):</b> Qualitative coding (299 unique newspaper articles & 1698 tweets, including 709 retweets) <b>Analysis:</b> Content analysis <b>Context:</b> The Netherlands <b>Channel(s):</b> <ul style="list-style-type: none"> <li>Newspapers</li> <li>Twitter</li> </ul>
Kapucu [30], journal (PLC)	This article analyzes the requirements for leaders when they are facing a crisis based on previous literature records. It lists the presidential records from the second half of the 20th century to today and uses a holistic approach to conduct a wide range of classification assessments.	The President's leadership in emergency and crisis management: effectively distinguish the needs and priorities of disaster management, select qualified disaster management leaders, implement quality and specific support. In US history, there are two presidents with outstanding performance in dealing with major crises: Jimmy Carter and Bill Clinton.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Qualified presidential involvement in emergency management</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Distinguish the needs and priorities of disaster management (+) → crisis management</li> <li>Selection of well-qualified disaster management leaders (+) → crisis management</li> <li>Implementation of programs and timely intervention (+) → crisis management</li> </ul>	<b>Method(s):</b> Literature review <b>Context:</b> US



Kapucu and Ustun [31], journal (PLC)	This article examined the impact of leadership competencies on perceived effectiveness of crisis leadership in the context of crisis management. The competency model that was developed in this study can be utilized in several ways in the public management practice.	Leadership competencies positively influence perceived effectiveness of collaborative crisis leadership. Leadership traits and skills have significant and positive relationships with task-oriented, people-oriented, and organization-oriented leadership behaviors. The effectiveness of crisis leadership level is positively influenced by task-oriented leadership behaviors. The positive relationship between people-oriented leadership behaviors and the effectiveness of collaborative crisis leadership was found to be significant. There is a positive relationship between task-oriented leadership behaviors and the perceived effectiveness of collaborative crisis leadership.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Crisis management</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Leadership competencies</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>• Literature review</li> <li>• Survey (301 responses from Turkish government's administrative and managerial staff)</li> </ul> <b>Analysis:</b> Structural equation modelling <b>Context:</b> Turkey
Karim and Chan [32], journal (CM&SM)	The authors use a sharp regression discontinuity design based on the 2016 close mayoral election and Facebook's personnel flow data to analyze mayors who are closely related to the Brazilian president, Bolsonaro. It compares the data of Near non-Bolsonaro Municipalities to Bolsonaro Municipalities.	Brazilian citizens are dependent on the suggestions of the parties they follow. Residents of Bolsonaro-affiliated areas have less activity and are more likely to have cross-regional activities in March, April, and May. Bolsonaro-affiliated cities are likely to systematically underreport the number of infections and deaths.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Intraregional movement and cross-regional movement</li> <li>• COVID-19 related case and death data</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Bolsonaro-affiliated municipalities (+) → intraregional movement and cross-regional movement</li> <li>• Bolsonaro-affiliated municipalities (-) → COVID-related case and death data</li> </ul>	<b>Method(s):</b> Quantitative coding of Facebook mobility, 2016 elections, and COVID-19 cases and deaths data <b>Analysis:</b> Sharp regression discontinuity design <b>Context:</b> Brazil <b>Channel(s):</b> Facebook
Kavanaugh et al. [33], journal (CM&SM)	This article identifies and addresses the challenges faced by government using social media, which challenges are related to routine day-to-day civil life and critical incidents or emergencies. The authors conducted group interviews and participant questionnaires and supplemented this data development of tools to analyze social media data that they collected.	The local government in Arlington, Virginia does not understand the costs and benefits of using social media, nor the general audience. They also do not clarify who should be responsible for monitoring communications and how to leverage social media and to understand effect of their social media posts on the public. Both government and citizens need some new tools to filter the overwhelming amount of data, to model the flow of information, and to figure out patterns over time. To properly manage a crisis and its social convergence, longer-time frames analyses are necessary, which archive and curate generated content in digital libraries.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Information factors (communication, information, technology)</li> <li>• Organizational factors (policy, legal issues, costs, and training)</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>• Literature review</li> <li>• Focus groups interviews (25 county officials)</li> <li>• Qualitative coding (34 local organizations)</li> </ul> <b>Analysis:</b> Descriptive and content analysis <b>Context:</b> Government officials in Arlington, Virginia (US) <b>Channel(s):</b> <ul style="list-style-type: none"> <li>• Twitter</li> <li>• Facebook</li> <li>• Flickr</li> <li>• YouTube</li> </ul>

Li et al. [34], journal (CM&SM)	The authors use supervised learning methods to extract effective posts, and then analyze the factors that affect the spread of COVID-19 related posts.	Crisis situation information is valuable for the public and authorities to respond to the COVID-19 epidemic because such information helps improve the efficiency of the crisis relief process. It is thus necessary to use different information release strategies for different types of situational information.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>The spread of the post</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>The user's followers and the user are verified (+) → spread of the post</li> <li>Use hashtag (+) → spread of the post</li> <li>Length of the situation information (except counter-rumor) (+) → spread of the post</li> </ul>	<b>Method(s):</b> Computerized qualitative coding <b>Analysis:</b> Supervised learning: support vector machines, naive Bayes, and random forest <b>Context:</b> China <b>Channel(s):</b> Sina Weibo
Liao et al. [35], journal (CM&SM)	The authors screen Weibo accounts that effectively interacted with the public and adopted random sampling to determine the data range. The report uses statistical analysis to distinguish the content of personal accounts and government accounts.	The online response is based on the development of COVID-19 and government actions, which response is earlier than the government's response. The frequency of individual postings decreased over time—showing sympathy, blame, and concern after a few weeks. Government job sharing updates and prevention techniques, as well as the frequency of posts to refute rumors, remained stable through the study. Over time, more praise-like posts from the government appeared. The government's close attention to public opinion can further improve the government's ability to respond to the COVID-19 crisis.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Weibo activity</li> <li>Interest in the latest information</li> <li>Sympathy, imputation</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Newly confirmed COVID-19 cases (+) → Weibo activity</li> <li>Time (-) → interest in the latest information</li> <li>Time (+) → sympathy, imputation</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Literature review</li> <li>Qualitative coding (1,028,204 Sina Weibo posts)</li> </ul> <b>Analysis:</b> Content analysis and latent class analysis <b>Context:</b> China <b>Channel(s):</b> Sina Weibo
Lilienfeld [36], journal (PLC)	Based on the evaluation of multiple US Presidents' personalities and behaviors, the authors compare the correlation between four FFM factors and resulting presidential performance.	Certain psychopathic traits, such as fearless dominance and impulsive antisociality, can affect a US president's political performance and successful leadership. The FD factor makes leaders more adaptable and have better political performance. IA has no obvious relationship with the rated president's performance; however, it positively corresponds to negative job performance.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Rated presidential performance</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Fearless dominance (+) → rated presidential performance</li> <li>Impulsive antisociality (+) → negative job performance</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Literature review</li> <li>Survey (121 expert raters)</li> </ul> <b>Analysis:</b> Psychopathy trait estimates, historical surveys of presidential leadership, and objective indicators of multiple US presidents' performance <b>Context:</b> US
Llanos and Margheritis [37], journal (PLC)	The authors analyze the reasons for the failure of President Fernando de la Rúa in accordance with the development of internal affairs in Argentina. They analyze the shortcomings of the Argentine government system and the isolationist characteristics of the president in the order of time.	The President of Argentina has great powers conferred by the Constitution, thus its society and political institutions were unable to develop alternative leaderships to counterbalance the weaknesses or the preferences of the president. The mistrust between the president and his staff led to the end of the alliance and allies.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Credibility problems</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Deterioration of social and economic (+) → credibility problems</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Literature review</li> </ul> <b>Analysis:</b> Comparison amongst existing research on President Fernando de la Rúa <b>Context:</b> <ul style="list-style-type: none"> <li>Argentine</li> <li>Chile</li> </ul>

Lyu et al. [38], working paper (CM&SM)	The authors attempt to characterize the Twitter users who use controversial terms and those who use noncontroversial terms. They used the Tweepy API to retrieve 17 million related tweets and the information of authors of the tweets.	This article is the first large-scale social media-based study to characterize users depending on whether they use controversial terms during a major crisis. There is a significant difference between two groups of Twitter users—those who use controversial terms and those who use noncontroversial terms—across their demographics, user-level features like the number of followers, political following status, and geolocations. However, the predictors of the following count, friends count, and status counts have negligible effect on outcomes.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Use of controversial terms</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Trump follower (+) → use of controversial terms</li> <li>Follower democratic party politicians (-) → use of controversial terms</li> <li>Male users (+) → use of controversial terms</li> <li>Female users (-) → use of controversial terms</li> <li>Suburban and rural users (+) → use of controversial terms</li> <li>Urban users (-) → use of controversial terms</li> <li>Verified users (-) → use of controversial terms</li> <li>Accounts with longer history (-) → use of controversial terms</li> <li>Users older than 45 years old (+) → use of controversial terms</li> <li>Users younger than 45 years old (-) → use of controversial terms</li> </ul>	<ul style="list-style-type: none"> <li>Brazil</li> </ul> <b>Method(s):</b> <ul style="list-style-type: none"> <li>Literature review</li> <li>Qualitative coding (1,125,285 tweets were collected for CD and 16,320,176 for ND)</li> </ul> <b>Analysis:</b> Content analysis <b>Context:</b> Global <b>Channel(s):</b> Twitter
Mariani et al. [39], conference (CM&SM)	The authors analyze the influence of Brazilian President, Jair Bolsonaro, on the spread of COVID-19 and citizen behaviors. They do so by separating those in favor of Bolsonaro and those against Bolsonaro.	This study makes three main contributions. First, it adds to the research on source cues and political persuasion. It contributes to the less developed research stream on the influence of party and political leader cues on political behavior in new democracies in which party systems are weaker. The study also adds to the research stream on how uninformative persuasion influences attitudes. Second, it adds to quickly growing research on political responses to COVID-19. The demonstration itself, because of the people gathering, could increase the spread of the disease in localities where the demonstrations took place. Citizens could have changed their behavior after seeing Bolsonaro himself ignoring COVID-19 warnings.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Number of COVID-19 cases in municipality</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Pro-Bolsonaro (binary variable)</li> <li>“Post-March 15th” (binary variable) (+) → number of confirmed cases</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Descriptive analysis (COVID-19 cases in municipalities supporting the president in 2018 elections)</li> <li>Econometric modelling COVID-19 cases and voting support for president in 2018 elections)</li> </ul> <b>Analysis:</b> Difference-in-differences approach for modeling <b>Context:</b> Brazilian president (Jair Bolsonaro) <b>Channel(s):</b> In-person

McConnell and Drennan [46], journal (PLC)	This article builds on from Boin and Hart (2003) who identified some crisis leadership tensions, with the goal of understanding some of the tensions between the 'ideals' of precrisis preparedness and practice. The authors also propose a typology of organizational preparedness for crisis which draws on Pauchant and Mitroff (1992).	This paper identifies four tensions between 'ideal' crisis planning and preparedness and realities of crisis: 1) high potential impact of crisis vs. low priority of emergency management; 2) need for planning and order vs. uncertainty and disorder of crisis; 3) need for an integrated approach vs. realities of institutional fragmentation; 4) need for active planning and readiness vs. symbolic readiness. The article categorizes policy tools related to contingency planning into four types: laws, policy guidelines and recommendations, codes and protocols, and conventions (from 'hard' to 'soft'). There are four main types of precrisis planning changes that are recommended by authors: 1) public authorities setting new, peak bodies to focus on civil contingencies; 2) governments issuing central requirements/guidance to review contingency plans and strengthen preparations; 3) passing new legislation for legal requirements to address contingency planning ; and 4) engaging in contingency planning that is audited, which is essential for good governance and policy improvement. According to this study's analysis, high levels of crisis preparedness in practice are possible but are difficult for governments to achieve.	N/A	<b>Method(s):</b> Literature review <b>Context:</b> Global
Mio [47], journal (PLC)	This article compares the density of metaphors used in the inauguration speeches of presidents considered charismatic and those not considered charismatic.	Presidents use metaphors as a tool to clarify meaning, to inspire, and to motivate followers. The charismatic American president will use metaphors more in his inauguration speech, especially in inspiring passages. This study is limited because the inaugural speech is only a representative of the President. And this study only considered the density of metaphors.	<b>DV(s):</b> <ul style="list-style-type: none"><li>• Simonton's charisma score</li><li>• Inspiring passages</li></ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"><li>• Overall metaphor density (+) → Simonton's charisma score</li><li>• Inspiring passages metaphor density (+) → Simonton's charisma score</li><li>• Inspiring passages metaphor density (+) → inspiring passages</li></ul>	<b>Method(s):</b> <ul style="list-style-type: none"><li>• Literature review</li><li>• Qualitative content analysis (36 first inaugural speeches for US presidents: from George Washington to Bill Clinton)</li></ul> <b>Analysis:</b> Content analysis <b>Context:</b> US <b>Channel(s):</b> Reveal talk
Nacos [48], journal (PLC)	This article describes the measures President Bush has taken in handling the Gulf crisis and reflects his leadership according to the support at the international and domestic levels in different periods. It also compares the changes in public acceptance	The article concludes that the US president must guarantee effective action, mobilization of public opinion, and public support when dealing with a crisis. In the Gulf crisis, President Bush successfully persuaded international leaders that they were fighting against Iraq's expansionism to review the interests of all countries and conducted multidomain exchanges with many countries. Bush was weak in maintaining domestic elites and pub-	<b>DV(s):</b> <ul style="list-style-type: none"><li>• Public support</li><li>• Elite support</li><li>• International support</li><li>• Political performance</li></ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"><li>• More measures to satisfied public</li></ul>	<b>Method(s):</b> <ul style="list-style-type: none"><li>• Literature review</li></ul> <b>Analysis:</b> Analysis of published results from previous research <b>Context:</b> US <b>Channel(s):</b>

