

Public opinions on social media: how to become a trustworthy leader in times of crisis

International
Journal of Public
Leadership

Andi Pitono

*Department of Public Policy Study, Institut Pemerintahan Dalam Negeri,
Sumedang, Indonesia, and*

Fadhli Zul Fauzi

*Department of Applied Indonesian Politics, Institut Pemerintahan Dalam Negeri,
Sumedang, Indonesia*

Received 23 July 2024
Revised 7 November 2024
29 December 2024
Accepted 30 December 2024

Abstract

Purpose – The study compares public opinions toward several heads of state in times of crisis across countries, especially during the conflict between Russia and Ukraine. Although recent studies have primarily addressed public sentiment during the COVID-19 pandemic, critical international conflicts continue to impact economic and political dynamics that need warrant examination.

Design/methodology/approach – Using social media data, this study utilizes content and sentiment analysis to assess public perceptions of leaders' actions and communication strategies.

Findings – Findings indicate that most leaders elicited predominantly negative sentiment, with only two leaders viewed favorably.

Originality/value – A notable contribution of this study is the identification of communication patterns as pivotal in shaping public trust; leaders who failed to articulate a clear shared vision faced heightened negative sentiment, as ineffective communication fostered public distrust and anxiety. Although principles of ethical political leadership were observed in some responses, this study underscores that ethical leadership alone is insufficient. Transparent and strategic communication, particularly during crises, emerges as essential to aligning public perception and fostering trust, highlighting its importance as a core component of effective leadership in international conflicts.

Keywords Trustworthy leader, Public opinion, International conflict

Paper type Research paper

Introduction

A crisis is the perfect time to test someone's leadership and his or her ability to make decisions and take action (Goel and Sharma, 2021). When a crisis such as a disaster or an international conflict occurs, the communication pattern of leaders and society becomes a significant aspect to consider because it can form opinions and shape collective behavior in society, as well as cause massive changes in psychological conditions (Binagwaho *et al.*, 2020). The psychological changes refer to, for instance, someone's increasing anxiety as result of fear for their safety. Such conditions can be exacerbated by the widespread hoaxes that can harm those with a lack of digital literacy (Budi and Pamungkas, 2020; Pérez-Dasilva *et al.*, 2020). The problem becomes more complex as the digital era allows for quick communication and information dissemination, with the use of social media platforms to share one's experience (Goel and Sharma, 2021). The fast exchange of information on social media can generate opinions in an instant. Leaders in the public sector, then, have a vital role in providing information and shaping opinions in the social media environment. Any decision made or action taken by a leader will result in a public reaction—in this case, whether a reaction is good or bad is based on the said decision or action (Fauzi and Kusumasari, 2020; Peck *et al.*, 2021).

Some existing studies have discussed public opinion and leadership in times of crisis. The study by Wheeler *et al.* (2022), for example, addressed the change of public perception toward leaders in the Australian public sector when facing natural disasters and the COVID-19 pandemic. The study found a positive correlation between pandemic mitigation and a change



of social perception toward the leaders, and a negative correlation between natural disaster mitigation and change of social perception. [Goel and Sharma's \(2021\)](#) study analyzed the correlation between leadership and crisis situations, particularly in handling the COVID-19 pandemic. It studied communication patterns on Twitter and focused on public sector leaders, who were classified into four groups: health, politics, journalism, and research. However, the study barely touched on the relationship between public trust and the leaders in pandemic mitigation.

Ever since the COVID-19 pandemic broke, studies on public leadership have been concentrating on public sector leaders' ability to handle the pandemic ([Woiceshyn et al., 2022](#); [Zhao, 2020](#)). However, little research has been done to study the international conflict between Russia and Ukraine, whose impact has expanded to other countries. The conflict has caused an economic crisis ([Markus, 2022](#)). Even though COVID-19 had a significant impact on governance globally ([Huang et al., 2022](#); [Kusumasari et al., 2023](#)), the conflicts that have occurred (between Ukraine and Russia) also present problems that are no less complex. The responses from government leaders of many countries toward this conflict also varied and might have brought about different societal opinions.

This study aims to determine the relationship between public opinions and the decisions or actions of nation leaders in dealing with a crisis, specifically the international conflict between Russia and Ukraine, through conversations on Twitter. The researchers collected conversations from Twitter about state leaders and the Russia–Ukraine conflict. Then, we analyzed the data to determine the extent to which the public trusts their respective political leaders. Our study begins to fill the gap in research on comparisons of public trust toward state leaders in times of crisis.

Literature review

Ethical leadership and public opinion

Ethical leadership has become a focal point in contemporary research, as scholars examine how value-oriented approaches shape the efficacy of leadership practices ([Zhou et al., 2022](#)). This perspective underscores the importance of a people-centered approach in the execution of leadership responsibilities and policy-making, challenging traditional models that may overlook this aspect ([Vikaraman et al., 2021](#); [Zhou et al., 2022](#)). Those studies revealed that leaders often gave no consideration to people-orientedness as one of dimensions affecting leadership ([Vikaraman et al., 2021](#)). Therefore, ethical leadership appeared as an approach that gives consideration to the human aspect in the measurement of leadership, including how a person or group behaves towards the leader ([Moon and Christensen, 2021](#)). Ethical leadership is defined broadly as the demonstration of normatively appropriate behavior through personal actions and interpersonal relationships, and the promotion of such behavior to followers through reinforcement, two-way communication and decision-making ([Cortellazzo et al., 2019](#)). The primary personal characteristics of ethical leaders are integrity, honesty, trust, respect, and the ability to listen ([Moon and Christensen, 2021](#)).

[Mozumder \(2022\)](#) found that ethical leadership has rarely been discussed in political and governmental contexts even though some aspects of ethical leadership, such as people-orientedness, has been closely related to political leaders. A political leader is defined as a democratically chosen leader who represents a group of people, works in a governmental framework, and has influence over the constitutional and legal framework ([Mozumder, 2022](#); [Smith, 2021](#)). Studies on public leadership have begun to find the correlation between the practice of value-based leadership (which ethical leadership is part of) and its effect on public behavior and trust ([Vikaraman et al., 2021](#)). The pattern of public behavior is likely to shift in response to a leader's policies and attitudes, indicating a direct correlation between ethical political leadership and public trust.

There are at least three pillars in ethical leadership to take into consideration: the code of ethics (related to regulations), being a moral person, and being a moral leader ([Mozumder,](#)

2022). The three pillars of ethical leadership focus on how the leader takes into account the moral/ethical aspect in performing his or her duties, as well as the effect of any behavior and policy being issued to the people. In the case of ethical political leadership, there were two important contexts to note, namely public interest and public trust (Zhou *et al.*, 2022). Examining public opinions is regarded as an effective way to evaluate someone's morals/ethics as a human being and leader as well as to assess the fulfillment of the public interest and public trust (Goel and Sharma, 2021; Stravinskiene *et al.*, 2020). Public opinions refer to various expressions by individuals/groups on their surroundings (Nisbet and Kamenchuk, 2021). Public opinions are considered as one of the effective parameters in observing the public interest and also viewing the extent to which the public trusts its leaders (Wheeler *et al.*, 2022). Generally, public opinions could be observed based on what being felt by the public through a medium because most people know nothing about the leaders' decision-making process (Tsaniya *et al.*, 2021; Wheeler *et al.*, 2022). This study analyzes public opinions on social media. The use of social media as a platform to evaluate public opinions would show how far a leader fulfills the three fundamental pillars in ethical leadership and two contexts (public interest and trust) to consider in ethical political leadership.

