Distrust in governmental institutions: A comparative analysis of user-generated Twitter posts on climate change and COVID-19

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Abstract

Purpose

The current global landscape is marked by two challenges: climate change and COVID-19. Effective crisis management by the government is crucial in addressing these crises, but its efficacy can be hindered by public distrust. The objective of this research is to investigate the elements that impact people's trust in the government as expressed on social media, to enhance comprehension regarding how public trust can be fostered and strengthened amidst the challenges of climate change and COVID-19.

Method

To explore the topic, a content analysis was conducted to examine user-generated content on Twitter. 800 tweets discussing the government (400 each on climate change and COVID-19) were collected and analyzed. The analysis involved both quantitative measures, such as frequency of codes, and qualitative examination of the specific content addressed in the tweets.

Results

The findings show that German Twitter users express concerns and expect government action on climate change and COVID-19, however, prevalent negative sentiments and dissatisfaction reveal a lack of trust in the government's actions. Differences in attention, emotional tones, and diverse opinions highlight the complexity of public sentiment. Likes and retweets partially represent prevalent opinions, but exceptions indicate fluctuating views.

Conclusions

The findings emphasize the need to understand trust dynamics, emotional factors, and the impact of social media during crises. To address these issues, it is crucial for governments to prioritize transparency, improve crisis management strategies, and for social media to encourage responsible content moderation.

Keywords: social media, Twitter, content analysis, trust in government, crisis, climate change, COVID-19

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Chapter one: Introduction

Distrust in governmental institutions has emerged as a prevalent phenomenon with significant implications for social and political dynamics. When people lack confidence in the policies, information, or actions of the government, it can hinder their adherence to public health guidelines, preventive measures, and environmental initiatives (Perry, 2021; OECD, 2022). This not only affects individual well-being but also has broader implications for public health and the future of our planet. Therefore, this bachelor thesis aims to explore how distrust in German governmental institutions is expressed in user-generated posts on Twitter, a widely used social media platform. The focus of the study revolves around two prominent topics that have garnered substantial attention in recent years: climate change and COVID-19. These crises are characterized by their complexity, scientific uncertainties, and controversies, which demand effective governmental responses and public cooperation. However, they also face challenges such as misinformation, polarization, and skepticism, which erode trust in governmental institutions and their policies. Conducting research on this topic can offer valuable insights into the concerns expressed by Twitter users regarding the governmental response to crises, as well as the specific themes and attitudes prevalent among them. Having this awareness can assist the government in formulating effective strategies to address these perceived shortcomings. Moreover, social media users can use this knowledge to evaluate information on the platforms more critically.

To investigate this topic, a content analysis was conducted on user-generated tweets mentioning climate change and COVID-19. A sample of German tweets from April 7, 2023, to April 25, 2023, was analyzed using a coding scheme to identify indicators of trust and distrust in governmental institutions. The study examined assessments of government competence, benevolence, integrity, and transparency, as well as arguments and emotional tones used to express or justify trust or distrust. This analysis provides insights into expressions of trust and distrust toward

the government's handling of climate change and COVID-19. Additionally, data on the quantity of likes and retweets received by the tweets were gathered, to explore whether the popular tweets' content reflects the most expressed attitude.

This study contributes to the literature on distrust in governmental institutions by providing empirical evidence from a large-scale and timely dataset of user-generated posts on Twitter. The main research question is "How do German Twitter users express trust or distrust in governmental institutions regarding their responses to climate change and COVID-19 in their online discourse?". Additionally, the study proposes two sub-questions, which are: "How do the expressions of trust or distrust in the government in German Twitter discussions differ between climate change and COVID-19?", and "Do the likes and retweets on Twitter posts about COVID-19 and climate change serve as proxies for the Twitter users' prevalent opinion on the topic?". By addressing these research questions, this study aims to reveal the underlying causes and manifestations of distrust in governmental institutions in the context of two major global crises.