	in different time periods and under different measures adopted by President Bush.	lic support. To win and maintain the support of one audience—at the expense of a source of power when dealing with a crisis—the US president may lose the support of another key audience.	(+)→ public support <ul style="list-style-type: none"> <li>• More measures to satisfied public</li> <li>• (-)→ international support</li> <li>• Public support (+) → elite support</li> <li>• Public support, elite support, international support (+)→ political performance</li> </ul>	<ul style="list-style-type: none"> <li>• Public opinion polls</li> <li>• Presidential TV-addresses</li> <li>• Informal question-and-answer encounters</li> </ul>
Pérez-Escoda et al. [49], journal (CM&SM)	The authors conduct statistical analysis on specific sample groups and the accounts of health workers by time periods. They also analyzed the relationship between follower growth and interaction and published content.	In the 21st century, proficiency in data belongs to major technology companies. The urgent need for information in the face of crises leads to unmeasured anxiety about knowledge, which allows people to interact with health professionals and governments who have presence on social networks. Social networks can obtain the same or more audiences and have greater convening power and communication influence. The COVID-19 epidemic has accelerated Spanish society's further promotion of media integration. The crisis has prompted Spanish citizens to emphasize this phenomenon, which must be understood and adopted. This is a challenge to the communications industry, an opportunity for professionals, and points to the need for innovation in the educational to help address these challenges and opportunities.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Followers increase</li> <li>• growth of social network consumption</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Responding to the COVID-19 crisis (+)→ followers increase</li> <li>• The impact of the crisis and being forced to stay at home (+)→ growth of social network consumption</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>• Literature review</li> <li>• Descriptive analysis (communication media specialized in health and individual healthcare professionals)</li> </ul> <b>Analysis:</b> Comparative analysis <b>Context:</b> Spain <b>Channel(s):</b> <ul style="list-style-type: none"> <li>• YouTube</li> <li>• Twitter</li> <li>• Instagram</li> </ul>
Pietz et al. [50], journal (CM&SM)	The authors attempt to assess the effectiveness of 25 different data analytics dashboards in explaining the spread of infectious disease. They do so by developing a multiattribute utility theory model, with the assistance of the SIRD model, to assess the effectiveness of the 25 different data analytics dashboards .	Governments that took swift action experienced the best results. Widespread testing and comprehensive contact tracing are important factors in keeping infection and death rates low. Dashboards that feature dimensions that span the categories associated with compartmental epidemiology models tend to be robust data visualizations. Dashboards that are underpinned by predictive models tend to provide the reader with a richer understanding of the spread of COVID-19 and how it is spreading. However, the dimensions presented by the dashboards are varied, offer little consistency and subject society to information overload, at a time when people need timely and accurate information.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• The extent of people in understanding of the status of COVID-19</li> <li>• The extent that people take actions to reduce infections and deaths caused by the virus</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• number of dimensions included in the model (+)→</li> <li>• a) the extent of people in understanding of the status of COVID-19</li> <li>• b) the extent that people take actions to reduce infections and deaths caused by the virus</li> </ul>	<b>Method(s):</b> Critical review (25 different data analytics dashboards) <b>Analysis:</b> Analysis of effectiveness of the dashboards
Pulejo and Querubín [51], working paper (PLC)	The authors leverage the timing of elections and the presence of constitutional term limits to study the effect of re-election concerns on	This article provides evidence that electoral concerns can help explain the heterogeneous response of political leaders to the COVID-19 epidemic. Its estimates suggest that reelection incentives and election proximity account for almost a quarter of the variation in the strin-	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• COVID-19 policy stringency</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Political leader up for reelection</li> <li>• Proximity to the next election for the</li> </ul>	<b>Method(s):</b> Regression analysis using OxCGRT and publicly available electoral data <b>Analysis:</b> Ordinary least

	COVID-19-related restrictions.	gency of the policies adopted. In countries in which incumbents are up for additional terms and in which upcoming elections are closer in time tend to be less stringent, on average. This effect is driven by policies that may arguably have a more negative economic influence, such as closing workplaces and forbidding internal movement.	country's top executive position at the time of the outbreak	squares <b>Context:</b> 65 countries from OxCGR1'
Rao et al. [52], journal (CM&SM)	The authors use retweets as an indicator for collective information sharing, by drawing on Li et al. (2014). They also leverage Gamson and Modigliani's (1989)'s work on interpretative packages as a framework to help unfold alarming and reassurance retweets trends into topics related to the concepts and themes within tweets text. Finally, the authors use Dirichlet Allocation (LDA) as a topic modeling algorithm to extract underlying topics from unstructured information.	The article identifies three types of tweets: virus contagion, prevention, and the economy. This article provides insights to health officials and government agencies about crisis management and stresses the importance of social media in delivering emergency information to reassure the public. There is a statistically significant difference in the way that social media users retweet alarming and reassuring messages related to various topics. ("contagion" high during the initial, "mitigation" high when the public was worried about the vaccine). Alarming and reassuring messages from health officials and news media outlets should be tracked; health officials and news media outlets should cooperate to mitigate worries after pandemic events.	<b>DV(s):</b> <ul style="list-style-type: none"><li>Percentage of alarming vs reassuring retweets</li></ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"><li>Two types of tweet handles: Government vs non-government</li><li>Three topics: contagion, prevention, and the economy</li></ul>	<b>Method(s):</b> <ul style="list-style-type: none"><li>Literature review</li><li>Computerized qualitative coding and quantitative analysis (26,264 tweets from 80 different Twitter accounts ranging from popular newspapers to Donald Trump to WHO)</li></ul> <b>Data analysis:</b> <ul style="list-style-type: none"><li>Content analysis (GenSim Word2Vec model)</li><li>Thematic analysis (Latent Dirichlet Allocation topic modelling)</li><li>Non-parametric analysis</li></ul> <b>Context:</b> Global <b>Channel(s):</b> Twitter
Roy et al. [53], journal (CM&SM)	This article adopts and revises the Blog-mediated Crisis Communication Model and develops a framework called the Social Mediated Crisis Communication Model (SMCC) to study the contributing factors to an efficiency matrix.	During a disaster event, only a few social media users become highly efficient in gaining attention. In addition, efficiency does not depend on the frequency of tweeting activity only; instead, it depends on the number of followers and friends, user category, bot score (controlled by a human or a machine), and activity patterns (predictability of activity frequency). The study shows that highly efficient users consistently gained attention from a predisaster period (involving a hurricane) to a post-disaster period with the most attention gained right after the hurricane declaration. This finding also indicates the importance of appropriate filtering to retrieve more relevant information from social media data.	<b>DV(s):</b> <ul style="list-style-type: none"><li>Efficiency metric as the ratio between attention received (gaining new followers) and activity (posting tweets/retweets)</li></ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"><li>Bot score (+) → efficiency</li><li>Number of existing followers (+) → efficiency</li><li>Number of existing followees (+) → efficiency</li><li>Activity frequency (-) → efficiency</li><li>Activity entropy (+) → efficiency</li></ul>	<b>Method(s):</b> Quantitative analysis (52.5 million tweets, post by 13.75 million users) <b>Analysis:</b> Linear regression model <b>Context:</b> US (Hurricane Sandy) <b>Channel(s):</b> Twitter
Rufai and Bunce [54], journal	This article explores the role of Twitter as used by Group of Seven (G7) world leaders	According to the authors, this is the first study of world leaders' Twitter use in response to COVID-19. This ar-	<b>DV(s):</b> Twitter content of political leaders during COVID-19 crisis	<b>Method(s):</b> <ul style="list-style-type: none"><li>Literature review</li><li>Qualitative coding (viral</li></ul>

(CM&SM)	in response to COVID-19 crisis.	article illustrates that Twitter can be a powerful tool to inform citizens, to boost morale, and to politicize during a public health crisis. Most tweets are informative-sharing information or updates. The language barrier can be overcome through Twitter's inbuilt Google translate function. This article shows that the number of followers is not related to the number of viral tweets.		<p>tweets from G7 world leaders, a minimum of 500 'likes'; keywords 'COVID-19' or 'coronavirus'; from 17 November 2019 to 17 March 2020)</p> <p><b>Analysis:</b> Content analysis</p> <p><b>Context:</b> Group of Seven (G7) world leaders</p> <p><b>Channel(s):</b> Twitter</p>
Schmidt and Gualmini [55], journal (PLC)	The authors use discursive institutionalist analysis together with a historical institutionalist analysis of Italy's formal political institutional arrangements. They do so to study the economic influence of two different kinds of political influence: opportunistic political leadership and pragmatic technocratic leadership.	Italy has had major economic problems that stem not only from its politico-economic institutions, but also from its political institutions, policies, and politics. The article explains the economic influence of two types of political leadership. First, with <i>opportunistic political leadership</i> the leaders' policies did not adapt to the requirements of the new economy, leading to the destruction of the comfortable relationship between the state and business, a lagging response to the financial crisis, and a decline in approval ratings. Second, with <i>pragmatic technocratic leadership</i> , in the face of the financial crisis, political leaders tried to advocate for a freer market. This leadership style led to a more capable government with the awareness of negotiating with the public.	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>Economic ratings in crisis period</li> <li>Approval ratings in crisis period</li> </ul> <p><b>IVs and relationships:</b></p> <ul style="list-style-type: none"> <li>Opportunistic political leadership (-) → economic and approval ratings</li> <li>Pragmatic technocratic leadership (+) → economic and approval ratings</li> </ul>	<p><b>Method(s):</b></p> <ul style="list-style-type: none"> <li>Literature review</li> <li>Analyzing publicly available data, including GDP growth, debt, deficit, FDI inflows/outflows, (un)employment, poverty, ease of doing business, corruption, and competitiveness.</li> </ul> <p><b>Analysis:</b> Discursive institutionalist analysis together with a historical institutionalist analysis (Italy, France, and Spain in comparison)</p> <p><b>Context:</b> Italy</p> <p><b>Channel(s):</b> Policy polls</p>
Schoeller [56], journal (PLC)	This article examines the reasons for a variance in crisis management by analyzing and comparing one case for each outcome: the first financial assistance to Greece; the failed attempt to establish a 'super-commissioner'; and the shaping of the Fiscal Compact.	Germany emerged as a leader throughout the eurozone crisis only when the benefits of leading exceeded its costs. Once emerged, Germany influenced the outcomes by means of its superior economic power resources. Its economic influence, in contrast, depends on its power, the distribution of preferences among the actors involved, and institutional constraints.	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>Economic ratings in crisis period</li> <li>Approval ratings in crisis period</li> </ul>	<p><b>Method(s):</b> Case study</p> <p><b>Context:</b></p> <ul style="list-style-type: none"> <li>Brussels</li> <li>Frankfurt</li> <li>Berlin</li> </ul>
Sha et al. [57], working paper (CM&SM)	The authors use the Hawkes binomial topic model (HBTM) to track the development of subtopics about	This article contributes to the growing literature of social media analysis and COVID-19. By analyzing COVID-19 Tweets among US politicians between January and April 2020 via Hawkes binomial topic model,	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>Intensity at certain node in the network</li> </ul>	<p><b>Method(s):</b></p> <ul style="list-style-type: none"> <li>Literature review</li> <li>Quantitative method (a set of 7881 COVID-19</li> </ul>