Leadership and trustworthy governance

Trustworthy governance relates to the measurement of trust in government performance (Carnevale, 1995). This measurement comes from public opinion or expression, that is to say what the public feels about the policies the government has implemented. Trustworthy governance then can be used to develop a model regarding how governments can gain and retain the public's trust (Tangcharoensathien *et al.*, 2020).

The idea of measuring trust in leaders is also offered by this concept. This notion measures a number of factors, including essentiality and veracity (Carnevale, 1995). In essence, the metrics for this concept are similar to those for ethical leadership. However, there is one aspect that must be considered with respect to the concept of trustworthy governance, which is called the "shared vision" (Tangcharoensathien *et al.*, 2020). One persistent theme of trustworthy governance is the importance of shared vision, where the leaders who cannot communicate their vision clearly will have trouble generating trust (Kawtrakul *et al.*, 2021).

The intersection between ethical leadership and public trust forms a critical area of exploration, particularly within governance contexts. Understanding how leaders' value-driven behaviors influence public perceptions and societal trust sheds light on the effectiveness of governance strategies (Tsaniya *et al.*, 2021; Wheeler *et al.*, 2022). This connection also underpins the concept of trustworthy governance, which emphasizes the importance of a shared vision—a crucial element that enables leaders to align their policies and goals with public expectations. Leaders who effectively communicate and embody a shared vision foster greater trust, as it reassures the public that the government's direction and decisions are transparent and collectively beneficial (Kawtrakul *et al.*, 2021). Ultimately, this shared vision bridges the gap between leadership intentions and public trust, reinforcing the necessity of ethical and transparent governance practices (Tangcharoensathien *et al.*, 2020; Kawtrakul *et al.*, 2021).

Public emotions on social media

Enhancing our understanding of how ethical leadership and trustworthy governance influence public trust requires examining the role of public emotions on social media. Analyzing these emotions offers valuable insights into how leaders' actions and communications impact public perception and trust. Various empirical studies have developed research on evaluating the level of public trust towards leaders based on the perspective or each individual's emotion when the leaders communicate (Hameleers *et al.*, 2021). Emotions produce different effects—much of the previous research has linked negative emotions like anger and fear to the level of public trust in leaders by looking at people's communication patterns when talking about authoritarian or problematic leaders (Beauregard, 2022; Perlstein and Verboord, 2021).

Anger refers to the feeling of disappointment caused by detrimental and dangerous behaviors of the leader, while fear refers to negative emotions vaguely related to public behavior itself (Binsar and Mauritsius, 2020; Kothari *et al.*, 2021; Morisi and Wagner, 2021). Fear makes someone more careful, but anger makes someone more aggressive and confident (Morisi and Wagner, 2021). Past studies on public opinions revealed that out of all the negative emotions, fear and anger appeared the most in social media conversations (Aljameel *et al.*, 2021; Perlstein and Verboord, 2021).

Apart from fear and anger, some emotions such as trust, joy, anticipation, sadness, surprise, and disgust have been frequently used in the existing studies discussing public opinions and leadership on many social media platforms (Goel and Sharma, 2021; Kothari *et al.*, 2021). Public behavior is influenced by information and interactions on media platforms. Differences in public opinion often arise due to different conditions and responses in different nations during a crisis (Kusumasari *et al.*, 2023; Zhu and Park, 2021). However, social media allows for rapid information exchange and easier communication, allowing researchers to categorize emotions in a more detailed and precise way during a crisis that impacts different countries (Alwakid *et al.*, 2022; Zhu and Park, 2021). This categorization of emotions can reveal the dominant public preferences and behaviors in responding to an issue, along with the factors that influence these responses (Chapkovski and Schaub, 2022; Morisi and Wagner, 2021; Nisbet and Kamenchuk, 2021; Tully *et al.*, 2020). This study also observes public emotions on social media, particularly related to public opinions on leaders amid the conflict between Russia and Ukraine. Some emotions noted above appear in this study to reveal public tendencies in responding to any action and policy of the nation's leader.

As noted in Table 1, the researchers would show emotions and sentiments of the public towards several state leaders during the conflict between Russia and the Ukraine. The decision to choose those leaders was based on their active involvement in public discussions in that conflict. The analysis of public emotions and sentiments was conducted on social media and intended to reveal the public opinions on each leader. We believed that the analysis on public emotions and sentiments would enable us to evaluate the ethics/norms of each leader and how these leaders gained trust from the public in any of the actions they took or policies they made. Finally, we will show how a political leader fulfilled each pillar in ethical leadership and how a political leader in the public sector obtained trust from members of society in the middle of the crisis.

Method

The data was collected in this study using Twitter Streaming Application Programming Interface (API) and Python to view responses and patterns of public communication toward

Table 1. Public emotions analysis

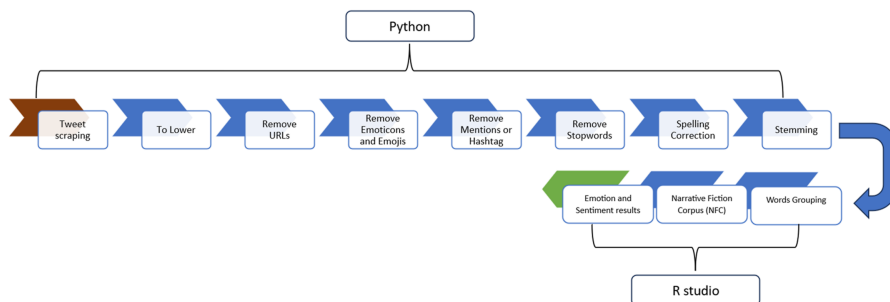
No	State leader	Position	Case of crisis	Sentiment	Emotions
1	Vladimir Vladimirovich Putin	President of Russia	Russia-Ukraine War	Positive or Negative	Anger Fear
2	Volodymyr Zelenskyy	President of Ukraine			Sadness
3	Joseph Robinette Biden Jr (Joe Biden)	President of the United States			Trust Joy
4	Emmanuel Macron	President of France			Anticipation
5	Justin Pierre James Trudeau	Prime Minister of Canada			Disgust Surprise
6	Recep Tayyip Erdogan	President of Turkey			
7	Joko Widodo (Jokowi)	President of Indonesia			

Source(s): Table by authors, 2024

any action taken or policy made by the state leader in the Russia-Ukraine conflict. Twitter is a social media platform categorized as a microblogging site, in which users are able to share messages, photos, videos, and external links to their followers (Binsar and Mauritsius, 2020; Goel and Sharma, 2021; Rasyid *et al.*, 2021). Several studies reveal that social media, like Twitter become platform where public can communicate their emotions naturally (Goel and Sharma, 2021; Kothari *et al.*, 2021). Various online platforms (including Twitter) have provided API as a medium of interaction between developers and users through access to large quantities of systematic data. API is a tool that bridges the interaction between a computer program and web services, and it is able to help collect data in real time by tracking public activities on the platform (Goel and Sharma, 2021). Therefore, Twitter streaming API was used in this study to observe public opinions or conversations about state leaders during the conflict between Russia and the Ukraine.