Chapter two: Theoretical framework

The following sections aim to establish a theoretical framework by exploring three key topics: Firstly, it examines factors contributing to trust and distrust in governmental institutions and their detection in content analysis. This informs the development of the study's codebook, explaining the aspects influencing trust or distrust and their manifestation in data. The second topic clarifies the importance of Twitter and its relationship to the research focus, and the third topic provides an overview of online discourse on climate change and COVID-19. Finally, the implications and inspiration from the theoretical framework's results are discussed.

2.1. Codebook framework: Factors contributing to trust and distrust in the government

Below, the framework used in this study's codebook will be established, which aims to identify trust or distrust in tweets. First, the concepts of trust and distrust will be defined to ensure clarity. Then, the attributes contributing to trustworthiness will be explored and the influence of emotions on trust levels examined, specifically within the context of governmental institutions as the trusted entity. Finally, it will be discussed how these factors can be identified and measured through content analysis.

2.1.1 Definition of trust

Trust has been examined and defined by multiple scholars from diverse viewpoints. According to Mayer et al. (1995, p. 712), trust is "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party." This definition emphasizes the trustor's readiness to place themselves in a position of weakness, believing that the other party will act in their best interest. Trust inherently involves vulnerability and the absence of direct control.

Similarly, Moorman et al. (1992, p. 82) define trust as "a willingness to rely on an exchange partner in whom one has confidence." This definition highlights the dependence and certainty placed in the trade partner. Trust is seen as a crucial component for developing and maintaining successful

exchange relationships. It entails relying on and having faith in the abilities and honesty of the other party, contributing to strong and lasting connections in business or trade.

Harrison McKnight and Chervany (2001) contribute to the understanding of trust by emphasizing its distinct but interconnected nature, which can be analyzed across multiple levels of analysis. They also introduce the concept of institution-based trust or distrust, which involves the belief that certain structures or norms either facilitate or hinder positive outcomes. This broader perspective recognizes the influence of societal and institutional factors on trust development and maintenance.

Based on the discussed sources, it becomes clear that trust is a complex concept with various essential components. Trust involves one person (the trustor) placing themselves in a position of dependence on another party (the trustee). The trustor chooses vulnerability because they have confidence that the trustee will refrain from causing harm. Trust can exist in personal relationships between individuals and extend to larger contexts like institutions or society, where trustors rely on organizations or similar entities as trustees.

In the context of this study, the institutional context of trust pertains to the governmental institution. Since the study aims to explore the expression of trust and distrust in the government, trust can be understood as the conviction that specific government structures will act in a beneficial manner to individuals. This includes several expected attributes of trustees, which will be discussed in detail in the next section, as well as the reliance placed on the government as an exchange partner. Thus, within the scope of this research, trust can be defined as individuals' willingness to expose themselves to the government's actions, driven by their belief in the government as a reliable institution and their expectation that it will act in a trustworthy and dependable manner.

2.1.2 Definition of distrust

The existing literature extensively discusses the definition of distrust and the relationship between trust and distrust. Scholars argue that trust and distrust are not separate entities but rather opposite ends of a single construct, forming a continuous continuum (Bigley & Pearce, 1998; Capiola

et al., 2022). This perspective suggests that a complete absence of trust is equivalent to complete distrust (Schoorman et al., 2007). Multiple research studies consistently demonstrate a clear connection between high trust and decrease in distrust levels. These findings imply that trust and distrust are not conflicting entities, but rather exist along a continuous spectrum. Trust is situated at one end of the spectrum, while the complete absence of trust resides at the opposite end (Mayer et al., 1995; Schoorman et al., 2007).

Nevertheless, certain studies have uncovered instances where individuals concurrently experience both trust and distrust towards a particular individual. This suggests that trust and distrust can coexist in specific circumstances. Scholars argue that while trust and distrust share a continuum, their distinct characteristics allow for their simultaneous presence (Lewicki et al., 1998; Colquitt et al., 2011).