	COVID-19 risk, testing, and vaccination or treatment. Moreover, they estimate the Granger causality via HBTM to build influence networks among the US government officials involved.	the authors discover several key findings: 1) a shift from low to high risk assessment; 2) the discussion about the lack of testing resources gradually subsided over time; 3) emerging subtopics about COVID-19's effects on businesses, the efforts for creation of treatments and vaccines, and calls for social distance and staying at home. The Granger causality analysis reveals additional patterns: 1) President Trump has the highest rate of spontaneous tweets, however, has little influence on network cross-excitation; 2) polarization is not obvious in the Granger influence network; and 3) there is a high level of cross-party event triggering and the resulting influence appears geographically clustered and related to state size.	<b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• a mark</li> <li>• a vector of size</li> <li>• the number of words in the overall dictionary across events</li> <li>• the binary variables indicate whether each word is present or absent in the event at time</li> <li>• a measure of influence, the expected waiting time between a parent-daughter event pair</li> </ul>	<p>related tweets by these politicians)</p> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>• Hawkes binomial topic model</li> <li>• Granger causality</li> </ul> <p><b>Context:</b> US</p> <p><b>Channel(s):</b> Twitter</p>
Shao and Hao [58], journal (PLC)	The authors use the experimental-analytical dual modes of assessing risk perspective to investigate the mediation role of confidence in US political leaders in the relationship between political ideology and risk perception of COVID-19.	This article contributes to the research literature by adding additional empirical evidence on a couple key relationships: 1) confidence in political leaders can reduce individual risk perceptions of environmental and health hazards; 2) confidence in political leaders can mediate the effects of risk perceptions among people with different political ideologies in a highly politically polarized environment. In addition, this article highlights the challenges facing policymakers to implement national public health policies to address an urgent crisis in this polarized environment.	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>• Perceived threats of COVID-19</li> </ul> <p><b>IVs and relationships:</b></p> <ul style="list-style-type: none"> <li>• Confidence in political leaders handling of COVID-19 (-) → COVID-19 risk perception</li> <li>• Political conservatives (-) → COVID-19 risk perception</li> <li>• Political conservatives (-) → confidence in political leaders (-) → COVID-19 risk perception</li> <li>• Follow news about the outbreak of the coronavirus (+) → COVID-19 risk perception</li> <li>• Perceived quality of media coverage of COVID-19 (+) → COVID-19 risk perception</li> <li>• Age (-) → COVID-19 risk perception</li> <li>• Female (+/-) → COVID-risk perception</li> <li>• White (-) → COVID-19 risk perception</li> <li>• Hispanic (+) → COVID-19 risk perception</li> <li>• Income (-) → COVID-19 risk perception</li> <li>• Education (+) → COVID-19 risk perception</li> </ul>	<p><b>Method(s):</b> Pew Research Center's Election News Pathways Survey (8,914 responses)</p> <p><b>Analysis:</b> Structural equation modelling</p> <p><b>Context:</b> US (Donald Trump, Mike Pence, CDC Officials)</p>



Stieglitz and Dang-Xuan [59], periodical (CM&SM)	This article proposes a framework for systematic tracking and analyzing the global political context for social media involving microblogs, weblogs, and social networking sites.	The proposed framework in the article is the first comprehensive summary of different social media analytics approaches and analysis methods within the political area. The framework can guide development of toolsets aiming at collecting, storing, monitoring, analyzing, and summarizing politically relevant user-generated content from social media for political institutions.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Two parts in the purposed framework: data tracking and monitoring, and data analysis</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Tracking approaches: (1) self-involved, (2) keyword/topic-based, (3) actor-based, (4) random/exploratory, and (5) URL-based</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Literature review</li> </ul> <b>Analysis:</b> Critical analysis <b>Context:</b> Global <b>Channel(s):</b> <ul style="list-style-type: none"> <li>Microblogs</li> <li>Social networking sites</li> <li>Weblogs</li> </ul>
Teufel et al. [60], journal (CM&SM)	This article attempts to analyze the influence of COVID-19 crisis on psychological distress, behavior, and risk perception of the German public.	People are profoundly disconcerted by the COVID-19 outbreak, and this might even reach a critical threshold. The level of trust in governmental policies is gaining ground, not only via social media but all along with public speeches. The subjective perceived risk is overestimated compared to existing incidence rates, which might be a result of the feeling of threat.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>Psychological distress: anxiety and depression</li> <li>Behavior: fear of COVID-19, safety behavior, and trust in government</li> <li>Risk perceptions: perceived risk of catching virus, risk of suffering from virus, and risk of dying</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>Closure of public institutions announcements (+) → distress, behavior, risk perception</li> <li>Closure of borders (-) → anxiety and depression</li> <li>Closure of borders (-) → fear of COVID-19 and trust in government</li> <li>Closure of borders (+) → safety behavior</li> <li>Closure of borders (+) → risk of suffering and risk of dying</li> <li>Closure of borders (-) → risk of catching virus</li> <li>Leaders call for solidarity and compliance (+) → anxiety and depression</li> <li>Leaders call for solidarity and compliance (+) → fear of COVID-19 and trust in government</li> <li>Leaders call for solidarity and compliance (-) → safety behavior</li> <li>Leaders call for solidarity and compliance (+) → risk of suffering and risk of dying</li> </ul>	<b>Method(s):</b> <ul style="list-style-type: none"> <li>Survey (12,244 responses)</li> </ul> <b>Analysis:</b> Descriptive analysis <b>Context:</b> German Chancellor (Angela Merkel) <b>Channel(s):</b> Public speech (TV)

			<ul style="list-style-type: none"> <li>• Leaders call for solidarity and compliance (-) → risk of catching</li> <li>• Announcement of contract prohibition (+) → anxiety and depression</li> <li>• Announcement of contract prohibition (+) → fear of COVID-19</li> <li>• Announcement of contract prohibition (+) → trust in government</li> <li>• Announcement of contract prohibition (+) → risk of catching and risk of suffering</li> </ul>	
van Holm et al. [61], working paper (CM&SM)	This article investigates the relationship between one's political ideology, sources of information and news consumption, and COVID-19 oriented behavioral changes.	Political ideology is a predictor of behavioral changes in response to COVID-19 in the US. Liberals were more likely than conservatives to report taking fewer trips and adopting recommended behavioral changes. However, individuals' partisan identities are not the sole drivers of their behavioral decisions: Across partisan lines, people who reported higher levels of concern about the public health and economic consequences of the COVID-19 pandemic had a higher likelihood of behavioral change. There was no influence on behavior related to demographics or status in state. Cultivating concern about the virus, support for public measures, and expectations of others' compliance thus seem like potentially efficacious strategies for increasing behavioral compliance.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• COVID-19 oriented behavioral changes: Individuals' movements throughout their community</li> <li>• The extent to which individuals have complied with general US Federal guidelines: 1) washed their hands 2) avoided touching their face 3) sneezed into their elbow 4) kept 6 feet between themselves and others and 5) stayed home</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Political ideology, liberals (+) → behavior</li> <li>• High concern (+) → behavior</li> <li>• Trust in experts (+) → behavior</li> <li>• Norms (+) → behavior</li> <li>• Media consumption (+) → behavior</li> <li>• Demographics (+/-) → behavior</li> <li>• Status in state (+/-) → behavior</li> </ul>	<b>Method(s):</b> Survey on Amazon's Mechanical Turk (1,665 complete responses recorded from 48 different states and D.C.)  <b>Analysis:</b> Bivariate regression  <b>Context:</b> US
Wenger and Gerber [62], journal (PLC)	This article analyzes the process of President Kennedy's implementation of the Limited Test Ban Treaty from the perspective of international politics and domestic support. The description of international politics is based on the different forms of crisis faced by the president and the different political methods adopted by the president.	The article asserts that the Cuban Missile Crisis brought new flexibility to international politics and blurred the Cold War environment. President Kennedy's actions showed that selective cooperation between the US and the Soviet Union was possible. President Kennedy gained public support through his personal actions, which gave the US-Soviet relations room for maneuver after the Cuban Missile Crisis. Kennedy played a leading role in promoting public influence.	<b>DV(s):</b> <ul style="list-style-type: none"> <li>• Achieve new policy initiatives or decision on particular issue</li> </ul> <b>IVs and relationships:</b> <ul style="list-style-type: none"> <li>• Kennedy's informal leadership style (+) → achieve new policy initiatives or decision of particular issue</li> </ul>	<b>Method(s):</b> Literature review  <b>Context:</b> US and Soviet Union  <b>Channel(s):</b> <ul style="list-style-type: none"> <li>• Public statement</li> <li>• Broadcasting</li> <li>• Unique presidential pulpit</li> </ul>

<p>Zhao [63], journal (CM&amp;SM)</p>	<p>This article analyses how Chinese government has been engaging in an English-language information campaign to create an “Us vs US” world during the pandemic on social media to gain soft power and to secure the discursive power of China in the world.</p>	<p>A package of perplexing information tactics has been adopted by China’s state actors in discursively constructing the “Us vs US” division during the pandemic. The Chinese government tends to emphasize information that is positive about “Us” (China) and negative about the “US” and suppress information that is positive about the “US” and negative about “Us” (China). The construction of a positive “Us”:1) Constantly emphasizing China’s proactive measures in taking on the duties to tackle this public health crisis. 2) Also based on rejecting the US’s condemnation of China’s faults. In constructing a negative “US,” China’s state actors have been fracturing international relations and politics and trying to reshape it from a “Us vs US” perspective through a confusing range of both factual and dubious information: 1) Their social media accounts highlighted what is negative about the US, especially the US’s irresponsible actions to tackle the pandemic. 2) China’s state actors requested the US to behave responsibly and benevolently.</p>	<p><b>DV(s):</b></p> <ul style="list-style-type: none"> <li>• Soft power of China and the discursive power of China</li> </ul> <p><b>IVs and relationships:</b></p> <ul style="list-style-type: none"> <li>• Positive ‘Us’ (+) → soft power of China and the discursive power of China</li> <li>• Negative ‘US’ (+) → soft power of China and the discursive power of China</li> </ul>	<p><b>Method(s):</b> Literature review</p> <p><b>Context:</b> China</p> <p><b>Channel(s):</b></p> <ul style="list-style-type: none"> <li>• Twitter</li> <li>• Facebook</li> </ul>
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\* CM&SM = Crisis management and social media; PLC = Political leadership in crisis.

## Appendix B: Categorization of Data

**Table B1. Phases for each country**

Countries	Phase 1 (Sporadic cases)	Phase 2 (Clusters)	Phase 3a (First wave)	Phase 4a (First epidemic)	Phase 5 (Late epidemic)	Phase 3b (Second wave)	Phase 4b (Second epidemic)
<i>UK</i>	31 Jan (2 total; 2 new)–3 Mar (51 total; 11 new)	4 Mar (87 total; 33 new)–12 Mar (590 total; 117 new)	13 Mar (798 total; 118 new)–31 Mar (25,150 total; 2,718 new)	1 Apr (29,474 total; 3,906 new)–10 Apr (73,758 total; 7,837 new)	11 Apr (78,991 total; 4,727 new)–31 Jul (303,181 total; 880 new)	N/A	N/A
<i>Ireland</i>	29 Feb (1 total; 1 new)–11 Mar (11 total; 9 new)	12 Mar (70 total; 27 new)–19 Mar (557 total; 191 new)	20 Mar (798 total; 126 new)–1 Apr (3,447 total; 212 new)	2 Apr (3,849 total; 402 new)–10 Apr (8,082 total; 1,508 new)	11 Apr (8,921 total; 839 new)–31 Jul (26,065 total; 38 new)	N/A	N/A
<i>Australia</i>	19 Jan (1 total; 1 new)–4 Mar (53 total; 14 new)	5 Mar (60 total; 7 new)–15 Mar (300 total; 52 new)	16 Mar (401 total; 101 new)–22 Mar (1,609 total; 537 new)	23 Mar (1,887 total; 278 new)–29 Mar (4,163 total; 528 new)	30 Mar (4,460 total; 297 new)–28 Jun (7,686 total; 45 new)	29 Jun (7,767 total; 81 new)–16 Jul (10,810 total; 323 new)	17 Jul (11,235 total; 425 new)–31 Jul (16,905 total; 602 new)
<i>Singapore</i>	23 Jan (1 total; 1 new)–15 Feb (72 total; 2 new)	16 Feb (72 total; 3 new)–24 Mar (558 total; 49 new)	25 Mar (631 total; 73 new)–16 Apr (4,427 total; 728 new)	17 Apr (5,050 total; 623 new)–20 Apr (8,014 total; 1,426 new)	21 Apr (9,125 total; 1,111 new)–31 Jul (52,205 total; 396 new)	N/A	N/A
<i>Canada</i>	27 Jan (1 total; 1 new)–10 Mar (95 total; 18 new)	11 Mar (110 total; 15 new)–17 Mar (598 total; 157 new)	18 Mar (727 total; 129 new)–5 Apr (15,512 total; 1600 new)	6 Apr (16,667 total; 1155 new)–3 May (59,474 total; 2760 new)	4 May (60,772 total; 2760 new)–31 Jul (116,312 total; 513 new)	N/A	N/A
<i>US</i>	20 Jan (1 total; 1 new)–1 Mar (75 total; 7 new)	2 Mar (100 total; 25 new)–8 Mar (541 total; 106 new)	9 Mar (704 total; new)–4 Apr (317,994 total; 34,685 new)	5 Apr (343,747 total; 25,109 new)–24 Apr (925,232 total; 39,123 new)	25 Apr (960,651 total; 35,523 new)–13 Jun (2,142,523 total; 25,548 new)	14 Jun (2,162,809 total; 20,337 new)–26 Jun (2,550,179 total; 56,280 new)	27 Jun (2,593,666 total; 43,680 new)–31 Jul (4,710,049 total; 72,854 new)

## Appendix C: Study Validity for Study 1

**Table D1. Rigor criteria for qualitative case study**

Criterion	Procedures from the literature Gibbert et al. [22]	Why/How Proposed Procedures Were Addressed in This Study
<i>Internal Validity</i>	Explanation-building	In-depth descriptions for the individual cases were provided, which were used to develop correlation themes and propositions.
	Literature based research framework	The proposed framework was derived from the collected data and existing framework of the populist political communication style framework by Bracciale and Martella [9].
	Theory triangulation	The developed propositions were probed against the existing framework of the populist political communication style framework by Bracciale and Martella [9].
<i>Construct Validity</i>	Multiple Sources of Evidence	Twitter data from multiple political leaders was combined with Google's COVID-19 Community Mobility Reports and Oxford's Government Response Tracker data for the period of January to July 2020 to develop propositions.
	Establishment of the Chain of Evidence	A chain of evidence was maintained with a detailed process narrative and cross-referencing with transcripts.
<i>Coding Reliability</i>	Development of Coding and Analysis Protocol	Twitter data from political leaders were coded by two researchers who collaboratively developed a coding scheme, which was further refined through multiple rounds of independent coding, code comparisons, and coding discrepancy discussions.
	Establishment/Maintenance of Case Study Database	Twitter data from political leaders were organized, stored, coded, analyzed, and visualized using the qualitative data analysis package NVivo 11.
	Inter-Coder Reliability	An independent researcher coded 20% of the Twitter data from political leaders. The Cohen's Kappa for each political leader coding was above 0.75, suggesting a good level of agreement between the coders.
<i>External Validity</i>	Increasing Degree of Freedom	Multiple observation of each prediction; multiple (6) cases studies.
	Application of Replication Logic	The same propositions are tested in the six cases; each case can be considered a separate study in which different instances are tested for the same propositions.
	Case Study Selection	We decided to collect data from countries which have exceptionally, moderately, and inadequately managed the pandemic crisis in terms of total cases and total new cases over time.
	Cross-Case Analysis	Analysing six cases allowed comparison of cases across, which helped identify the different populist political communication styles of the selected political leaders.