The author used a Python package called *tweepy* and Twitter Streaming API to scrape conversations (tweets) in English on state leaders in relation to the conflict happening between Russia and the Ukraine. We received permission from Twitter using the following link: <https://developer.x.com/en/docs/twitter-api>. Once approved, the researchers began the data scraping process. Keywords used in this study were the names of the state leaders (e.g. “Biden”), along with “Russia” and “Ukraine”. We collected conversation data from 1 June 2022 to 11 July 2022, the period in which the conflict escalated. The researchers took several state leaders as samples, including Vladimir Putin (Russia), Volodymyr Zelenskyy (Ukraine), Joe Biden (the United States), Emmanuel Macron (France), Justin Trudeau (Canada), Recep Tayyip Erdogan (Turkey), and Joko Widodo (Indonesia). The collected data was saved in the JSON format as it would be easier than other formats to parse and analyze. We then conducted data cleaning to delete some data forms (e.g. URLs, and hashtags), which were going to be excluded from the analysis (see Figure 1).

This study applied the content and sentiment analysis method to analyze the collected data in depth. Content analysis was performed to classify each communication pattern—an approach usually applied to classify data such as conversations for a deep analysis (Kothari *et al.*, 2021). Moreover, analysis sentiment was adopted to strengthen the researchers’ analysis. The analysis sentiment was a form of *opinion mining* as public opinions, sentiments, evaluation, behaviors, and emotions were analyzed through a text (Matsuoka and Gonzales Rocha, 2021; Raj and Balachandran, 2020). Thus, each conversation collected was parsed to be groups of words and classified based on the sentiment of each word (see Table 2). In order to collect sentiments, we used RStudio and leveraged the narrative fiction corpus (NFC) library. NFC is a large collection of literary texts that have been annotated with information about their structure and content, such as the characters, events, and themes that are present in the text. NFC is used as a resource for researchers studying the structure and meaning of literary texts,



Source(s): Figure by authors (2024)

Figure 1. Tweets preprocessing

Table 2. Interpretation of emotions

Emotions	Original meaning	Contextual meaning
Anger	Resentment caused by deliberately negative behavior	Disappointment or resentment toward leader behavior/response to the crisis
Sadness	Emotional condition that include disappointment, grief, and hopelessness	Grieving and feeling hopeless when public see the negative effects of leader behavior/response to the crisis
Joy	Happiness, satisfaction, and compatibility feeling with an event or other people's response to what they expected	An individual's sense of happiness, satisfaction, and compatibility with the expected leader response
Anticipation	Feeling of anxious suspense when unsure whether the outcome of a particular event will occur as expected	Feeling of anxious suspense when unsure whether the outcome of the leader response will play out as expected
Fear	The feeling of being threatened or persecuted	Pessimistic expectations about the possible outcomes of a leader behaviour/response, or the belief that the leader will bring adverse effects to beneficiaries
Surprise	Positive or negative emotional state after an unexpected event	Astonishment at the leader behaviour or response in a positive or negative manner
Disgust	Intense emotion that causes a feeling of repulsion	A sense of exclusion/alienation from a policy's benefits, leading to a lack of interest in the leader
Trust	Set of values, beliefs, or experiences that foster a sense of belonging	A sense of satisfaction with leader behaviour or response, either at the decision-making stage or during its implementation

Source(s): Authors' modification of [Plutchik \(2003\)](#), [Yuda and Fauzi \(2024\)](#)

and it can also be used to develop computational models for analyzing and understanding the narrative elements of a text.

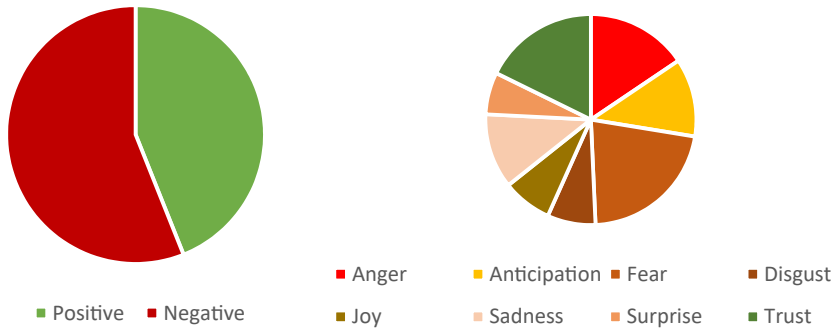
This study revealed a total of 108,486 *direct tweets* and 1,912,643 *indirect tweets* discussing the chosen state leaders amid the conflict between Russia and the Ukraine. Of the direct tweets collected, 1,771,654 words were used in the study. After data cleaning, the collected conversation were analyzed using NFC, the data collected were analyzed based on sentiments and emotions from each word. In this study, emotions are divided based on [Plutchik's \(2003\)](#) wheel of emotions. There are eight basic emotions: anger, anticipation, disgust, fear, joy, sadness, surprise, and trust. Sentiments are divided into two categories: positive and negative.

Results and discussion

Findings

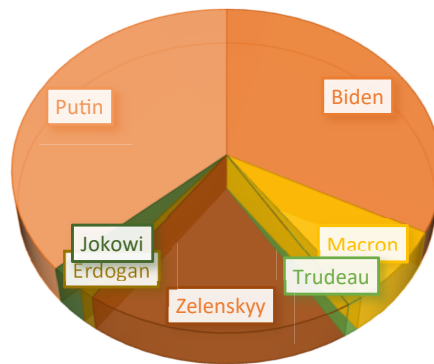
[Figure 2](#) shows that negative sentiments (56%) outnumber the positive ones (44%) by a thin margin. The grouping of emotions shown in the chart (right side) show the dominance of fear (22%) compared to the other emotions. On the other hand, the social trust toward state leaders amid the conflict is quite high, as seen from trust (18%). The following emotions in order are anger (16%), anticipation (12%), sadness (11%), joy (8%), disgust (7%) and surprise (6%). However, the number of sentiments and emotions in general has not represented public sentiments about specific state leaders. There are significant differences in sentiments across the sample state leaders. Most conversations collected in this study (see [Figure 3](#)) revolve around three state leaders: Putin (about 37%), Biden (about 33%), and Zelensky (18%).

Meanwhile, other state leaders did not appear as frequently in the conversations: Macron (France) appears in 7% of the tweets, Jokowi (Indonesia) 3%, and Trudeau (Canada) and Erdogan (Turkey) about 1% respectively. The top three state leaders indeed are the main actors



Source(s): Authors' processing and analysis of NFC (2022)

Figure 2. Sentiment and emotions



Source(s): Authors' processing and analysis of NFC (2022)

Figure 3. The conversation based on state leader

in the Russia-Ukraine conflict—Putin, Biden and Zelensky, the presidents of Russia, the United States and the Ukraine respectively. However, conversations on each state leader had their own tendencies. There were some significant differences on the sentiments on each state leader because of the leaders' different behaviors (as reflected by their policies, responses, and actions). Moreover, these differences of public opinions can be seen in conversations with more responses (most liked tweets) about each state leader. The opinion differences, including the numbers of conversations on each state leader in detail, are presented in [Table 3](#).

As stated previously, the different sentiments regarding the state leaders can be seen through the differences of emotions in the conversations people responded to the most. In the case of Biden, the conversations with more responses tend to imply trust, as most people believe that the economic recession is not related to Biden's unsatisfactory performance; rather, it was fueled by the conflict when Russia attacked the Ukraine. In the case of Macron, the sentiments gravitated towards fear, as the conversations with most responses are concerned with Macron's statement that the war is unlikely to stop soon, and that each party must be prepared to deal with the effects from the possibility of a long-term conflict.