Considering the continuous nature of the trust-distrust continuum and the overlapping factors that contribute to both constructs, it becomes evident that a comprehensive understanding of trust can encompass distrust without requiring a distinct definition. By leveraging the factors underlying trust and applying them in the opposite direction, the components of distrust can be captured. In summary, the literature suggests that trust and distrust are not isolated phenomena but rather different ends of a single dimension. While they can co-occur, their distinct attributes allow for different perceptions and interpretations, enabling their simultaneous existence. Therefore, in this study, distrust will be defined as the opposite of trust.

2.1.3 Attributes of trustees

The “attributes of trustees” refer to specific characteristics that enhance the likelihood of being trusted, whether in individuals, institutions, or groups. Within the literature, trust is measured across various dimensions, including integrity and benevolence (Holmes, 1991). Gefen et al. (2003) expanded on these dimensions, adding ability and predictability as key trust characteristics. Integrity represents moral and ethical principles, reflecting honesty and sincerity, while benevolence signifies

kindness, goodwill, and genuine concern for others' well-being. Ability relates to possessing the necessary skills and competence, and predictability entails consistency and reliability. These characteristics have gained substantial support in research, with various studies adopting them as measurement criteria (Cheng & Chen, 2020; Mayer et al., 1995; Colquitt et al., 2007; Reimann et al., 2022). More recently, predictability has often been referred to as reliability (Zhang et al., 2022; Zhang et al., 2023). Additionally, transparency has emerged as an important characteristic (Baxter et al., 2019; Chauhan & Hughes, 2020; Epstein et al., 2020; Flintham et al., 2018; Heuer & Breiter, 2019; Wang & Mark, 2013). Transparency involves openness, accountability, and accessible information that can be easily understood by others, fostering collaboration and participation (Al-Omoush et al., 2023; Mabić & Gašpar, 2018).

In the context of the government as the trustee, these five characteristics can be described as follows:

1. Ability: The government's competence and expertise in efficiently managing the country's affairs.
2. Benevolence: The government's dedication to serving the citizens' best interests.
3. Integrity: The government's adherence to ethical and moral standards that align with the population's values.
4. Reliability: The government's consistent and dependable performance in fulfilling its obligations and commitments.
5. Transparency: The government's openness and honesty about its practices and decisions, including open data practices (Jamal & Shanab, 2016) that contribute to building trust in governmental institutions.

Conversely, the five characteristics that influence distrust in the government are:

1. Inability: The government's incompetence and lack of expertise in effectively managing the country's affairs.

2. Malevolence: The government's intentions or actions that are harmful or self-serving rather than focused on the citizens' best interests.
3. Lack of integrity: The government's disregard for ethical and moral principles that are important to the citizens.
4. Unreliability: The government's inconsistent and unreliable performance in fulfilling its obligations and commitments.
5. Lack of transparency: The government's lack of openness and honesty about its practices and decisions, leading to increased skepticism and distrust (van Prooijen et al., 2022; Lehtonen et al., 2022; Cheng & Chen, 2020; Mari et al., 2021).

In conclusion, the key attributes for governmental institutions to be trusted can be summarized as the ability, benevolence, integrity, reliability, and transparency demonstrated by the government. Conversely, the determinants of distrust are the inability, malevolence, lack of integrity, unreliability, and lack of transparency.

2.1.4 Emotions as a factor influencing trust

The dynamics of trust and distrust are significantly influenced by emotions. By examining the impact of various emotions on positive and negative relations, valuable insights can be gained regarding the complexities of trust and distrust. Research indicates that emotions, such as happiness, anger, and other emotional states, serve as strong indicators of trust and distrust (Beigi et al., 2016). Positive emotions, including happiness, gratitude, and satisfaction, foster positive relations and contribute to the establishment of trust (Bodenhausen et al., 1994; Dunn & Schweitzer, 2005; Myers & Tingley, 2016; Schwarz, 2010). These emotions create an environment beneficial to building relationships based on understanding and cooperation. On the contrary, adverse emotions like anger, sadness, and fear are linked to unfavorable interactions and contribute to the emergence of distrust. These emotions often stem from feelings of betrayal, unmet expectations, or perceived threats, leading to an erosion of trust. Furthermore, emotions have been observed to influence interaction goals in negotiation contexts through the lens of trust and distrust (Liu & Wang, 2010).