## Appendix D: Within-Case Analysis

### Case: the UK

#### *Political Environment*

Boris Johnson was appointed as prime minister of the UK in July 2019, following the resignation of the previous Prime Minister Theresa May. He was reelected as a prime minister after the general elections in December 2019 on which the Conservative party won most of the seats in the House of Commons. He adopted a “do or die” approach to Brexit and led the successful exit of UK from the European Union in January 2020, which had a transition period until December 2020. However, due to the COVID-19 crisis, there had been difficulties with adopting the new post-Brexit regulatory and judicial systems, which posed several challenges linked to the UK domestic policy, including deteriorating relations between the UK government and its devolved regions, as well as emerging factions within the ruling Conservative party [44].

#### *Phase 1 (Sporadic Cases)*

During this period, Boris Johnson tweeted 66 posts in total, out of which 9 posts (13.63%) were related to the COVID-19. Most of his Twitter posts were associated with a neutral sentiment, followed by a negative sentiment. The major coded themes for this period were associated with the UK government press conferences (36.17%), healthcare workers’ efforts (13.69%), and government advice (13.37%). Boris Johnson frequently made announcements about official government press conferences on which the public were advised how they can help in preventing the spread of COVID-19 (e.g., frequently washing hands), which had “moderate effects [and] people recover from it speedily and well.” He also repeatedly reassured residents that the UK is well prepared in terms of available healthcare workers and their capability to treat patients. Other minor themes were cross-country comparison (5.71%) and global governments’ efforts (5.41%) in which he points out that fighting this pandemic necessitates synchronized efforts from governments around the world.

#### *Phase 2 (Clusters)*

In this phase, Boris Johnson tweeted 24 posts in total, out of which 16 (66.66%) were linked to the COVID-19. Most of his Twitter posts were related to a neutral sentiment, followed by a negative sentiment. The key coded themes for this phase were associated with the UK government press conference (15.39%), government advice (9.72%), regularly washing hands (9.12%), COVID-19 symptoms (6.39%), and isolation measures (4.60%). He made frequent announcements about official government press conferences on which the public was given government advice about regularly washing and sanitizing hands, as well as going to self-isolation whenever COVID-19 symptoms were present. Other minor themes were government’s science-based evidence (4.46%), healthcare workers’ efforts (2.81%), COVID-19 testing (2.78%), and COVID-19 fake news (2.61%). Boris Johnson pointed out that most of the government measures (e.g., national-wide testing) for slowing down COVID-19 spread were based on scientific evidence and made in consultation with the “UK’s Medical Officer [and] Chief Scientific Adviser.” He was also urging the public to be cautious about the misleading, fake news on the Internet and social media.

#### *Phase 3 (Main Wave)*

During this period, Boris Johnson tweeted 100 posts out of which 98 posts (98%) are associated to the COVID-19. Most of the Twitter posts were associated with a neutral sentiment, followed by moderately positive and moderately negative sentiments. The main themes for this phase were related to collective efforts of the public (7.94%), the UK government press conference (6.72%), government financial support (6.32%), healthcare workers’ efforts (5.94%), restricting public movement (5.68%), government advice (4.65%), collective hope (3.04%), and closure of public hubs (3.00%). He repetitively reminded the public on official government press conferences to take a personal responsibility in “curving the peak” of COVID-19 by remaining or working from home and not attending “any non-essential activities” or visiting “public hubs.” He also emphasized the government’s financial support for employees’ wages and acknowledges healthcare workers’ efforts in dealing with the management of the disease peak. Also, he was encouraging and stressing the importance of collective hope in dealing with the widespread transmission of COVID-19. Other minor themes from the Twitter posts were as follows: sanity checks of current situation (2.27%), systematic approach to dealing with the pandemic crisis (2.26%), COVID-19 symptoms (2.01%), collective challenge (1.59%), self-isolation measures (1.39%), social distancing (1.35%), and working from home (1.16%). He repeatedly shared facts about the seriousness of the diseases in terms of its severe effects on health and economy to reinforce government measures and advice (e.g., self-assessment of symptoms, self-isolation measures, and social distancing) to the public.

#### *Phase 4 (Full Epidemic)*

In this period, Boris Johnson tweeted 24 posts in total, all of which are COVID-19 related (100%). Most of his Twitter posts were associated with a neutral sentiment, followed by a negative sentiment. The major themes that emerged from his tweets were associated to collective efforts of the public (15.15%), restricting public movement (13.03%), healthcare workers’ efforts (6.96%), collective hope (6.39%), and political parties’ efforts (5.41%). Boris Johnson frequently stressed the importance of everyone “doing their bit in the fight against COVID-19,” which he used to urge the public to stay at home and not leave the home “unless absolutely necessary.” As well, he acknowledged the healthcare workers’ “unselfish” efforts as crucial in reducing the peak of cases for the diseases, which also aligned with his enthusiasm about being “hopeful for the long term.” He also got to point out in several mentions that all the major political parties in the UK “work constructively together through this national emergency.” Some of the minor themes arising from his Twitter

posts were associated with the UK government press conference (2.97%), sanity checks (2.95%), government advice (1.96%), science-based evidence (1.75%), and collective efforts outcomes (1.65%). Boris Johnston announced the official press conference of the UK government on which specific advice were given to the public on how to reduce the peak of the disease. Similarly, he prompted residents to ‘stay alert at all times’ and “follow instructions” which will lead to positive long-term outcomes.

### *Phase 5 (Late Epidemic)*

During this period, Boris Johnson tweeted 303 posts, out of which 290 are related to COVID-19 (95.70%). Most of his tweets had a neutral sentiment, followed by a positive sentiment. The key themes emerging from the Twitter posts for this phase were associated with collective efforts (18.27%), healthcare workers’ efforts (14.52%), government advice (9.40%), COVID-19 restrictions easing (9.26%), collective efforts outcomes (8.77%), and sanity checks (8.27%). Boris Johnson called for collective effort of the UK residents to adhere to the government advice for preventing the spread of the COVID-19. He also recognized the important role of healthcare workers in taking care of patients and reducing the number of total cases. On one hand, he was grateful for everyone’s efforts with sticking to their “role” in reducing the COVID-19 spread, which led to easing the restrictions and reopening the economy. On the other hand, he repeatedly reminded residents about the health risks of COVID-19 and calls on the public to ‘stay alert’ at all times to further reduce any new cases. The minor themes were as follows: official government press conference (7.29%), social distancing measures (6.80%), government investment in public sector (6.28%), collective hope (6.13%), and COVID-19 recovery (5.87%). Boris Johnson announced official government press conference on which he discussed the details about the national COVID-19 recovery strategy and government’s plans to invest in ‘school and colleges building programme,’ “recruitment of 20,000 police officers,” and “recruitment of 6,000 more doctors and 12,000 nurses.” He also reminded the public to regularly practice social distancing measures to “keep the number low,” but meanwhile, trying to give everyone hope that “we’re going to bounce forward together, stronger together.”

## **Case: Canada**

### *Political Environment*

Justin Trudeau led the Liberal Party to re-election in October 2019 and won his second mandate as a prime minister; however, with a reduced majority. With losing significant support in western Canada, the relations between Justin Trudeau’s Liberal Party and the Conservative Party, which led by provincial Canadian governments, had deteriorated. The government entered a period of substantial deficit spending and government intervention in the economy as a response to the COVID-19 crisis. In May 2020, Justin Trudeau announced an investment of CAN\$252 million to support farmers, food businesses, and food processors who provide essential services to Canadians by ensuring a safe and reliable food supply during the COVID-19 crisis. While the government has hinted elections in late 2020, throughout the year it focused largely on rollout of the COVID-19 vaccine to address the decline in poll numbers [41].

### *Phase 1 (Sporadic Cases)*

During this period, Justin Trudeau tweeted 354 posts in total, out of which 12 posts (3.389%) were related to COVID-19. Most of his Twitter posts in this period had a positive sentiment, followed by mixed, negative, and neutral sentiments. The key themes emerging from the Twitter posts of Justin Trudeau were related to the government’s efforts (25%), collective hope (25%), bringing Canadian residents back home (8.33%), COVID-19 challenges (8.33%), government investment in COVID-19 research (8.33%), global governments’ efforts (8.33%), and protecting the state borders (8.33%). He constantly pointed out the government was working closely with all of Canada’s premiers to “make that sure, as a country, we are prepared for every scenario” and further reassures the public that “their health and safety is our top priority” and that “Canada is in a ‘strong position to respond to potential economic challenges.” He also mentioned that the cross-borders travels were being limited to protect the state borders and more Canadians were being brought back home on flights, which further commend to the government’s efforts and instill collective hope. He further acknowledged that many Canadians were facing challenges “during these difficult times” but also encouraged everyone to be hopeful as the government is investing significantly in COVID-19 research (e.g., ‘supporting 47 research teams across Canada with funding their COVID-19 research’) and working closely with “G7 counterparts regarding the impacts on global economic activity from the COVID-19 outbreak.” Other less tweeted themes were keeping good hygiene (2.79%), self-isolation (1.65%), and coughing into elbow (1.29%). He also prompted everyone to behave responsibly to prevent the spread of COVID-19 by keeping a good hygiene (e.g., “washing hands, not touching your face.”), self-isolation (e.g., “if you are sick: stay home.”), and coughing in the elbow (e.g., “coughing and sneezing into your elbow.”).

### *Phase 2 (Clusters)*

In this period, Justin Trudeau tweeted 197 posts in total, out of which 97 posts (49%) were related to COVID-19. Most of his Twitter posts had neutral sentiments, followed by positive and negative sentiments. The major themes emerging from Justin Trudeau’s Twitter posts were government’s efforts (15.92%), protecting the state borders (13.53%), collective hope (6.8%), Canadian government press conference (6.75%), collective effort (4.33%), global governments’ efforts (4.12%), and international diplomacy for COVID-19 (4.12%). He regularly reassured the public that “we are doing everything to provide assistance under these unprecedented circumstances,” as well as limiting the cross-border movement to “ease the potential burden overseas travelers could place on our healthcare systems and its frontline workers.” He also often mentioned that he is working with the other international governments (e.g., Emmanuel Macron, President of France) to “limit the spread of COVID-19 and protect people in Canada.” In addition, he announced the official press conference of the Canadian government on which the public will be informed about the responses to COVID-19 and current case numbers. The minor themes from the Twitter posts were government’s science-based decision-making (3.71%), restricting public movement (3.09%), government financial support for individuals (3.09%), and social distancing measures (3.09%). Justin Trudeau tweeted that the government was “listening to our public health and medical experts” and backs up the public movement restrictions with “the

latest evidence from the [medical] experts.” He also urged everyone to practice the social distancing in public places (e.g., ‘social distancing is a key action you can take to help #FlattenTheCurve’) and informs the public that government financial support is available to “help people come home or to help cover their health needs.”