The case of Trudeau leaned towards disgust, triggered by Canada's involvement in the conflict. In Zelensky's case, based on the conversations that gained the most responses, the dominant emotion was sadness because the state leader and the state are considered threatened

Table 3. The conversation on Twitter based on the state leaders

Leader	Total direct tweet	Percentage (%)	Most liked tweet	Total likes	Total retweets	Author ID
Biden (US)	35,513	32.74	Reminder that inflation is high in EVERY advanced economy, not just in America. Blame Covid and Russia's invasion of Ukraine. It has nothing to do with Biden, and anyone who says otherwise is either ignorant or lying	33,751	10,148	15801906
Macron (France)	8,107	7.47	Macron says, once again, that he does not want to "humiliate" Putin. But unless Putin loses - and fully understands that he has lost- the war will not end	11,512	2,467	297100174
Trudeau (Canada)	1,153	1.06	Russia needs a functioning Nord Stream 1 in order to finance its genocidal war against Ukraine. To do that it needs a turbine under repair in Canada to go to Germany. The Scholz government is strong-arming the Trudeau government to violate Canadian sanctions and betray Ukraine	6,253	1,648	2415072836
Zelenskyy (Ukraine)	20,133	18.56	Zelenskyy admits Russia now holds one-fifth of Ukraine, the largest country entirely within Europe. What he didn't acknowledge is that Russia controls Ukraine's industrial heartland, 90% of its energy resources (including all of offshore oil), and its critical ports and shipping	22,568	6,093	19329136

(continued)

Table 3. Continued

Leader	Total direct tweet	Percentage (%)	Most liked tweet	Total likes	Total retweets	Author ID
Erdogan (Turkey)	1,117	1.03	Erdogan says Ukraine, Russia close on grain deal. "Negotiations are going ahead so that this grain, and sunflower oil, everything can reach the world" Turkish President Erdogan said. Italian Prime Minister Draghi said that Turkey had "a central role" in the plan	2,192	398	146254897736735
Jokowi (Indonesia)	2,782	2.56	Ms. Iriana, wife of #Indonesian President #Jokowi, visits wounded victims of #Russia's invasion of #Ukraine in #Kyiv. She is simply amazing, probably the first wife of a head of state to accompany her husband to war-torn #Ukraine. #Respect	4,205	1,079	822024131784810000
Putin (Russia)	39,681	36.58	#Ukraine Vice President of the state-owned Gazprombank Igor Volobuev has fled Russia in a protest against Putin. He joined the Freedom of Russia Legion. He was born in Ukraine but was not a citizen. When the Soviet Union collapsed, he received Russian citizenship	12,835	2,394	720139699

Source(s): Table by authors, 2024

in the war and the public was still unable to predict the potential for long-term loss that the Ukraine would suffer. The case of Erdogan showed anticipation, as the conversations revolve mostly around the possibility of a future treaty and the president's involvement in the treaty. The case of Jokowi, meanwhile, showed joy because of the bravery of the president and his wife for making a visit to the Ukraine and Russia amid the heated conflict. Finally, for Putin, the state leader that is the leading actor in the conflict, most tweets displayed anger.

The emotion could be seen in conversations about the attitude of a Russian government official who is against Putin's policy of launching the attack on the Ukraine. The researchers then analyzed the emotions and sentiments more deeply to show what aspects contributed to weak trust of the public in a leader.

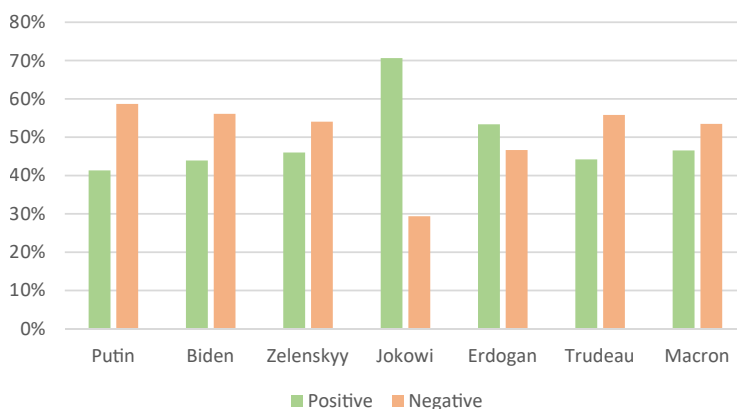
Sentiments and emotions on every leader

In line with the analysis of sentiments and emotions conducted on conversations on each leader, a significant difference appears in each case. As previously stated, negative sentiments are very dominant in conversations related to state leaders and the Russia-Ukraine conflict. The author used NRC to classify sentiments on each state leader and the results show that the conversations gravitated towards negative sentiments rather than positive sentiments. As described in [Figure 4](#), positive sentiments are more dominant only in regard to two state leaders' response/policy/action pertaining to the conflict between Russia and the Ukraine.

The results above show that most state leaders received negative sentiments instead of positive ones. Conversations dominated by positive sentiments only appear in the case of Jokowi and Erdogan even though only about 4% of all conversations discuss the two presidents. Jokowi's percentage of positive sentiments is about 71% of total conversation discussing him and the Russia-Ukraine conflict. On the other hand, Erdogan's proportions of positive and negative sentiments show no significant difference, with positive sentiments at about 53% and negative sentiments about 47%. The high percentage of positive sentiments in Jokowi's case resulted from the leader's attitude from his direct visit to the conflict area. Some conversations, as described in [Table 1](#), show that the attitude leads to positive public opinion on the state leader in time of an ongoing conflict.

The state leaders who received more negative than positive sentiments included Zelenskyy, whose country has suffered substantial losses as a result of the war. The war has caused environmental damage, depletion of energy resources, and the loss of life. Some public opinions expressed regret over the Zelenskyy's lack of sternness. The percentage of negative sentiments towards Zelenskyy are about 54%. Putin, on the other hand, has the lowest percentage of positive sentiments (41% of all conversations).

For Putin, there is a quite sizable gap between the percentages of positive and negative sentiments: about 18%. This outcome largely stems from public opposition to Putin's policy on the Ukraine conflict and heightened attention to civilian casualties. Following Putin, Biden ranks second among state leaders with a high percentage (56%) of negative sentiment. Many



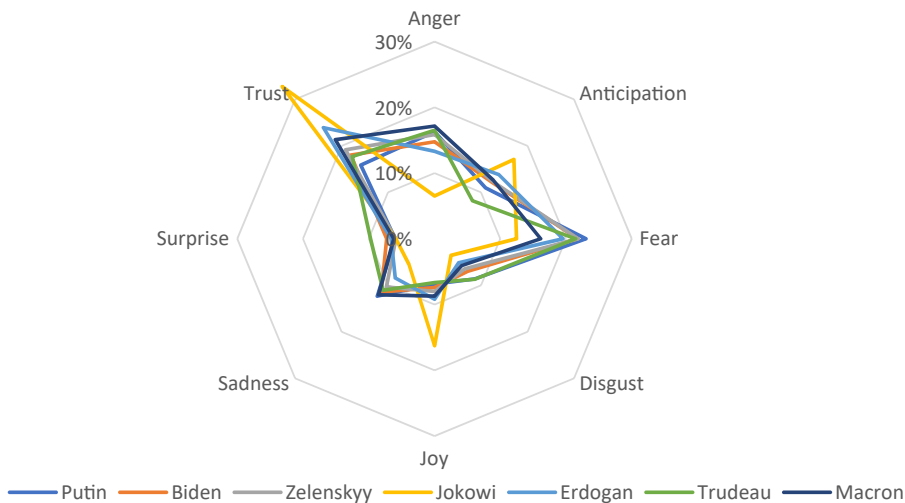
Source(s): Authors' processing and analysis of NFC (2022)

Figure 4. The classification of sentiment based on the state leaders

conversations about the potential vested interest behind the war, as well as those about the effect of the war on other countries, are believed to be the reason for the high negative sentiments that were expressed. Moreover, the dominance of negative sentiments on several state leaders have a strong correlation to the emotions contained in each public conversation on Twitter. The result of the emotion analysis shows the differences that support the findings of the sentiment analysis (see Figure 5). Some emotions, such as trust, anger, fear, and sadness, appear to be quite dominant on each state leader.