For instance, anger may arise when one person perceives their interests to be undermined, leading to a breakdown in trust and hindering effective communication. Conversely, compassion can foster trust and cooperation by promoting empathy and understanding in discourse.

In conclusion, emotions play a crucial role in the development and manifestation of trust and distrust in interpersonal and person-institution relationships. Integrating emotional information into trust and distrust determination can provide valuable insights into understanding human behavior. By recognizing the influence of different emotions, both positive and negative, the understanding of trust and distrust dynamics can be improved and strategies for managing relationships effectively can be enhanced.

2.1.5 Determining trust and distrust in content analysis

Content analysis enables researchers to identify specific themes, concepts, or patterns in data, including those related to trust and distrust. Researchers have employed content analysis to locate passages or constructs associated with trust, as demonstrated in studies by Gallivan and Depledge (2003) and Thielsch et al. (2018).

It is crucial to recognize that indications of trust and distrust can manifest at different levels of abstraction: latent and manifest. Manifest content refers to the explicit and surface-level aspects of the text, while latent content delves into the underlying meaning and implicit messages (Cho & Lee, 2014; Elo & Kyngäs, 2008; Graneheim & Lundman, 2004; Krippendorff, 2019). Manifest content analysis involves coding and analyzing the observable components of the text, focusing on what is explicitly stated to identify patterns and themes (Silén et al., 2022; Bengtsson, 2016). On the other hand, latent content analysis goes beyond surface-level content, aiming to uncover implied meanings and hidden themes (Graneheim & Lundman, 2004; Elo & Kyngäs, 2008). It involves interpreting implicit aspects and identifying deeper layers of meaning (Graneheim & Lundman, 2004). Both manifest and latent content analysis are used in qualitative content analysis to gain a comprehensive understanding. By considering both implicit and explicit determinants of trust and distrust,

researchers can capture the full range of meanings and messages conveyed in the text (Krippendorff, 2019).

In summary, manifest content analysis focuses on explicit elements, while latent content analysis explores implicit meanings. Both approaches are essential in content analysis to gain a deeper understanding. In this study, the factors influencing trust or distrust in a governmental institution can serve as indications of trust or distrust in textual or visual data. References to the positive or negative characteristics attributed to trustees or expressions of emotions can provide insight into trust or distrust. These references and expressions may be explicit or implicit.

2.2 Relationship between Twitter users and the government

The relationship between Twitter users and the government is multifaceted and varies depending on the context and country. Extensive research has been conducted on this topic, including studies that analyze data gathered from social media accounts and interviews conducted with public servants and individuals who engage with government social media (Gintova, 2018). Understanding the nuances of this relationship is crucial for comprehending the dynamics of trust and distrust in online discourse surrounding governmental institutions.

Twitter can be used by the government to communicate with citizens. Many governments have adopted the platform as a means of communication (Haro-de-Rosario et al., 2016; Wigand, 2010), making it a major source of data for analyzing government-citizen interactions (Hubert et al., 2020; Gintova, 2018). Twitter's interactive nature facilitates immediate and reciprocal communication between users, enabling governments to establish virtual communities and empower citizens to engage actively in administrative processes and decision-making (Grant et al., 2010). Governments utilize Twitter as a platform to share information, provide timely updates, issue emergency alerts, connect with the public, listen to citizen feedback, cultivate relationships, and offer access to various services (Surya et al., 2021). Utilizing Twitter enables governments to reach a broad and diverse audience rapidly and simultaneously (Goodness et al., 2022). Twitter not only

facilitates citizen-government interaction and expression of opinions (Haro-de-Rosario et al., 2016) but also enables holding governments accountable through public opinion (Goodness et al., 2022). Furthermore, it has sparked the emergence of new avenues for online engagement, such as expressing political opinions on social media platforms, participating in discussions on online forums, and publishing personal content on various subjects (Bennett, 2012; Dayican, 2014; Rojas, 2010).