### *Phase 3 (Main Wave)*

During this period, Justin Trudeau tweeted 583 posts, out of which 271 posts (46%) were related to COVID-19. Most of his Tweets were associated with neutral sentiment, followed by negative and positive sentiments. The major themes that emerged from Justin Trudeau’s Twitter posts were associated with government financial support for individuals (11.46%), government financial support for businesses (8.62%), government’s efforts (6.85%), and bringing Canadian residents back home (6.27%). He frequently tweets about the availability of government financial support for individuals (e.g., Canada Emergency Benefit) and businesses (e.g., Canada Emergency Wage Subsidy), which was in line with Canadian government’s efforts to “make sure you, your family, and your businesses have what is needed to pull through.” In addition, he confirmed that the government was closely collaborating with foreign governments (e.g., Moroccan government) to help bring Canadians back home safely, which helps with solidifying government’s efforts in dealing with the pandemic. Other minor themes emerging were associated with Canadian government press conference (4.56%), protecting the state borders (4.44%), international diplomacy for COVID-19 (4.26%), keeping Canadian residents informed (3.84%), and collective hope (3.83%). Justin Trudeau occasionally made announcements about official press conference of the Canadian government to keep the public informed on new developments regarding their response to COVID-19 crisis, which in turn reinforces the collective hope: “we’re only going to get through this by pulling together.” Moreover, he confirmed that “non-essential travel across the Canada-US” was restricted to protect the Canadian borders and points out his government “keeps working with our partners around the world to slow the spread of COVID-19.”

### *Phase 4 (Full Epidemic)*

In this period, Justin Trudeau tweeted 606 posts, out of which 270 posts (45%) were associated with COVID-19. Most of his posts were associated with a neutral sentiment, followed by negative and positive sentiments. The key themes emerging from Justin Trudeau’s Twitter posts in this period were associated with government financial support for businesses (11.64%), government financial support for individuals (8.54%), government efforts (5.54%), and collective hope (5.50%). He regularly emphasized accessibility of the government financial support for businesses, which “help employers keep and rehire workers,” and for individuals, which helps frontline workers to “boost their wages” amidst the pandemic crisis. The provision of such financial support affirmed Justin Trudeau’s claims government efforts (e.g., “we are doing everything to keep Ontarians safe and supported right now”) and encouraged hopeful long-term prospects for Canada (e.g., “You are not alone, we’ll get through this together, stronger.”) Other less tweeted theses were healthcare workers’ efforts (3.76%), government financial support for students (3.70%), and government investment in COVID-19 research (3.64%). Justin Trudeau expressed appreciation for the healthcare workers who “play a key role in our fight against COVID-19” and also mentioned that the government is making significant investments in COVID-19 research for “development of treatments and vaccines.” He also pointed out that the Canadian government was committed to supporting students in terms of grants and financial assistance.

### *Phase 5 (Late Epidemic)*

In this period, Justin Trudeau tweeted 1,535 posts, out of which 590 posts (38%) are related to COVID-19. Most of his Twitter posts were associated with a neutral sentiment, followed by positive and negative sentiments. The major themes emerging from Justin Trudeau’s Twitter posts for this period were associated to government financial support for businesses (10.17%), international diplomacy for COVID-19 (7.67%), government financial support for students (5.36%), government financial support for individuals (4.81%), government financial support for seniors (4.32%), and government’s efforts (4.13%). Justin Trudeau repeatedly brought the attention of the public to the available government financial support for businesses (e.g., Canada Emergency Wage Subsidy), individuals (e.g., Canada Emergency Benefit), students (e.g., Canada Emergency Student Benefit), and seniors (e.g., Old Age Security and Guaranteed Income Supplement), which reinforced his claims that “we will continue to support Canadian families and businesses during COVID-19.” He also mentioned that the government is constantly in communication with foreign governments to “work together on recovery efforts and more.” Other minor themes were related to government financial support for childcare (3.70%), government financial support for small businesses’ rents (3.46%), and government investment in food supply (3.18%), global governments’ efforts (2.68%), and safe working conditions (2.65%). Justin Trudeau mentioned the available financial help for “parents who want to return to work” (e.g., Canada Child Benefit) and small businesses’ rents (e.g., Canada Emergency Commercial Rent Assistance). He also mentioned that the government is investing in “food supply chains” to reduce the risk of food shortage in rural regions in Canada and was committed to helping people get back to work by “ensuring safe working conditions.” Furthermore, he emphasized his promise “about global solidarity in fighting the virus, developing treatments, and vaccines.”

## **Case: Australia**

### *Political Environment*

In May 2019, Scott Morrison secured a majority and was re-elected as the prime minister of the federal elections after his first mandate in August 2018. During the COVID-19 crisis, Scott Morrison effectively announced several measures to support individuals, businesses, and the economy at 8% of the GDP. Due to the extensive deficit spending in this period, the government announced a fiscal deficit at least for another decade, which can reach 11% of the GDP in 2020/21. Despite the projected fiscal deficits, Scott Morrison’s popularity had increased throughout 2020 due to the federal government’s effective response to the COVID-19 outbreak [40].



### *Phase 1 (Sporadic Cases)*

During this period, Scott Morrison tweeted 61 posts, out of which 41 (67%) were related to COVID-19. Most of the Twitter posts from Scott Morrison were associated with a neutral sentiment, followed by positive and negative sentiments. The major themes emerging from Scott Morrison's Twitter posts were associated with bringing Australian residents back home (24.08%), international diplomacy for COVID-19 (7.32%), government's efforts (7.24%), recovery from COVID-19 (4.88%), and protecting state borders (4.02%). Scott Morrison frequently reminds the public that the government is "monitoring and responding to the [COVID-19] information we are receiving every day." and its "highest priority is keeping Australians safe." He also mentioned that the government was dedicated to bringing Australians abroad at home (e.g., "Tomorrow, we're bringing home around 170 of the Australians who are on the Diamond Princess in Japan and they will be quarantined for 14 days."), protecting the borders by restricting "new travel restrictions" from high risk COVID-19 regions, and working with foreign governments for "exchanging notes." Moreover, he reassured the public that a large number of the confirmed COVID-19 cases have fully recovered and discharged. Other minor themes emerging were related to collective hope (3.99%), collective efforts (3.35%), self-isolation (3.18%), and containment of COVID-19 (3.03%). Scott Morrison proposed that "we are prepared as any country can be and will get through this," yet emphasizes the importance of "doing the right thing and self-isolating for up to 14 days where they think they might have been exposed to the Coronavirus." He also mentioned that the National Security Committee of Cabinet is "taking the expert medical advice regarding the #coronavirus outbreak."

### *Phase 2 (Clusters)*

In this period, Scott Morrison tweeted 23 posts, out of which all are related to COVID-19. Most of the Twitter posts from Scott Morrison were associated with neutral and positive sentiments, followed by a negative sentiment. The key themes emerging from Scott Morrison's posts were associated with government financial support for small businesses (21.24%), economic recovery plan (16.63%), government financial support for individuals (12.55%), protecting state borders (12.27%), and self-isolation (6.43%). Scott Morrison frequently announced the "\$17.6 billion economic stimulus plan" to respond to the challenges posed by COVID-19, together with specific financial support for small businesses (e.g., "cash flow boost of up to \$25,000) and individuals (e.g., "\$750 one-off payments for pensioners, low-income families, veterans and other income support recipients"). He also reiterated that "individuals who had close contact with confirmed cases need to self-isolate" and confirmed further travel restrictions to protect the Australian borders. Other less tweeted themes were linked to remote work (4.35%), collective efforts (4.35%), Australian government press conference (4.35%), and collective hope (4.35%). Scott Morrison tweeted about the need for everyone "to work from home, if you can" and "working hard to stay ahead of this virus," which reconfirmed the positive, short-term prospects for Australia regarding containment of COVID-19 spread. As well he often announced an official government press conference to inform the public about their response to this pandemic.

### *Phase 3a (First Wave)*

During this period, Scott Morrison tweeted 20 posts, out of which all are related to COVID-19. Most of their Twitter posts were associated with a neutral sentiment, followed by negative and positive sentiments. The major themes emerging from Scott Morrison's Twitter posts were associated with Australian government press conference (20%), government financial support for small businesses (11.43%), government's decision-making based on science (10%), restricting public movement (9.96%), collective efforts (7.50%), and government financial support for individuals (6.10%). Scott Morrison frequently tweeted about the official government press conference to provide updates to the public regarding the COVID-19 response. He also announced certain restrictions to public movement (e.g., forced closure of schools, pubs, clubs, gyms, indoor sporting venues, casinos, and night clubs) and urges "every Australian to do their part, to help save lives and protect livelihoods."; he further made a point that such decisions and calls based on "expert medical advice." He also repeatedly mentioned that the government was offering financial support for small businesses (e.g., 6-months loan deferral) and individuals (e.g., \$189 billion support package). Other minor themes were related to COVID-19 education (5%), mental health support (5%), domestic production of medical equipment and supplies (5%), protecting state borders (5%), and self-isolation (5%). Scott Morrison less often tweeted about educating the public about the COVID-19 (e.g., "identify the symptoms of coronavirus and how they compare to the common cold and influenza.") and reminded everyone that "it is incredibly important for our health and wellbeing that we stay socially and emotionally connected." He also acknowledged to the governments' efforts to negotiate with "Aussie manufacturers to increase domestic production of surgical face masks, sanitizers, googles, and gowns amid the outbreak of COVID-19." As well, he mentioned that "Australia is securing its borders." and thus calls "anyone travelling to Australia from overseas" to self-isolate for 14 days.

### *Phase 4a (First Epidemic)*

In this period, Scott Morrison tweeted 10 posts, out of which all are related to COVID-19. Most of their Twitter posts had a neutral sentiment, followed by negative and positive sentiments. The major themes emerging from Scott Morrison's posts were related to collective efforts (20.58%), social distancing measures (12.47%), frontline workers' efforts (10%), regional lockdowns (10%), and government's decision-making based on science (10%). Scott Morrison regularly tweeted reminds everyone to "listen and act so we can save lives and livelihoods." and practice social distancing in public places. He was also thankful for the efforts of the frontline workers, including "teachers, teachers aids, cleaners, delivery drivers, bus and train drivers, supermarket workers and so many others." As well, he announced regional lockdowns in Australia, which were supported the principal medical adviser. Other minor themes were associated with domestic production of medical equipment and supplies (8.89%), healthcare workers' efforts (8.86%), COVID-19 tracing app (5.59%), and global governments' efforts (5.30%). Scott Morrison pointed out that the government is negotiating with manufacturers "to double the number of surgical masks." He also called everyone to download the COVID-19 mobile app to improve the 'state tracing capabilities' and expresses his gratitude for the healthcare workers "who will be at the frontline of our fight against #coronavirus over the next few months." Furthermore, he mentioned the government collaboration with other foreign governments so "as we work

together to get through this.”

### *Phase 5 (Late Epidemic)*

During this period, Scott Morrison tweets 102 posts, out of which 92 (90%) posts were related to COVID-19. Most of their Twitter posts were associated with a neutral sentiment, followed by negative and positive sentiments. The key themes emerging from Scott Morrison's posts were international diplomacy for COVID-19 (18.01%), government financial support for individuals (15.89%), Australian government press conference (12.74%), government financial support for small businesses (12.19%), and COVID-19 tracing app (10.86%). He repeatedly brought the attention of the public to the availability of government financial support for small business (e.g., JobKeeper support) and individuals (e.g., Home Builder Program) to help ones “hit hard by this crisis get through to the other side so they can thrive as our economy recovers.” He further pointed out that he regularly has “valuable discussions with leaders from Austria, Israel, Greece, Czech Republic, Norway, and Costa Rica [...] to come together to learn lessons and look ahead.” As well, he repeatedly called everyone to download the COVIDSafe app to improve the spread tracing capabilities ‘so we can keep saving lives.’ and announced official government press conference to keep “everyone informed on our response to COVID-19.” Other less tweeted themes were reopening the economy (3.60%), government investments for job creation (3.42%), COVID-19 education (3.26%), and global government efforts (3.18%). Scott Morrison attempted to instill collective hope by promising “focus on the economic recovery after this virus has passed” and investments in job creation in the health, manufacturing, and IT sectors. As well he shared online resources for “kid-friendly” COVID-19 education that will help “get through this together.” He also mentioned that governments ‘swap notes and discuss how they’re managing the #coronavirus outbreak in terms of the twin health and economic crisis as well as managing borders, supply chains and critical medical and other needs.”

### *Phase 3b (Second Wave)*

During this period, Scott Morrison tweeted 15 posts, out of which 9 (60%) posts are related to COVID-19. Most of their Twitter posts had positive and negative sentiments, respectively. The main themes associated with Scott Morrison's posts were international diplomacy for COVID-19 (21.29%), government investment for job creation (17.59%), and government financial support for individuals (14.34%). He often tweeted about the government investments for job creation in the home-building, trades, and apprentices' industries and the availability of government financial support for individuals (e.g., JobSeeker program) to reassure government's continued efforts to deal with the pandemic crisis. Similarly, he repeatedly mentioned that the government was working with other governments in the Asia-Pacific region to “unlock vast potential of our economic partnership,” which would help with the economic recovery for country. Other minor themes were associated with police officers' efforts (11.11%), government's efforts (11.11%), and global governments' efforts (11.11%). Scott Morrison expressed gratitude for the effort of the “1000 Australian Defense Force personnel [who] are being deployed to Victoria to support the state's #coronavirus response.” As well, he reassured the public that “our priority as a government, on the top of dealing with the global pandemic is creating jobs [and] work with likeminded partners and friends to ensure free, open, include and prosperous Indo-Pacific.”