As previously explained, anger refers to public disappointment as result of a leader’s detrimental or dangerous behavior, whereas fear is a negative emotion vaguely related to the behavior of the people themselves in a certain condition (Binsar and Mauritsius, 2020; Kothari et al., 2021; Morisi and Wagner, 2021). In conversations about Trudeau and Macron, the percentage for anger is 17% respectively, while Putin and Zelenskyy follow suit with 16% each. In Macron’s case, the word “humiliate” frequently appears (1,123 times), reflecting the public’s anger (see Table 4). Meanwhile, in Trudeau’s case, the word “TrumpWarRoom” also appeared frequently as a representation of anger. The anger dominating conversations about Putin was, of course, as a result of public disappointment on his policy to attack Ukraine. Several words such as “standwithUkraine” (3,470) and “stop” (2,742) often appeared in the conversations discussing Putin and the Russia-Ukraine conflict. These words appear as the form of public anger toward Putin’s decision that seemed to ignore the condition of Ukraine’s civilians and the impact of the war globally. Then, in the case of Ukraine, the word that frequently appears, namely “territory” (1,291 times), represents the public’s disappointment with Zelenskyy’s lack of firm behavior in facing the attack from Russia.

Based on previous research, fear tends to promote caution, whereas anger often results in increased aggression and confidence (Morisi and Wagner, 2021). In the context of public sentiment toward certain state leaders, fear emerges as a more dominant emotion than anger. Among the three state leaders most frequently discussed on Twitter, fear is expressed at the highest rates: 23% for Putin and 22% for both Biden and Zelenskyy. For Putin, the term “invasion” appears 2,369 times, while for Biden, the term “weapon” occurs 1,905 times. These fear-related terms suggest that the public views each adverse event during the Russia-Ukraine war with heightened caution. Notably, this caution associated with fear differs from the caution



Source(s): Authors’ processing and analysis of NFC (2022)

Figure 5. The dominant emotions of every leader

Table 4. The top 30 words on every leader

No	Keywords Biden	Total words	Keywords Macron	Total words	Keywords Trudeau	Total words	Keywords Zelenskyy	Total words
1	putin	6,596	france	2,372	canada	490	putin	3,856
2	president	4,582	putin	2,318	putin	427	president	3,296
3	trump	4,360	scholz	1,739	trump	266	ukrainian	3,162
4	price	4,182	russian	1,541	covid	261	russian	3,098
5	china	4,092	president	1,248	vaccine	246	nato	2,604
6	nato	3,608	humiliate	1,213	tucker Carlson	244	biden	1,672
7	russian	3,259	germany	1,157	catalinalauf	244	country	1,572
8	like	3,050	poland	1,121	karilake	244	donbas	1,417
9	inflation	2,905	french	1,007	kimkbaltimore	244	people	1,363
10	world	2,523	ukrainewar	948	repmtg	243	territory	1,291
11	invasion	2,515	ukrainerussiawar	891	tedcruz	243	weapon	1,273
12	american	2,409	italy	859	seanhannity	243	news	1,216
13	country	1,986	emmanuel	840	donaldjtrumpjr	241	peace	1,156
14	weapon	1,905	kiev	833	virus	225	world	1,094
15	hunter	1,850	people	800	mandate	221	attack	988
16	america	1,837	invite	791	ottawa	174	support	972
17	money	1,828	blog	789	truck	155	control	948
18	sanction	1,792	zelenskyy	783	leader	137	leader	936
19	invaded	1,705	kyiv	770	biden	134	invasion	928
20	billion	1,700	mariupol	756	trumpwarroom	122	live	909
21	people	1,693	draghi	737	would	119	military	902
22	administration	1,686	must	705	summit	109	nazi	875
23	military	1,634	want	674	look	99	time	859
24	energy	1,557	politics	667	invasion	98	west	848
25	high	1,537	humiliated	655	canadian	95	kyiv	827
26	europa	1,509	world	586	like	95	need	819
27	long	1,501	said	579	disgusting	89	like	812
28	time	1,475	ukrainian	529	western	85	europa	758
29	stop	1,469	leader	510	world	81	force	744
30	ukrainian	1,453	peace	495	russian	81	give	719

No	Keywords Erdogan	Total words	Keywords Jokowi	Total words	Keywords Putin	Total words
1	turkey	630	president	1,330	russian	7,388
2	nato	417	indonesia	879	nato	4,516
3	putin	300	peace	812	stand	3,974
4	president	234	putin	655	world	3,954
5	grain	202	visit	545	standwithukraine	3,470
6	finland	181	indonesian	436	country	2,932
7	sweden	176	food	352	biden	2,792
8	turkish	172	mission	289	ukrainian	2,742
9	syria	126	kyiv	285	invaded	2,542
10	russian	99	russian	275	people	2,381
11	recep	89	global	240	invasion	2,369
12	tayyip	89	leader	238	west	2,357
13	biden	81	crisis	225	president	2,272
14	ukrainian	78	country	225	nazi	2,250
15	world	77	moscow	222	state	2,249
16	export	74	zelensky	199	stop	2,103
17	deal	72	meeting	184	like	2,044
18	need	68	world	165	think	1,985
19	summit	66	talk	161	germany	1,951

(continued)

Table 4. Continued

No	Keywords Erdogan	Total words	Keywords Jokowi	Total words	Keywords Putin	Total words
20	greece	66	please	153	land	1,865
21	europa	64	export	151	military	1,824
22	country	63	meet	148	support	1,794
23	invasion	63	ukrainian	136	weapon	1,786
24	talk	61	summit	133	sanction	1,644
25	leader	60	help	122	europa	1,639
26	want	58	first	107	news	1,626
27	ankara	57	germany	107	trump	1,601
28	rkiye	57	wheat	106	lost	1,593
29	like	57	thank	106	war	1,432
30	peace	55	ukraina	102	take	1,426

Source(s): Table by authors, 2024

linked with anticipation; while fear-driven caution arises from a negative causal context, anticipation-driven caution involves predicting the broader impacts of the war (Binsar and Mauritsius, 2020; Morisi and Wagner, 2021). Some recurring words that indicate anticipation are “price” and “inflation”, which appear 4,182 and 2,905 times in Biden’s case.

Previous studies discovered that fear is usually related to sadness (Goel and Sharma, 2021), and this study shows the same result. The percentage of sadness was around 10–12% in conversations on the state leaders, but it was lower in the case of Jokowi and Erdogan (5% and 8% each). The words that frequently appeared to represent sadness are “Ukrainian” and “people”, describing the public sadness toward the impact felt by the people of Ukraine. As for surprise, anticipation, and sadness in this study, their percentage of occurrences is less than 10% respectively. The same is the case with joy, which is only high in the case of Jokowi (about 16%).

The high percentage in the Jokowi case was proportional to the high percentage on trust (33%). Such results are not only associated with his visit, but his statement that he was ready to be a mediator between Russia and the Ukraine in the peace mission. Other leaders with a high percentage of trust are Erdogan and Macron with 24% and 21% each. Trust is represented by the word “peace” that often appeared in conversations on almost all state leaders, yet it is undeniable that this word showed up the most in conversations about these three leaders.