However, the relationship between social media platforms like Twitter and the government is not without challenges. The government's traditional leadership role in crisis communication and disaster management may not be clearly apparent on Twitter, since crisis communication on the platform frequently relies on peer-to-peer interaction and information generated by people (Cho et al., 2013). Thus, Twitter users, rather than government entities, often take the lead in sharing information and coordinating responses during times of crisis.

Twitter and other social media platforms can also be spaces for populist discourses and the spread of misinformation (Catalano & Wang, 2021), meaning that these platforms can become breeding grounds for the dissemination of misleading information and narratives that appeal to popular sentiments. Moreover, the influence of social media on public attitude may shape government measures and international relations (Catalano & Wang, 2021). This indicates that the opinions and discussions that emerge on social media platforms can have a broader impact on the decisions made by governments and their interactions with other countries. Additionally, the government's presence on Twitter does not guarantee mutual trust between the government and citizens, as online relationships can be easily established and dissolved (Park et al., 2015). The fluctuant nature of online discussions adds to the issue of establishing and maintaining the citizens' trust in the government.

In conclusion, the relationship between Twitter users and the government is characterized by the government's adoption of Twitter as a communication method to engage citizens and the platform's role in facilitating citizen engagement, crisis communication, and public policymaking. Twitter provides a space for citizens to express their opinions, hold governments accountable, and

interact with government officials. However, challenges such as the spread of misinformation and the potential influence of populist discourses on government policies exist within this relationship.

2.3 Online discourse around climate change and COVID-19

The rise of social networks as platforms for public discourse has prompted research on public opinion regarding climate change and COVID-19 in the online landscape. Online discussions on these topics reflect the active engagement of individuals with diverse attitudes and beliefs. However, an interesting observation is that online discourse tends to attract more individuals skeptical of these issues.

This trend of skeptics being drawn to online climate change discourse has been consistently observed across multiple studies. Cameron et al. (2021) shed light on the discrepancy between skeptics and non-skeptics in their online engagement with climate change topics. Skeptics, driven by their doubts and reservations, are found to be more motivated to participate in these conversations and express their dissenting opinions (Koteyko et al., 2013; Sharman, 2014). This pattern is further supported by the research conducted by Jang and Hart (2015), and Matthews (2015), which consistently identify climate change skeptics as active contributors to online climate change discourse. Moreover, Arlt et al. (2017) observed that individuals with a larger concern for climate change politics actually engage less in these discussions, while those with more distrusting attitudes participate more actively. This behavior may be attributed to skeptics' motivation to challenge what they perceive as biased mainstream narratives surrounding climate change. By expressing their opinions and countering prevailing viewpoints, skeptics aim to introduce alternative perspectives into the discourse.

Turning to COVID-19, Ahadzadeh et al. (2021) uncovered a negative correlation between skepticism and the acceptance of COVID-19 conspiracy theories propagated through social media. This suggests that individuals who lack trust in the information disseminated through traditional channels often turn to social media platforms to express their doubts and engage in discussions

surrounding such theories. Therefore, social media serves as an outlet for skeptics to voice their concerns and explore alternative narratives. Additionally, Mathews et al. (2021) found that social media can foster heuristic information processing, which may hinder individuals' ability to discern and examine the factual knowledge about COVID-19 in a critical manner. This reliance on social media for information, even when it is inaccurate or unreliable, appears to be more prevalent among individuals who hold skeptical views toward COVID-19. The cognitive shortcuts facilitated by social media platforms make these skeptics more susceptible to accepting and spreading misinformation. The correlation between trust in social media and the acceptance of COVID-19 myths and conspiracies highlights the influence of personal characteristics and selective exposure to information on communication behaviors and online discourse (Hoffman et al., 2023). Skeptics of COVID-19 are more likely to place greater trust in social media platforms, which leads them to rely on these platforms as their primary source of information. They actively seek out and share content that aligns with their perspectives, creating a feedback loop that reinforces their doubts and contributes to the proliferation of COVID-19-related myths and conspiracy theories.