### *Phase 4b (Second Epidemic)*

In this period, Scott Morrison tweeted 9 posts, out of which 8 (89%) posts are related to COVID-19, respectively. Most of his Twitter posts were associated with positive and neutral sentiment, respectively. The main themes emerging from Scott Morrison's posts were associated with government financial support for individuals (15.14%), police officers' efforts (12.50%), and global governments' efforts (12.50%). He frequently tweeted about extending the government financial support for individuals (e.g., JobSeeker) for another six months, until the end of March 2021, which solidified government's efforts to improve the economic recovery of the country. He also empathized that he frequently had “virtual meetings with leaders from Australia, Israel, Greece, Czech Republic, and Denmark to discuss our fight against #COVID-19 [and] swap notes as well as face common challenges responding to the terrible virus.” As well he thanked “the Australian Defense Force personnel who are assigning in our fight against #COVID-19.” The minor themes were related to government investment in job creation (8.23%), government investment in COVID-19 vaccine (6.89%), COVID-19 vaccine (5.49%), and social distancing measures (5.41%). Scott Morrison attempted to instill hope to the public by mentioning that the government continues with its financial support for development of COVID-19 vaccine including ‘secure access and supply. He also pointed out that the government has launched a new “JobMaker plan” that is ‘setting Australia up for our country recovery.’ and prompted everyone to “maintain physical distancing measures” in the light of the increasing cases.

## **Case: Singapore**

### *Political Environment*

The People's Action Party led by Lee Hsien Loong as a prime minister of Singapore succeeded to keep its supermajority in the July 2020 election; however, the opposition made notable gains too. The COVID-19 crisis had negative effect on Singapore's GDP due to the economic shutdown and decline in tourist arrivals. The government had announced three stimulus packages to mitigate the economic cost of the COVID-19 crisis, which required a dip into the state reserves: (1) the first stimulus package was included in the state budget in February 2020; (2) the second stimulus package in the amount of S\$48bn was launched in March 2020; and (3) the third stimulus package valued at S\$5.1bn was launched in April 2020 [43].

### *Phase 1 (Sporadic Cases)*

In this period, Lee Hsien Loong tweeted 33 posts in total, out of which 31 (94%) posts are related COVID-19. Most of Lee Hsien

Loong's Twitter posts in this period had a neutral sentiment, followed by a positive sentiment. The key themes emerging from the Twitter posts were associated with wearing protective masks (9.98%), collective hope (5.47%), Singapore government press conference (5.31%), healthcare workers' efforts (5.22%), and government's supply of protective mask (5.01%). Lee Hsien Loong constantly urged Singaporeans to wear protective masks in public only if they are not feeling well in order to prevent the spread of the diseases. He also made numerous announcements about official government press conferences on which the public are informed about the "one-time mask distribution collection points." Also, he acknowledged the effort of "medical teams and staffers," who are the most crucial for treating patients and gives assurance to residents "that the government is standing with them" in these challenging times. Other less tweeted themes were related to government's actions for preventing transmission (3.88%), mental health awareness (2.76%), collective effort (2.72%), collective kindness (2.49%), and social distancing (2.27%). Lee Hsien Loong reminded residents to keep social distancing measures and gives credit to Singapore government's actions to prevent the transmission of the disease. He also recognized that this pandemic crisis is mentally difficult on everyone but also encouraged residents to be hopeful about the future and help each other.

### *Phase 2 (Clusters)*

During this period, Lee Hsien Loong tweeted 38 posts, out of which 32 (84%) posts are related to COVID-19. Most of his Twitter posts in this period had a positive sentiment. The major themes emerging from his Twitter posts were related to healthcare workers' efforts (6.82%), international diplomacy for COVID-19 (4.51%), government's local financial support (3.53%), Singapore government press conference (3.13%), social workers' efforts (2.36%), and police officers' efforts (2.09%). Lee Hsien Loong constantly expressed collective gratitude for the efforts of healthcare and frontline workers who are important role in treating patients and "keeping the city running." He also stressed governments efforts to share information about the management of the pandemic crisis with other political leaders and governments (e.g., Scott Morrison and Australian Government) and revive the economy in Singapore through significant financial support of local small businesses (e.g., \$100 billions of support measures) and employees (e.g., special bonus of up to 1 months for healthcare officers). As well, he made frequent announcements about official press conferences of the government on which updates about new cases and reminders about social distancing and self-isolating measures are communicated. Other minor themes emerging from the Twitter posts were associated with public kindness (1.99%), informative COVID-19 comics (1.85%), collective effort (1.82%), government's international financial support (1.75%), and measuring temperature (1.71%). Lee Hsien Loong called the public to "let us continue look out for one another" to "keep building Singapore together." He also shared informative comics about COVID-19 that indirectly prompts residents to adhere to the government advice and measures for preventing the spread of the disease, such as social distancing, washing hands, measuring temperature, wearing protective masks and self-isolating. Additionally, he mentioned Singapore government's efforts to financially support "other vulnerable countries fight COVID-19."

### *Phase 3 (Main Wave)*

In this period, Lee Hsien Loong tweeted 32 posts in total, out of which 30 (94%) posts are related to COVID-19. Most of the Twitter posts were associated with a neutral sentiment, followed by positive and negative sentiments. The main themes from Lee Hsien Loong's tweets are related to Singapore government press conference (10.39%), government actions for preventing transmission (6.59%), government's local financial support (6.40%), healthcare workers' efforts (4.98%), and collective efforts (4.76%). He often made announcements about official government press conference and stresses that the government is working hard to prevent the transmission in local clusters, such as implementation of "3-pronged strategy to [...] stop the spread of the disease in the dorms." As well, he prompted the public that "tracking COVID-19 needs everyone to be on the same page." He also acknowledged the "dedicated healthcare workers" and their "commitment to save lives" and government's continued efforts to "provide further [financial] support to for business, workers, and households affected by the month-long COVID-19 circuit breaker." Minor themes emerging were associated with limiting public movements (4.67%), COVID-19 international summit (4.64%), working from home (3.59%), international diplomacy (2.70%), and government's supply of protective mask (2.54%). He provided multiple suggestions for how residents can effectively work from home (e.g., workers attending Zoom meetings) and attend essential events without leaving their homes (e.g., students attending virtual career expo) with the use of technology. He also gives tips to the public on how they can make "DIY reusable [protective] masks. Furthermore, he assured the public that the Singapore government is working other governments to find ways "how we can support each other during this time, including supply chains intact between our countries."

### *Phase 4 (Full Epidemic)*

During this period, Lee Hsien Loong tweeted 4 posts in total, all of which are COVID-19 related. The sentiments of Lee Hsien Loong's Twitter posts in this period were neutral and positive. The key themes from his tweets were associated with international diplomacy (22.09%), recovered COVID-19 cases (16.53%), informative COVID-19 articles (11.26%), collective effort (5.96%), and healthcare workers' efforts (5.20%). Hsien Loong described the long recovery journey of a Bangladeshi workers and gave credit to the "good hands of [the] healthcare team." As well, he reminded the public "to do "their part, in order to defeat COVID-19" and shared informative articles that "explains the rationale of the circuit breaker and [its] outcomes."

### *Phase 5 (Late Epidemic)*

In this period, Lee Hsien Loong tweeted 123 posts in total, out of which 70 (56.91%) posts are COVID-19 related. Most of the Twitter posts were associated with neutral sentiment, followed by a positive sentiment. The key themes emerging from his Tweets in this phase were related to global governments' efforts (19.40%), international diplomacy (16.67%), collective hope (16.62%), and new government for COVID-19 (14.67%). Lee Hsien Loong often pointed out the efforts of his government to collaborate with other governments, including Vietnamese, Colombian, Austrian, and Swiss, to "keep markets open, supply chains connected, [and] battle the diseases together." He also indicates that "our situation is improving" and the government was "determined to look after every worker," which

should boost the public positive perception about the long-term future of Singapore. Moreover, he acknowledged that “whoever leads Singapore during the COVID-19 crisis must have the people’s full support to make difficult decisions need for recovery.” Other minor themes from the Twitter posts were associated with collective efforts (6.30%), healthcare workers’ efforts (6.23%), platform for COVID-19-related information (6.05%), government press conference (5.13%), working from home (4.89%), and informative COVID-19 videos (4.84%). He expressed collective gratitude to the healthcare workers who are helping fight COVID-19. He also prompts residents to “take gatherings online,” shares “ideas for stay-home activities every day,” and encourages “everyone to adjust to living in a COVID-19 world.” In addition, Lee Hsien Loong shared informative COVID-19 videos that explain how residents should protect themselves and prevent the spreading of the disease, and acknowledges the help of volunteers who “reinforce [the] healthcare workers.”

## **Case: Ireland**

### *Political Environment*

In June 2020, the country’s two major parties Fianna Fáil and Fine Gael, in coalition with the smaller Green Party, formed a government led by Micheál Martin as prime minister. This government came into power at the time of severe recession and COVID-19 policy challenges, which in turn created other multiple challenges for the country. The Irish government largely focused on mitigating the economic and social impact of the COVID-19 crisis and adjusting the relations with the UK due to Brexit. The COVID-19 crisis caused Ireland to move from high levels of employment to record unemployment within just a few months. Hence, stimulating the economy and getting those currently unemployed due to COVID-19 back to work had been one of the core challenges for the government [42].

### *Phase 1 (Sporadic Cases)*

During this period, Micheál Martin tweeted 15 posts in total, out of which 13 (73%) posts are related to COVID-19. Most of Michel Martin’s Twitter posts were associated with a neutral sentiment, followed by positive and negative sentiments. The key themes emerging from the Twitter posts were associated with government’s efforts (26.44%) and government negotiations (23.08%). Micheál Martin often acknowledged the public that the government was constantly in “discussion about what should happen next” and held informative meetings with “other party leaders and the chief medical officer” regarding COVID-19. He also pointed out that the current government created a “negotiation steering group” to expedite the management of pressing issues, such as “health, cost of living, housing, and climate change.” Other less frequent themes were linked to healthcare workers’ efforts (7.69%), global governments’ efforts (7.69%), and political blocks’ efforts (7.69%). Micheál Martin expressed his gratitude for the contributions of the frontline, healthcare workers, global governments, and other political parties in Ireland for fighting the pandemic crisis.

### *Phase 2 (Clusters)*

In this period, Micheál Martin tweeted 11 posts in total, out of which 10 (91%) posts were associated with COVID-19. Most of his Twitter posts had a neutral sentiment. The major themes emerging from Micheál Martin’s Twitter posts were associated with collective efforts (30.82%), Irish government press conference (13.84%), and healthcare workers’ efforts (9.50%). He frequently made a call for collective efforts to stop the spread of COVID-19 (e.g., “Everyone has a role to play in beating this.”) and acknowledged the work of healthcare workers, “who are doing so much for us to fight COVID-19.” As well Micheál Martin often made announcements about official government press conference to keep the Irish residents informed about any new developments in relation to the pandemic crisis. Other minor themes emerging from the Twitter posts were linked to government’s efforts (6.44%), collective hope (6.32%), and restricting public movement (6.07%). Micheál Martin mentioned that the government has made “a decision to escalate [their] response to COVID-19” and encouraged the public about beating the pandemic together (e.g., “We can beat #COVID-10 together.”). Moreover, he urged the public to take the advice of the “health spokesperson” and remain home.

### *Phase 3 (Main Wave)*

During this period, Micheál Martin tweeted 21 posts in total, out of which all are related to COVID-19. Most of the Twitter posts had a neutral sentiment, followed by negative and positive sentiments. The major themes emerging from the Twitter posts were related to a call for collective kindness (13.55%), COVID-19 tracing app (9.52%), and adhering to government guidelines (8.80%). Micheál Martin called for a collective kindness and urges the public to (1) download the COVID-19 tracing app for “more transparency” in tracing COVID-19 clusters and (2) “follow the guidelines and work with each other.” Other minor themes were linked to government financial support for small businesses (4.76%), government financial support for students (4.76%), punishing public misbehavior (4.76%) and collective efforts (4.76%). Micheál Martin emphasized availability of government financial support for small businesses (e.g., zero interest loans) and students (e.g., refunds on accommodations) affected by the pandemic crisis. As well, he commented that public misbehavior (e.g., “coughing and spitting at people”) will not be tolerated; thus, urging everyone to “do their part.”

### *Phase 4 (Full Epidemic)*

In this period, Micheál Martin tweeted 6 posts in total, out of which all are related to COVID-19. Most of his Twitter posts have a neutral sentiment. The key themes emerging from the Twitter posts are COVID-19 legislation (29.57%), punishing public misbehavior (16.67%), COVID-19 induced job losses (16.67%), and volunteers’ efforts (11.46%). Micheál Martin regularly tweeted about the need for “a program for government that would transformative in terms of facilitating an economic recovery in the aftermath of COVID-19.” He also mentioned that there are job losses induced by the pandemic crisis (e.g., 1,500 job losses due to the liquidation of Debenhams) for which government financial support will be provided. Additionally, he emphasized that public behaviors not adhering to the current government guidelines will be severely punished and was appreciative to the volunteers’ efforts “producing face shields for use

in the community.” Other less recurrent themes were associated with the economy reopening roadmap (9.62%) and European Union’s financial support for COVID-19 crisis (4.58%). Micheál Martin tweeted about the government’s plans to “incrementally restart the economy” as well as the importance of the financial support from the European Union in executing this plan.