Discussion

Ethical leadership by a nation’s leader

As stated in the literature review, effective leadership requires a people-oriented approach, where leaders demonstrate responsibility and consideration for the public when enacting policies (Vikaraman et al., 2021). This concept of people-orientation is essential for building trust and establishing strong relationships with the public (Mozumder, 2022). Our study measured public sentiment and emotional responses to national leaders using sentiment analysis, providing insights into the public’s trust and perception of these leaders. While some leaders, such as Jokowi and Erdogan, exhibited consistently positive sentiment, it is important to note that even leaders with lower overall positive sentiment can still retain public trust. For example, Macron, despite a lower percentage of positive sentiment, receives significant public trust. This can be seen in conversations mentioning his diplomatic visit to Ukraine alongside leaders from Germany, Italy, and Romania, where public sentiment is generally favorable. Words associated with Macron, such as “Germany” and “Romania,” highlight the public’s appreciation for his leadership in international relations, demonstrating that trust can coexist

with mixed sentiments. The findings show that positive sentiment toward a leader does not always correlate directly with trust, as illustrated by Macron's case. Although some words reflecting negative sentiment, such as "humiliate," suggested a misunderstanding of his previous statements, his overall trust rating of 21% reflects a nuanced public perception. This suggests that the public acknowledged his efforts to clarify his stance and represent national interests.

Furthermore, our analysis of the public discourse surrounding leaders like Trudeau highlights how perceptions of political responsiveness—especially regarding issues such as the Russia-Ukraine conflict—can influence public trust. In the case of Canada, some Twitter discussions criticized Trudeau's handling of the conflict, with some accusing the Canadian government of lacking assertiveness. This reflects how global issues can impact domestic perceptions of leadership, further demonstrating the complex relationship between sentiment and trust. By incorporating sentiment analysis into the evaluation of leadership qualities, this study provides valuable insights into how public trust is shaped not only by the leaders' actions but also by the emotions and sentiments expressed by the public in response to those actions.

Moreover, Biden and Zelenskyy, the two state leaders most frequently discussed in this study, have managed to retain public trust amid the ongoing conflict. Biden articulated a firm position on the war, characterizing the invasion of Ukraine as a crime and asserting that those responsible for the decision should resign. This statement attracted considerable positive attention from the public on Twitter, as indicated by a trust percentage of 18%, which ranks second among the emotions associated with Biden. However, fear has emerged in response to inflation and the potential for a prolonged crisis, resulting in a heightened level of negative sentiment toward Biden. Additionally, Biden's stance on the invasion has fostered fear among the public, as evidenced by his most liked tweet (see [Table 3](#)), which encapsulates this emotion.

In the case of Zelenskyy, prolonged fear resulted in a high negative sentiment, whereby many conversations expressed public demand to stop provoking Russia about cooperation with European countries or the United States, and the demand to immediately start peace negotiations. Then, in the case of Putin, it was undeniable that public trust is proven to be quite low (16%)—the lowest percentage compared with other leaders. "Putin" was always one of the top 5 words that appeared in conversations on each state leader, but there is negative statement in each instance. This happened as result of his policy or decision that led to losses for many countries, including, of course, the Ukraine. The invasion also brought about other effects, such as global inflation, so Putin received high negative sentiment and trust.

Trustworthy leader in a time of crisis

Previous literature has developed the concept of trustworthy governance to show how political leaders earn trust, both globally and on a national scale ([Kawtrakul et al., 2021](#); [Tangcharoensathien et al., 2020](#)). The concept is presented as the measurement of trust in governance and especially the leader ([Carnevale, 1995](#)). Fundamentally, this concept has measurements that are similar to the concept of ethical leadership. However, there is one aspect that must be considered but has not been used by the concept of ethical leadership before, which is where the communication pattern is to achieve "shared vision". One persistent theme in studies of leadership is the importance of shared vision, where the leaders who cannot communicate their vision clearly have trouble with trust ([Carnevale, 1995](#)).

This study also found out one aspect that should be taken into consideration in order to win trust, which is the communication pattern of leaders to the public, especially to share their vision in times of crisis. The increase of negative sentiment was undeniably the result of mistakes in communication patterns of the leaders, such as in the case of Macron who received a negative sentiment for his statement related to the conflict happening. Past studies showed

that a person's communication pattern during a crisis could change due to panic and the impact of the crisis itself (Titko *et al.*, 2021). In fact, it also happened in the case of the leaders in this study, whereby inadequate and less transparent communication patterns contributed to the increase of negative sentiments and decrease of public trust toward the leaders. Most of the leaders in this study had demonstrated some commendable behaviors. However, the information and poor communication pattern of a leader might cause misperception and decrease public trust in the leader. Thus, in order to become a trustworthy leader during a crisis, communication strategies are necessary.

Shared vision is essential not only for fostering trust, but also for enabling leaders to guide their communities through periods of uncertainty. In times of crisis, when emotions are high and public anxiety is prevalent, a leader's ability to articulate a clear, cohesive, and shared vision becomes even more crucial. This vision provides the public with a sense of direction and purpose, helping them to understand the leader's intentions and the broader goals that are being pursued. Without this shared understanding, leaders risk creating confusion, misunderstanding, and ultimately, distrust. Research suggests that when leaders fail to effectively communicate a unified vision, the lack of alignment between their words and actions can erode the credibility and confidence of the public (Titko *et al.*, 2021). A shared vision, therefore, is not just about outlining future plans but about engaging the public in the process, allowing them to feel that they are part of a collective effort. This connection not only strengthens public trust, but also reinforces the leader's legitimacy and their ability to lead effectively during a crisis.

Lack of information and poor communication patterns were the problems found in this study. Leaders must have the ability to show their publics the intent of their goals in order to provide a sense of calm and trust (Carnevale, 1995). The leader's communication strategy then becomes a very important aspect to support the successful delivery of this vision. As previously discussed, Macron and Trudeau (or other leaders) actually had a good vision to anticipate the impacts of the conflict, but their public's response to this is partly negative due to poor communication patterns.

Conclusion

A country's political leader plays a pivotal role in times of crisis, as their policies and behaviors elicit varied public reactions. The results of this study reveal that each state leader generated different public sentiments depending on their responses to the ongoing crisis. In this context, most state leaders received more negative sentiments in public conversations on social media, with only two leaders viewed more positively. The prevalence of negative sentiments likely stems from public fear and anger during the crisis, demonstrating that a leader's attitudes significantly affect public emotions. The study also observed that leaders' communication patterns and strategies during a crisis notably influence public trust in national leadership. Poor communication patterns and strategies were found to exacerbate public fear or anger.

The inability of some leaders to communicate their vision clearly further eroded trust. This highlights the need for strategic communication and transparent leadership in crisis management, providing practical applications for leaders aiming to build or maintain public trust. Future research should examine these communication strategies more deeply to establish frameworks that leaders can adopt for effective crisis communication. However, this study has limitations, including language barriers. Since data was collected in English, conversations in other languages (e.g. Indonesian, French, and Turkish) were not fully analyzed. Future studies could address this by including data in the native languages of each country, providing a broader, more nuanced understanding of public opinion across diverse cultural contexts. Expanding research on public opinion in countries like Indonesia or Turkey, using native languages, would further validate and enrich the findings presented here.