These dynamics are further influenced by the nature of online communication itself. Valkenburg et al. (2016) argue that individuals engage in selective exposure, actively choosing information sources that confirm their existing beliefs while avoiding contradictory viewpoints. In the context of online distrust, online communication platforms facilitate this selective exposure by allowing individuals to curate their information environment according to their preferences. Consequently, conversations and discussions occur within homogeneous groups, isolating them from diverse perspectives. The fragmentation of public discourse supports the reinforcement of existing beliefs and the formation of echo chambers (Schmid-Petri et al., 2023). Like-minded individuals gather within these echo chambers, reinforcing their skepticism and distrust. The absence of diverse viewpoints and critical engagement impedes meaningful dialogue and the exploration of alternative perspectives. Instead, skepticism and distrust flourish within these isolated communities, facilitating the persistence and spread of misinformation and conspiracy theories.

In conclusion, online discourse tends to attract skeptical individuals who express distrust towards climate change and COVID-19. Social media platforms facilitate the active engagement of skeptics, perpetuating skepticism, and the spread of misinformation. Selective exposure and fragmentation further reinforce existing beliefs, limiting diverse perspectives.

2.4 Conclusion

This theoretical framework provides a basis for investigating trust and distrust in governmental institutions regarding their response to climate change and COVID-19. It investigates the elements that influence both trust and distrust and how these factors can be identified in content analysis, laying the foundation for the codebook. The framework also examines the relationship between Twitter users and the government, and how the online discourse on climate change and COVID-19 looks like. While previous studies have focused on government-citizen communication on social media platforms, there is limited research on peer-to-peer communication about the government. Moreover, although social media users often express distrust or skepticism towards the government, there is a lack of understanding regarding the specific manifestations of this distrust. Therefore, this study aims to delve into these aspects.

Chapter three: Methods

3.1 Research design

This study utilizes a content analysis approach to examine user-generated posts on Twitter, employing both quantitative and qualitative elements. The quantitative aspect involves coding and analyzing the content systematically, while the qualitative aspect delves into the specific expressions of trust and distrust. Content analysis is a method that aims to identify themes, patterns, and meanings within data, allowing researchers to explore subjective experiences and cultural contexts (Hsieh & Shannon, 2005; Zhang & Wildemuth, 2009).

Content analysis is versatile and adaptable to various types of content and research questions. It can be applied to tweets, hashtags, images, videos, links, and emojis, with the level of abstraction and interpretation adjusted based on research goals (Elo & Kyngäs, 2008). Rigorous and transparent, it provides precise procedures for data collection and analysis, ensuring the trustworthiness and quality of findings (Graneheim & Lundman, 2004).

However, content analysis has limitations that should be acknowledged. It is time-consuming and labor-intensive, requiring extensive reading, coding, categorization, and interpretation. Researchers must be mindful of their biases and assumptions that may influence the analysis. Additionally, it may not capture the dynamic nature of online communication or fully represent the complexity of social media platforms (Zhang & Wildemuth, 2009; Hughes et al., 2015).

In summary, content analysis was chosen for this research design to enable a comprehensive and systematic analysis of tweet content, extracting themes, sentiments, opinions, and emotions. Its flexibility allows for the exploration of emerging patterns and a deeper understanding of context. This approach aligns with the research questions at hand.