### *Phase 5 (Late Epidemic)*

In this period, Micheál Martin tweeted 95 posts in total, out of which 62 (65%) posts are related to COVID-19. Most of the Twitter posts were associated with a neutral sentiment, followed by positive and negative sentiments. The major themes emerging from the Twitter posts were linked to government investments for job creation (8.96%), healthcare workers’ efforts (7.31%), international diplomacy for COVID-19 (6.28%), COVID-19 tracing app (5.14%), and collective hope (5.03%). Micheál Martin frequently stressed the government investments in job creation (e.g., Job Stimulus Program) that focus on ‘supporting [the] young people’ and appreciation for the healthcare workers’ “extraordinary service and dedication over the last few months on the frontline against COVID-19.” He also pointed out that he is constantly discussing with other governments (e.g., Scott Morrison, Prime Minister of Australia) to improve their response to COVID-19. Moreover, he positively acknowledged the “one million downloads” of the COVID-19 tracing app, and further encouraged the public to download it for “more effective [tracing] system” and remain “confident to overcome the pandemic and rebuild our society.” Other minor themes were associated with government financial support for students (4.84%), government financial support for small businesses (4.84%), European Union financial support for COVID-19 crisis (4.84%), collective efforts (4.38%), and wearing protective masks (4.16%). Micheál Martin pointed out that the government is committed to financially supporting students in the “particularly stressful time for them.” He also mentioned that “[a]n economically strong EU is essential for Ireland’s economic wellbeing”; thus, emphasizing the importance of external financial support for “accelerating the economic recovery of Ireland.” Also, he called the public to “all join the fight” against the pandemic and urges everyone to wear masks to prevent the spread.

## **Case: the US**

### *Political Environment*

Donald Trump was inaugurated as the President of the US in January 2017. The COVID-19 crisis negatively influence the US economy. In the first two quarters of 2020, the US economy had entered a recession largely due to the COVID-19 crisis. Led by Donald Trump, the government moved quickly to help households, businesses and state and local governments, which led an expected surge in the federal government primary deficit from around 3% of GDP in 2019 to 16% of GDP in 2020. However, the focus on Donald Trump’s economic interventions for COVID-19 crisis was largely at the expense of proper prevention to slow the spread of COVID-19 outbreak, for which he was heavily criticized by the Democrat former vice-president Joe Biden, running in the presidential elections in November 2020 [45].

### *Phase 1 (Sporadic Cases)*

Donald Trump tweeted 859 posts in total, out of which 31 (3.6%) posts were related to COVID-19. Most of the Twitter posts were associated with a mix of sentiment: negative and positive. The key themes that emerged from the Donald Trump’s Twitter posts in were related to healthcare workers’ efforts (27.37%), democrats’ poor performance and policy (25.83%), Trump administration’s efforts (22.72%), the US government press conference (13.94%), and unfair perceptions about Trump administration (11.18%). Donald Trump regularly recognized the efforts of healthcare workers in “handling the coronavirus” and “putting America step ahead of the outbreak,” as well as the efforts of its administration to implement “a historically aggressive measures to control the coronavirus in the US.” He also condemned the spread of fake news by the mainstream media and democratic party’s counterproductive actions to oppose the “\$2.5 Billion to prepare for coronavirus.” Other minor themes are politicizing of COVID-19 by mainstream media (9.68%), international diplomacy with China (8.68%), Chinese president properly managing the COVID-19 crisis (7.69%), and inappropriate coverage of mainstream media for COVID-19 situation (7.43%). Donald Trump expressed his concern that the mainstream media is attempting to politicize the pandemic crisis and “doing whatever it can to stroke a national coronavirus panic.” He also pointed out the Chinese government is “doing [its] best to counterattack the coronavirus” and President Xi is ‘strongly leading what will be a very successful operation.”

### *Phase 2 (Clusters)*

Donald Trump tweeted 204 posts in total, out of which 25 (12.25%) posts were related to COVID-19. Most of the Twitter posts in this period had a mixed sentiment: neutral and negative. The key themes linked to this period are Trump administration’s effort (35.56%), President’s effort (23.57%), and government’s efforts (16.00%). In this period, Donald Trump repeatedly mentioned his administration’s effort in developing “a perfectly coordinated and fine-tuned plan at the White House for our attack on coronavirus.” Similarly, he announced his donation of “his quarterly salary to help fight coronavirus [and] find vaccine” and acknowledged the government’s efforts to “provide \$8 billion to fight coronavirus.” Other minor themes from the Twitter posts in this period were associated with avoiding travel (8.00%), inappropriate coverage of mainstream media for COVID-19 situation (8.00%), and unfair perceptions about Trump administration (6.60%). He urged residents not to travel internationally to certain parts of the world, such as Italy and South Korea, to avoid the spread of the disease. As well, he downplayed the potential threats and risk of the COVID-19 by criticizing that mainstream media is ‘spreading disinformation [and] only looking to do harm to the incredible and successful efforts being made.’

### *Phase 3a (First Wave)*

Donald Trump tweeted 802 posts in total, out of which 343 (42.77%) posts are related to COVID-19. Most of the Twitter posts in this

period had mixed sentiment: neutral, positive, and negative. The major themes emerging from the Donald Trump's Twitter posts were associated with collective hope (4.37%), Trump administration's efforts (4.08%), collective efforts (2.56%), government's efforts (2.33%), and the US government press conference (1.75%). Donald Trump repeated that "we have the greatest healthcare system, experts, scientist, and doctors anywhere in the world [...] together we will PREVAIL" to boost the collective hope and acknowledge the collective effort in dealing with the disease. He also recognized that "our VERY early decision to stop travel to and from certain parts of the world [...] saved many lives" and gave credit to the state governments which will provide "resources and tools at its disposals to safeguard the lives and health of our people." Minor themes that emerge from the tweets were associated with impact of COVID-19 (1.46%), President's efforts (1.42%), and reduction of COVID-19 transmission risk (1.17%). He reprimed for employers to "keep commercial establishments safe and encourage [their] employees to practice good hygiene, avoid crowding, handle food carefully, and stay home if" and stated some of the devastating impacts of COVID-19 on the US economy. In addition, he mentioned that he has created "a task force [which] will be solving problems that will assist in crisis for years to come."

#### *Phase 4a (First Epidemic)*

Donald Trump tweeted 543 posts in total, out of which 249 (45.86%) posts were related to COVID-19. Most of the Twitter posts in this period were associated with a mixed sentiment: neutral, positive, and negative. The major themes associated with the Donald Trump's posts were democrats' poor performance and policy (7.63%), demand Congress to pass a supportive bills or programs (6.39%), government's efforts (5.22%), collective hope (4.37%), and Trump administration's efforts (3.17%). Donald Trump repeatedly complained about the counterproductive performance and policy for boosting the economy recovery (e.g., "blocking passing more money to Americans in paychecks and small businesses"). In a similar manner, he urged the Senate to pass supportive bills or programs, such as Paycheck Protection Program and Health Enactment Act, which should help with the economic recovery and saving jobs in the US. He also mentioned that the Trump administration and state governments have delivered "523 million gloves, 69 million surgical masks, 55 million N95 respirators" and "emergency relief for small businesses, more resources for hospitals, and investments for expanded testing" to emphasize the efforts in fighting the pandemic crisis. As well, he attempted to encourage the public about the future in fighting the crisis by making statements such as "light at the end of the tunnel." Other minor themes emerging from the tweets in this period were associated with collective effort (2.81%), the US government press conference (2.01%), reopening the economy (2.01%), and President's effort (2.01%). Donald Trump acknowledged public's collective effort in flattening the curve and urges everyone to "quickly do it a second time." As well, he mentioned that this period is timely to "reopen the economy in a safe and responsible fashion." Lastly, he pointed out his efforts to 'suspend new immigration visas' are aimed to "put workers FIRST."

#### *Phase 5 (Late Epidemic)*

Donald Trump tweeted 1558 posts in total, out of which 364 posts (23.36%) were related to COVID-19. Most of the Twitter posts were associated with a mixed sentiment: neutral and positive. The key themes emerging from Donald Trump's post were related to government's financial support for small businesses (18.46%), economic recovery plan (15.42%), collective hope (13.20%), government's financial support for individuals (8.46%), government's efforts (7.41%), and Democrats' poor performance and policy for COVID-19 crisis (7.35%). He constantly mentioned the funds that state governments provide to businesses to "keep workers on the jobs and help the economic recovery." Similarly, he pointed out that Trump administration helped in supplying "ventilators, tests, medical supplies" to individual states to help "a lot of great people." He also repeatedly encouraged to hope for better future by emphasizing that the US is "reopening for business." As well, Donald Trump pointed out that certain members of the democratic party, such as Nancy Pelosi and Dana Nessel, take intentional actions which were negative for the economic recovery of the US. The minor themes emerging from the tweets were associated with employment opportunities (6.94%), Trump administration's effort (5.76%), reopening the economy (4.39%), the US government press conference (4.33%), and government investment in food supply (4.13%). Donald Trump tweeted the current job opportunities linked to the reopening of the economy (e.g., "The US economy added 2.5 million jobs in May," "The job surge we are seeing is widespread across American industries!" "I am so stunned. I've never seen numbers like this and I've been doing this for 30 years!"). As well, he mentioned the "hard work" of the Trump administration in handling the COVID-19 crisis (e.g., "Ventilators, Testing, Medical Supply Distribution, we made a lot of Governors look very good.") and emphasized government's attempts to invest in securing food supply chains (e.g., "We are getting the Commercial Fishing Industry in Maine back on track after suffering years of stupidity and abuse from the previous administration. Already got 5000 square miles back and available to fish. China and EUR told to drop their Tariffs now!").

#### *Phase 3b (Second Wave)*

Donald Trump tweeted 276 posts in total, out of which 40 (14.49%) are related to COVID-19. Most of the tweets had a positive sentiment. The major themes associated with Donald Trump's tweets were government's investments in public infrastructure (28.60%) and economic recovery plan (19.37%). He repeatedly emphasized the government's efforts to recover the economy and create new job opportunities by investments in public infrastructure (e.g., "Port Tampa Bay in Florida will be awarded \$19.9 million from @USDOT to improve Hooker's Point container facility, adding much needed capacity to keep commerce moving and allowing the region to GROW," "Great news for Louisiana! \$135M proposed to @La\_DOTD from @USDOT to build 8.3 miles of elevated highway from Leeville Bridge to Golden Meadow to protect access to the area against flooding," "Proud to propose a \$25M award to @MichiganDOT to replace and expand the Blue Water Bridge port of entry in @Port\_Huron. CRITICAL for security operations, and commerce at our country's third BUSIEST US- Canada border crossing!"). Minor themes were collective hope (8.91%), increased COVID-19 testing capacity (7.89%), government financial support for small businesses (5.00%), and employment opportunities (3.30%). Donald Trump also tweeted that he is hopefully about the economic prospects of the US, which were mainly contributed to the government's financial support for small businesses (e.g., fast coronavirus stimulus) and newly created job opportunities (e.g., "I brought back cars and jobs. Will do it again for Michigan and everywhere else!"). As well, he mentioned that "our testing is so much bigger and more advanced than

any other country (we have done a great job on this!) that it shows more cases.”

#### Phase 4b (Second Epidemic)

Donald Trump tweeted 979 posts, out of which 263 (26.86%) were related to COVID-19. Most of the tweets were associated with a neutral sentiment. The key themes associated with Donald Trump posts were economic recovery plan (7.79%), inappropriate coverage of mainstream media for COVID-19 crisis (7.21%), collective hope (7.15%), president's efforts (5.78%), lowering drug prices (5.47%), and Democrats restricting full opening of the economy (5.28%). He frequently promoted his efforts to “rebuild the economy” (e.g., “A record setting jobs report: 4.5 million jobs – largest gain in history, 2.8 million women’s jobs – largest gain in history, 3.2 million fewer unemployed workers – largest drop in history, 2.2% points drop in unemployment – largest drop in history”) and reduced drug prices (“Big Pharma is taking television ads trying to make the case that I am raising prescriptions for seniors,” “@realDonaldTrump announces series of executive orders aimed at lowering drug costs,” “Chuck, we will get lower drug prices done. Thanks!”). As well, he was hopefully for the future economic state of the US (e.g., “GREAT AMERICAN COMEBACK,” “We will always prevail. God Bless America!” “America is coming back stronger than ever before.”). He also repeatedly criticized the mainstream media inappropriate coverage of the COVID-19 crisis (e.g., “Deafening silence of the Mainstream Medias, unacceptable mediatic lockdown. #Hydrochloriquineworks #Trump #coronavirus #COVID19 #FauciTheFraud,” “some countries are now a disaster. Lamestream Media doesn’t want to report this. Also, highly inaccurate numbers being reported by many other countries!!! @WSJ) and Democrat’s efforts to slow down the reopening of the economy (e.g., “THE KIDS BELONG BACK IN SCHOOL. Stop making them suffer for your own political gain,” “Can’t go to church. Can’t go to work. Can’t go to school.”). Other less tweeted themes were about Democrat’s deficient performance and policy for COVID-19 crisis (4.80%), Joe Biden’s lack of capability to rebuild the economy (4.71%), Democrats’ unfair perceptions about Trump administration (3.85%), and domestic production of medical equipment and supplies (3.09%). Donald Trump criticized Democrat’s poor performance and policy linked to the management for COVID-19 crisis (e.g., “Pelosi and Schumer blocked desperately needed unemployment payments, which is so terrible, especially since they fully understand that it was not the workers fault that they are unemployed, it is the fault of China,” “Pelosi and Schumer have no interest in making a deal that is good for our Country and our People. All they want is a trillion dollars and, much more, for their Radical Left Governed States, most of which are doing very badly. It is called a BAILOUT for many years of bad Dem Mgmt!”) and their unfair perceptions of Trump’s administration efforts (e.g., “Crazy Nancy Pelosi said I made a mistake when I banned people from infected China from entering the US in January. Tens of thousands of lives were saved, as she danced in the Streets of Chinatown (SF) in late February.”). Similarly, he has been critical of Joe Biden’s capability to recover the economy from the COVID-19 crisis (e.g., “Joe Biden is on a mission to eliminate as many American jobs as possible,” “Mr. Biden is promising to delete the jobs of millions of Americans at a time of soaring unemployment,” “Joe Biden oversaw an anemic recovery while he as Vice President, and he would be a disaster for the economy as a President.”).