References

- Aljameel, S.S., Alabbad, D.A., Alzahrani, N.A., Alqarni, S.M., Alamoudi, F.A., Babili, L.M., Aljaafary, S.K. and Alshamrani, F.M. (2021), "A sentiment analysis approach to predict an individual's awareness of the precautionary procedures to prevent COVID-19 outbreaks in Saudi Arabia", *International Journal of Environmental Research and Public Health*, Vol. 18 No. 1, pp. 1-12, doi: [10.3390/ijerph18010218](https://doi.org/10.3390/ijerph18010218).
- Alwakid, G., Osman, T., Haj, M.E., Alanazi, S., Humayun, M. and Sama, N.U. (2022), "MULDASA: multifactor lexical sentiment analysis of social-media content in nonstandard Arabic social media", *Applied Sciences (Switzerland)*, Vol. 12 No. 8, 3806, doi: [10.3390/app12083806](https://doi.org/10.3390/app12083806).
- Beauregard, P. (2022), "International emotional resonance: explaining transatlantic economic sanctions against Russia", *Cooperation and Conflict*, Vol. 57 No. 1, pp. 25-42, doi: [10.1177/00108367211027609](https://doi.org/10.1177/00108367211027609).
- Binagwaho, A., Frisch, M.F., Ntawukuriryayo, J.T. and Hirschhorn, L.R. (2020), "Changing the COVID-19 narrative in Africa: using an implementation research lens to understand successes and plan for challenges ahead", *Annals of Global Health*, Vol. 86 No. 1, pp. 1-5, doi: [10.5334/AOGH.3001](https://doi.org/10.5334/AOGH.3001).
- Binsar, F. and Mauritsius, T. (2020), "Mining of social media on COVID-19 big data infodemic in Indonesia", *Journal of Computer Science*, Vol. 16 No. 11, pp. 1598-1609, doi: [10.3844/JCSSP.2020.1598.1609](https://doi.org/10.3844/JCSSP.2020.1598.1609).
- Budi, A. and Pamungkas, W.A. (2020), "Partisanship in crisis: public response to COVID-19 pandemic in Indonesia", *Jurnal Ilmu Sosial Dan Ilmu Politik*, Vol. 24 No. 1, pp. 15-32, doi: [10.22146/jsp.52770](https://doi.org/10.22146/jsp.52770).
- Carnevale, D.G. (1995), *Trustworthy Government: Leadership and Management Strategies for Building Trust and High Performance*, 1st ed., Jossey-Bass, San Fransisco.
- Chapkovski, P. and Schaub, M. (2022), "Solid support or secret dissent? A list experiment on preference falsification during the Russian war against Ukraine", *Research and Politics*, Vol. 9 No. 2, doi: [10.1177/20531680221108328](https://doi.org/10.1177/20531680221108328).
- Cortellazzo, L., Bruni, E. and Zampieri, R. (2019), "The role of leadership in a digitalized world: a review", *Frontiers in Psychology*, Vol. 10 August, 1938, doi: [10.3389/FPSYG.2019.01938/BIBTEX](https://doi.org/10.3389/FPSYG.2019.01938/BIBTEX).
- Fauzi, F.Z. and Kusumasari, B. (2020), "Public-private partnership in Western and non-western countries: a search for relevance", *Journal of Financial Management of Property and Construction*, Vol. 26 No. 1, pp. 87-102, doi: [10.1108/JFMPC-08-2019-0071](https://doi.org/10.1108/JFMPC-08-2019-0071).
- Goel, R. and Sharma, R. (2021), "Studying leaders and their concerns using online social media during the times of crisis – a COVID case study", *Social Network Analysis and Mining*, Vol. 11 No. 1, pp. 1-12, doi: [10.1007/s13278-021-00756-w](https://doi.org/10.1007/s13278-021-00756-w).
- Hameleers, M., Schulz, A., Wirz, D.S., Bos, L., Corbu, N., Andreadis, I. and Andreadis, I. (2021), "The effects of populist identity framing on populist attitudes across Europe: evidence from a 15 -country comparative experiment", *International Journal of Public Opinion Research*, Vol. 33 No. 3, pp. 491-510, doi: [10.1093/ijpor/edaa018](https://doi.org/10.1093/ijpor/edaa018).
- Huang, Y., Lou, X., Wang, C. and Chen, Z. (2022), "Incentive mechanism design in collaborative management of public health emergencies", *Sustainability (Switzerland)*, Vol. 14 No. 12, 7155, doi: [10.3390/su14127155](https://doi.org/10.3390/su14127155).
- Kawtrakul, A., Chanlekha, H., Waiyamai, K., Kangkachit, T., D'Orazio, L., Kotzinos, D., Laurent, D. and Spyratos, N. (Eds) (2021), "Towards data-and-innovation driven sustainable and productive agriculture: BIO-AGRI-WATCH as a use case study", *Institute of Electrical and Electronics Engineers*, pp. 3407-3415, doi: [10.1109/BigData52589.2021.9671520](https://doi.org/10.1109/BigData52589.2021.9671520).
- Kothari, A., Foisey, L., Donelle, L. and Bauer, M. (2021), "How do Canadian public health agencies respond to the COVID-19 emergency using social media: a protocol for a case study using content and sentiment analysis", *BMJ Open*, Vol. 11 No. 4, e041818, doi: [10.1136/bmjopen-2020-041818](https://doi.org/10.1136/bmjopen-2020-041818).