3.2 Corpus

The programs used for the data collection were R and RStudio, which are open-source software for statistical computing and graphics. The tweets were collected using the “rtweet”

package, which is an R interface to the Twitter API that allows users to access and manipulate Twitter data. Since it is only possible to collect tweets ranging back a seven-day period when using the free Twitter API, tweets were collected every seven days from a time frame from April 7, 2023, to April 25, 2023. In order to achieve this, the search_tweet function from the rtweet package was employed, which can be customized to exclusively retrieve tweets of a particular language, in this instance, German, and search for tweets that contain predetermined terms. The specific search strings utilized in this study were “regierung OR koalition OR maßnahmen OR parlament OR gesetz OR politik AND klima OR CO2 OR erderwaermung” for tweets related to government and climate change, and “regierung OR koalition OR maßnahmen OR parlament OR gesetz OR politik AND corona OR covid OR pandemie” for tweets relating to government and COVID-19. The terms in the search string can be translated to English as “government OR coalition OR measures OR parliament OR law OR politics AND climate OR CO2 OR global warming” and “government OR coalition OR measures OR parliament OR law OR politics AND corona OR covid OR pandemic”, respectively.

The search strings used to look for twitter posts about government and climate change, and government and COVID-19 are based on the use of search operators. Search operators are specific words, phrases, and symbols that can be used to narrow down search results (Holland et al., 2021). The “OR”-operator enables the retrieval of tweets that contain either one or both specified search terms, whereas “AND” requires the presence of both the term preceding and following the operator to be included in the search results. The search strings also use keywords that are relevant to the topics of interest, such as government, coalition, measures, parliament, law, politics, climate, CO2, global warming, corona, covid, and pandemic. These keywords are likely to appear in tweets that discuss the issues of government actions and policies regarding climate change and COVID-19. By using these search strings, one can find tweets that match the desired criteria and filter out irrelevant or noisy tweets.

The data collection process generated two separate datasets, one on climate change and one on COVID-19. The datasets contained various pieces of information about the tweets and users, but

not all of it was pertinent to the research question. For example, the dataset included the username and the user ID, which were not relevant for the analysis. As a result, the dataset was filtered to only encompass these specific elements: the text content, likes, retweets, hashtags used, mentioned URLs, media type, and media URLs.

The elements were selected based on their relevance to the research question. Extracting themes, topics, sentiments, opinions, and emotions was made possible by analyzing the text content, which was the primary variable. To measure popularity and impact, the favorite count was relevant, while the retweet count was helpful in determining the diffusion and reach of the tweets. To identify main topics and categories, hashtags were useful. External sources and references were identified through mentioned URLs. Analyzing multimodal aspects and effects was made possible by including the media type, while the media URLs were important in accessing and viewing media content.

Filtering the dataset for these elements enabled a more manageable data collection process, facilitating a more comprehensive content analysis of Twitter posts. Afterwards, the filtered tweet datasets were stored in Excel files. This decision was made with the aim of promoting ease of analysis. Additionally, the use of Excel files enables researchers to efficiently organize and manage large data sets. In the end, this resulted in two datasets with 400 tweets on government and climate change, and 400 tweets on government and COVID-19.

3.3 Codebook

In order to analyze the collected data which serves as the corpus for the content analysis, a codebook had to be developed. The codebook was created using a mixed approach, which combined inductive and deductive processes. To elaborate, some of the codes were drawn from the existing literature on the topic of interest, while others were identified by analyzing a sample of the collected tweets.

The codebook encompasses the following information: categories, subcategories, codes, and explanations of the codes. They were categorized based on their thematic similarity and relevance to the research question. The “Emotional tones” and the “Perceived government characteristics” were largely created top-down, meaning that the codes were developed beforehand as described in the theoretical framework. “Themes” and “Justification strategies” were established in a bottom-up approach, by determining which codes occur in the corpus frequently. Table 1 briefly outlines the categories employed in the codebook, whereas the comprehensive codebook with all codes can be located in Appendix A, Table 1A.