## Appendix E: COVID-19 Restrictions and Public Movement

**Table E1. The political leaders’ populist political communication styles**

Political Leader (Country)	Populist PC Style	Representative Tweets
Boris Johnson (the UK)	Predominantly <i>engaging</i> , with some <i>intimate</i> elements	<ul style="list-style-type: none"> <li>“We have published a roadmap for how and when the UK government will adjust our responses to the COVID-19 crisis.”</li> <li>“We can run the tide against coronavirus in the next 12 weeks.”</li> <li>“I want to thank all the incredible nurses, doctors, NHS support staff, [and] carers who were working flat out to fight [the] coronavirus.”</li> </ul>
Justin Trudeau (Canada)	Predominantly <i>engaging</i>	<ul style="list-style-type: none"> <li>“We are also funding four Canadian companies working on what may be [a] breakthrough solution for COVID-19 rapid testing.”</li> <li>“Social distancing is what we all need to be doing right now. #FlattenTheCurve.”</li> <li>“The communities that need this funding have now been identified, and money is getting to them, [it] can keep people safe. For people from Victoria to Hamilton, and Regina to St. John’s know that help has arrived.”</li> </ul>
Scott Morrison (Australia)	Predominantly <i>engaging</i> , with a few <i>intimate</i> elements	<ul style="list-style-type: none"> <li>“Our package also includes \$1 billion to support those sectors, regions and communities that have been greatly affected by the economic impacts of #coronavirus, including those heavily reliant on industries, such as tourism, agriculture, and education.”</li> <li>“Australia is not immune from #coronavirus but [is] well prepared.”</li> <li>“Australians can be confident [that] the Government is doing everything to ensure their safety and keep our economy strong.”</li> </ul>
Lee Hsien Loong (Singapore)	Combination of <i>engaging</i> and <i>intimate</i>	<ul style="list-style-type: none"> <li>“This article explains clearly the rationale for the circuit breaker and what outcome we hope to see.”</li> <li>“Sadly, two COVID-19 patients in the ICU succumbed to the disease this morning.”</li> <li>“My deepest respect to all healthcare workers.”</li> </ul>
Micheál	Predominantly <i>intimate</i> , with	<ul style="list-style-type: none"> <li>“A question for those who think that coughing and spitting at people during #COVID-19 is funny. What is wrong with you? “So many people are making such huge sacrifices. When your</li> </ul>

Martin (Ireland)	some <i>engaging</i> elements	<p>kids ask you, what did you in 2020 to fight the virus, you really want the answer to be ‘I was an idiot?’”</p> <ul style="list-style-type: none"> <li>• “You may think you’re fit and healthy and unstoppable, but you’re jeopardizing people who aren’t. Please think of them and follow the advice. We can beat this together.”</li> <li>• “We all need to look out for each other, especially those most vulnerable in our communities.”</li> </ul> <p>“Compassion is a medicine. COVID-19 is taking so much from us, but it is also giving us something special. The opportunity to come together as one humanity to work together, to grow together.”</p>
Donald Trump (the US)	Combination of <i>champion of the people</i> and <i>engaging</i>	<ul style="list-style-type: none"> <li>• “Crazy Nancy Pelosi said I made a mistake when I banned people from infected China from entering the US in January. Tens of thousands of lives were saved as she danced in the Streets of Chinatown (SF) in late January. Biden agreed with her, but soon admitted that I was right.”</li> <li>• “The bill passed in the Senate today will provide an additional \$310 billion for the Paycheck Protection Program,” “\$49.9 million in Federal Funding is on its way to @DallasLoveField Airport to aid economic recovery,” “\$817 million will aid in the economic recovery.”</li> <li>• “We are United in our effort to defeat the Invisible China Virus, and many people say that it is Patriotic to wear a face mask when you can’t socially distance. There is nobody more Patriotic than me, your favorite President!”</li> </ul>

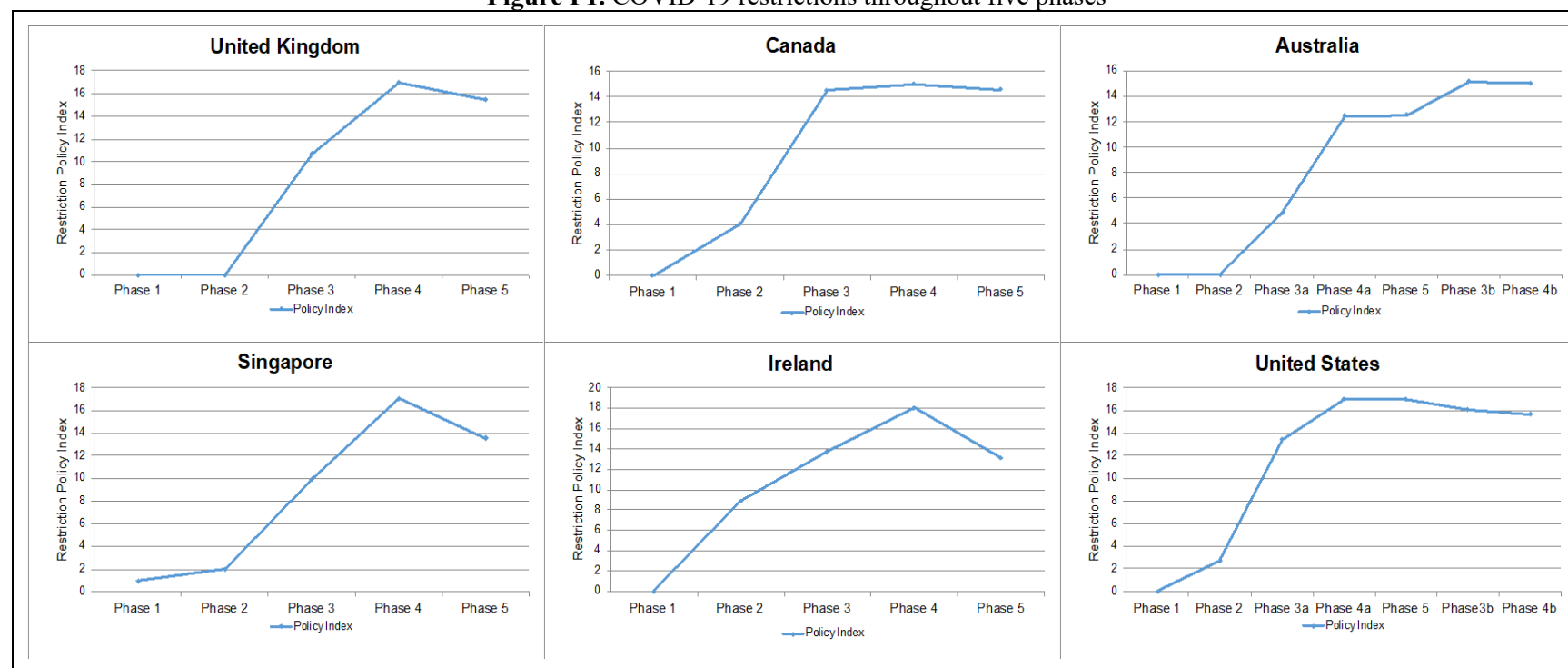


## Appendix F: COVID-19 Restrictions and Public Movement

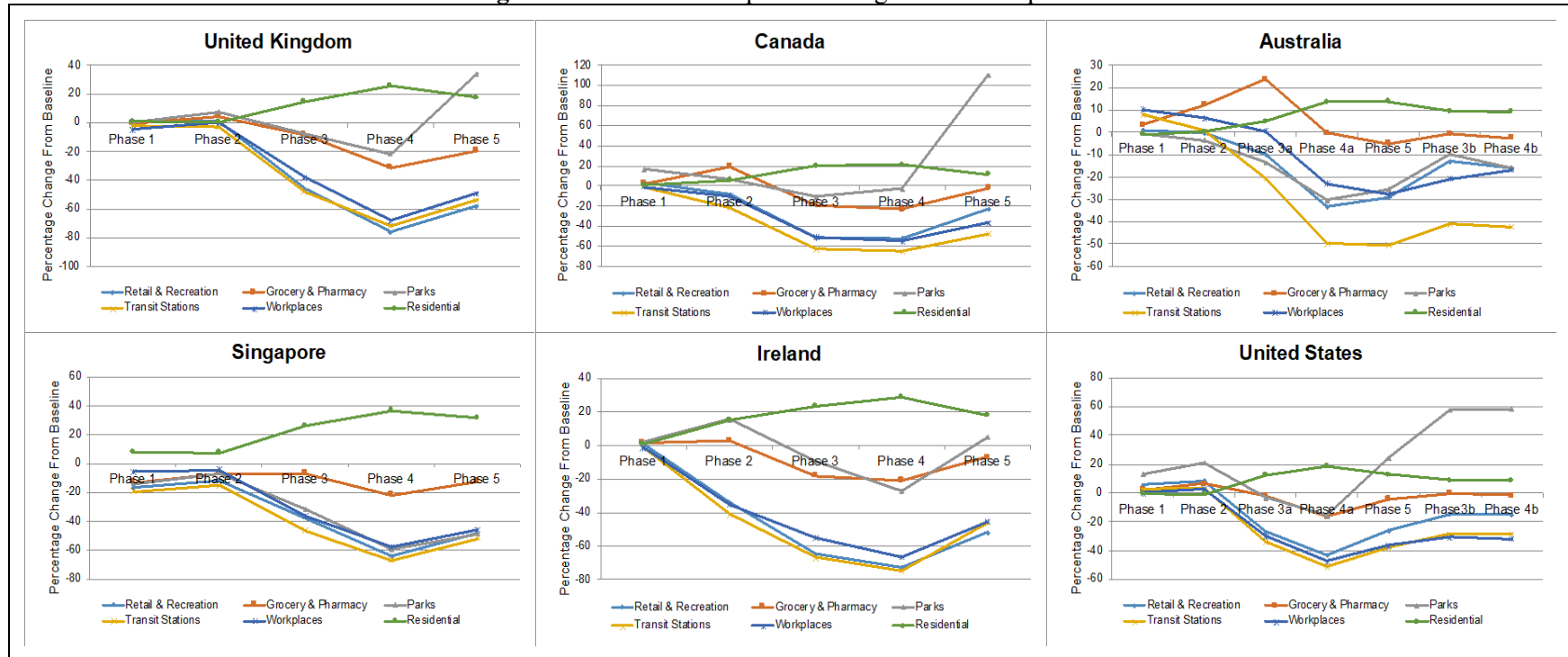
**Table F1.** Descriptive statistics and correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1. Aggregate government restriction policy	18.0	12.14	1.00										
2. School closures	2.25	1.11	0.89	1.00									
3. Workplace closures	1.84	1.06	0.91	0.80	1.00								
4. Cancellations of public events	1.66	0.72	0.82	0.70	0.64	1.00							
5. Gathering restrictions	3.24	1.41	0.91	0.82	0.76	0.86	1.00						
6. Public transport closures	0.60	0.59	0.55	0.41	0.50	0.24	0.38	1.00					
7. Stay-at-home requirements	1.13	0.82	0.79	0.63	0.75	0.57	0.61	0.44	1.00				
8. Restrictions on internal movement	1.42	0.89	0.86	0.69	0.82	0.65	0.72	0.48	0.63	1.00			
9. Public movement	74.45	92.70	-0.45	-0.34	-0.44	-0.37	-0.39	-0.38	-0.49	-0.30	1.00		
10. New cases	5567.79	13892.41	0.27	0.27	0.19	0.19	0.21	0.26	0.21	0.26	0.12	1.00	
11. Population	78,824,835	114813992.1	0.17	0.22	0.14	0.10	0.07	0.18	0.17	0.19	0.18	0.80	1.00

**Figure F1.** COVID-19 restrictions throughout five phases



**Figure F2. Movement of public throughout the five phases**



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