- Kusumasari, B., Munajat, M.E. and Fauzi, F.Z. (2023), "Measuring global pandemic governance: how countries respond to COVID-19", *Journal of Management and Governance*, Vol. 27 No. 2, pp. 603-629, doi: [10.1007/s10997-022-09647-4](https://doi.org/10.1007/s10997-022-09647-4).
- Markus, S. (2022), "Long-term business implications of Russia's war in Ukraine", *Asian Business and Management*, Vol. 21 No. 4, pp. 483-487, doi: [10.1057/s41291-022-00181-7](https://doi.org/10.1057/s41291-022-00181-7).
- Matsuoka, Y. and Gonzales Rocha, E. (2021), "The role of non-government stakeholders in implementing the Sendai Framework: a view from the voluntary commitments online platform", *Progress in Disaster Science*, Vol. 9, 100142, doi: [10.1016/j.pdisas.2021.100142](https://doi.org/10.1016/j.pdisas.2021.100142).
- Moon, K.-K. and Christensen, R.K. (2021), "Moderating diversity, collective commitment, and discrimination: the role of ethical leaders in the public sector", *Journal of Public Administration Research and Theory*, Vol. 32 No. 2, pp. 1-18, doi: [10.1093/jopart/nuab035](https://doi.org/10.1093/jopart/nuab035).
- Morisi, D. and Wagner, M. (2021), "Bringing people closer to the elites: the effect of information on populist attitudes", *International Journal of Public Opinion Research*, Vol. 33 No. 3, pp. 664-677, doi: [10.1093/ijpor/edaa033](https://doi.org/10.1093/ijpor/edaa033).
- Mozumder, N.A. (2022), "Can ethical political leadership restore public trust in political leaders?", *Public Organization Review*, Vol. 22 No. 3, pp. 821-835, doi: [10.1007/s11115-021-00536-2](https://doi.org/10.1007/s11115-021-00536-2).
- Nisbet, E.C. and Kamenchuk, O. (2021), "Russian news media, digital media, informational learned helplessness, and belief in COVID-19 misinformation", *International Journal of Public Opinion Research*, Vol. 33 No. 3, pp. 571-590, doi: [10.1093/ijpor/edab011](https://doi.org/10.1093/ijpor/edab011).
- Peck, M., Tapilatu, R.F., Kurniati, E. and Rosado, C. (2021), "Rapid coral reef assessment using 3D modelling and acoustics: acoustic indices correlate to fish abundance, diversity and environmental indicators in West Papua, Indonesia", *PeerJ*, Vol. 9, e10761, doi: [10.7717/peerj.10761](https://doi.org/10.7717/peerj.10761).
- Pérez-Dasilva, J.Á., Meso-Ayerdi, K. and Mendiguren-Galdospín, T. (2020), "Fake news and coronavirus: detecting key players and trends through analysis of Twitter conversations", *Profesional de La Informacion*, Vol. 29 No. 3, pp. 1-22, doi: [10.3145/epi.2020.may.08](https://doi.org/10.3145/epi.2020.may.08).
- Perlstein, S.G. and Verboord, M. (2021), "Lockdowns, lethality, and laissez-faire politics. Public discourses on political authorities in high-trust countries during the COVID-19 pandemic", *PLoS One*, Vol. 16 No. 6, e0253175, doi: [10.1371/journal.pone.0253175](https://doi.org/10.1371/journal.pone.0253175).
- Plutchik, R. (2003), *Emotions and Life: Perspectives from Psychology, Biology, and Evolution*, American Psychological Association, Washington, DC.
- Raj, H.W. and Balachandran, S. (2020), "Future emoji entry prediction using neural networks", *Journal of Computer Science*, Vol. 16 No. 2, pp. 150-157, doi: [10.3844/JCSSP.2020.150.157](https://doi.org/10.3844/JCSSP.2020.150.157).
- Rasyid, S.B.A., Nurmandi, A., Suswanta, Mutiarin, D. and Salahudin (2021), "Public communication of local government leaders: a case study of three major governors in Indonesia", *Advances in Intelligent Systems and Computing*, Vol. 1352, pp. 487-497, doi: [10.1007/978-3-030-71782-7_43](https://doi.org/10.1007/978-3-030-71782-7_43).
- Smith, C. (2021), "From colonial forestry to 'community-based fire management': the political ecology of fire in Belize's coastal savannas, 1920 to present", *Journal of Political Ecology*, Vol. 28 No. 1, pp. 577-606, doi: [10.2458/JPE.2989](https://doi.org/10.2458/JPE.2989).
- Stravinskiene, J., Hopeniene, R. and Levickyte, I. (2020), "Impact of CEO image on the consumer trust in the organization", *Engineering Economics*, Vol. 31 No. 2, pp. 243-253, doi: [10.5755/j01.ee.31.2.24208](https://doi.org/10.5755/j01.ee.31.2.24208).
- Tangcharoensathien, V., Calleja, N., Nguyen, T., Purnat, T., D'Agostino, M., Garcia-Saiso, S., Landry, M., Rashidian, A., Hamilton, C., AbdAllah, A., Ghiga, I., Hill, A., Hougendobler, D., van Andel, J., Nunn, M., Brooks, I., Sacco, P.L., de Domenico, M., Mai, P., Gruzd, A., Alaphilippe, A. and Briand, S. (2020), "Framework for managing the COVID-19 infodemic: methods and results of an online, crowdsourced who technical consultation", *Journal of Medical Internet Research*, Vol. 22 No. 6, e19659, doi: [10.2196/19659](https://doi.org/10.2196/19659).
- Titko, M., Ristvej, J. and Zamiar, Z. (2021), "Population preparedness for disasters and extreme weather events as a predictor of building a resilient society: the Slovak Republic", *International*

- Tsaniya, H., Rosadi, R. and Abdullah, A.S. (2021), "Sentiment analysis towards Jokowi's government using twitter data with convolutional neural network method", *Journal of Physics: Conference Series*, Vol. 1722 No. 1, 012017, doi: [10.1088/1742-6596/1722/1/012017](https://doi.org/10.1088/1742-6596/1722/1/012017).
- Tully, M.P., Bernsten, C., Aitken, M. and Vass, C. (2020), "Public preferences regarding data linkage for research: a discrete choice experiment comparing Scotland and Sweden", *BMC Medical Informatics and Decision Making*, Vol. 20 No. 1, 109, doi: [10.1186/s12911-020-01139-5](https://doi.org/10.1186/s12911-020-01139-5).
- Vikaraman, S.S., Mansor, A.N., Nor, M.Y.M., Alias, B.S. and Gurusamy, V. (2021), "Ethical leadership practices and trust among public school leaders in Malaysia", *Asian Journal of University Education*, Vol. 17 No. 3, pp. 174-191, doi: [10.24191/ajue.v17i3.14509](https://doi.org/10.24191/ajue.v17i3.14509).
- Wheeler, M.A., Bednall, T., Demsar, V. and Wilson, S.G. (2022), "Falling apart and coming together: how public perceptions of leadership change in response to natural disasters vs health crises", *Sustainability (Switzerland)*, Vol. 14 No. 2, p. 837, doi: [10.3390/su14020837](https://doi.org/10.3390/su14020837).
- Woiceshyn, J., Huq, J.L., Kannappan, S., Fabreau, G., Minty, E., Pendharkar, S. and Bharwani, A. (2022), "We need to work differently in a crisis: peer-professional leadership to redesign physicians' work", *BMJ Leader*, Vol. 6 No. 2, pp. 98-103, doi: [10.1136/leader-2021-000490](https://doi.org/10.1136/leader-2021-000490).
- Yuda, T.K. and Fauzi, F.Z. (2024), "Comparing public support for two Indonesian employment policy reforms in a time of COVID-19: sentiment and emotion analysis of tweets", in Hamdan, M., Anshari, M., Ahmad, N. and Ali, E. (Eds), *Global Trends in Governance and Policy Paradigms*, IGI Global Scientific Publishing, pp. 63-83, doi: [10.4018/979-8-3693-1742-6.ch004](https://doi.org/10.4018/979-8-3693-1742-6.ch004).
- Zhao, S. (2020), "Rhetoric and reality of China's global leadership in the context of COVID-19: implications for the US-led world order and liberal globalization", *Journal of Contemporary China*, Vol. 30 No. 128, pp. 1-16, doi: [10.1080/10670564.2020.1790900](https://doi.org/10.1080/10670564.2020.1790900).
- Zhou, L., Ampon-Wireko, S., Xu, X., Quansah, P.E. and Larnyo, E. (2022), "Media attention and vaccine hesitancy: examining the mediating effects of fear of COVID-19 and the moderating role of trust in leadership", *PLoS One*, February, Vol. 17 No. 2, pp. 1-16, doi: [10.1371/journal.pone.0263610](https://doi.org/10.1371/journal.pone.0263610).
- Zhu, Y.P. and Park, H.W. (2021), "Development of a COVID-19 web information transmission structure based on a quadruple helix model: webometric network approach using Bing", *Journal of Medical Internet Research*, Vol. 23 No. 8, e27681, doi: [10.2196/27681](https://doi.org/10.2196/27681).

Further reading

- Hartley, K. and Jarvis, D.S.L. (2020), "Policymaking in a low-trust state: legitimacy, state capacity, and responses to COVID-19 in Hong Kong", *Policy and Society*, Vol. 39 No. 3, pp. 403-423, doi: [10.1080/14494035.2020.1783791](https://doi.org/10.1080/14494035.2020.1783791).
- Khurshid, M.M., Zakaria, N.H., Rashid, A., Ahmad, M.N., Arfeen, M.I. and Shehzad, H.M.F. (2020), "Modeling of open government data for public sector organizations using the potential theories and determinants-a systematic review", *Informatics*, Vol. 7 No. 3, 24, doi: [10.3390/INFORMATICS7030024](https://doi.org/10.3390/INFORMATICS7030024).

Corresponding author

Andi Pitono can be contacted at: andipitono@ipdn.ac.id