Table 1

Categories of the codebook

Categories	Explanation	Number of codes in the category
Themes	The “Themes” category in the codebook comprises a comprehensive compilation of frequently mentioned or addressed topics within the analyzed content. It serves as a systematic framework for identifying and organizing key subject areas that emerged from the dataset.	9
Emotional tones	The “Emotional tones” category in the codebook aims to capture and analyze the emotional expressions and sentiments expressed in the analyzed content. It allows for a systematic exploration and categorization of the predominant emotional states conveyed within the dataset, providing valuable insights into the emotional dimensions of the content.	17
Justification strategies	The “Justification strategies” category in the codebook analyzes the arguments used to justify attitudes or emotions in the content. It helps identify and categorize the reasons or supporting points authors or participants use to back up their positions or emotional states.	7
Perceived government characteristics	The “Perceived government characteristics” category in the codebook focuses on capturing and analyzing the qualities, traits, or attributes attributed to the government as expressed in the researched content. It provides a systematic framework for identifying and categorizing the impressions, beliefs, or perceptions individuals have about the governmen’s ability, benevolence, integrity, reliability, and transparency.	10

3.4 Intercoder reliability testing

To ensure the codebook's reliability and validity, it underwent testing by applying it to a sample of 30 tweets and calculating inter-coder agreement using the Cohen's Kappa. Cohen's Kappa is a statistical metric employed to evaluate the consistency between two or more assessors when categorizing or classifying data (McHugh, 2012). The outcome of this testing with a second coder resulted in a score for each element in the codebook, which can be found in Table 2 below.

Table 2

Intercoder-reliability scores for all codes

Code	Cohen's Kappa	Percentage agreement
Pandemic	1	100%
Vaccination	1	100%
Climate change	1	100%
Energy crisis	0.78	96.7%
Taxes	1	100%
News media	0.65	96.7%
Measures/Policy	0.93	96.7%
Authority	1	100%
Economy	1	100%
Joy	1	100%
Gratitude	0.65	96.7%
Satisfaction	1	100%
Hope	1	100%
Hopelessness	0.00, because there is no agreement on '1'	96.7%
Anger	0.65	96.7%
Disdain	0.61	90%
Sadness	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Discontent/Disappointment	0.8	90%
Fear	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Neutral	1	100%
Humor	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%

Code	Cohen's Kappa	Percentage agreement
Sarcasm/Irony	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Extreme standpoints	0.74	90%
Extremist assumptions	0.93	96.7%
Insults/Personal attacks	1	100%
Sexism	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
COVID-19 denial	1	100%
Climate change denial	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
COVID-19 policy (Start)	0.65	96.7%
COVID-19 policy (End)	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Climate change policy	0.65	96.7%
Government respect	1	100%
External comparison	1	100%
Ability	1	100%
Benevolence	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Integrity	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Reliability	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Transparency	Not calculatable, because both coders agreed on 0 for all 30 tweets	100%
Inability	0.87	93.3%
Malevolence	0.87	96.7%
Lack of integrity	0.91	96.7%
Unreliability	0.00, because there is no agreement on '1'	96.7%
Lack of transparency	0.82	93.3%

The individual scores in this study ranged from 0.65 to 1. Based on Cohen (1960), McHugh (2012, Cohen's Kappa section) provides interpretation guidelines for these scores: "values between 0.01 and 0.20 indicate slight agreement, 0.21 to 0.40 represent fair agreement, 0.41 to 0.60 signify moderate agreement, 0.61 to 0.80 indicate substantial agreement, and scores between 0.81 and 1.00 reflect nearly perfect agreement."

Based on these interpretations, substantial agreement was observed for the codes related to "Energy crisis", "News media", "Gratitude", "Anger", "Disdain", "Discontent/disappointment", "Extreme standpoints", "COVID-19 policy (Start)", and "Climate change policy." All other codes achieved scores above 0.81, indicating near-perfect agreement. However, for certain codes, Cohen's Kappa could not be calculated due to the absence of agreements for the variable '1'. For instance, no tweets in the intercoder reliability testing sample mentioned "transparency" according to the coders' perception. Although Cohen's Kappa could not be calculated in these cases, the high percentage agreement suggests that these codes were not a cause for concern.

3.5 Data analysis procedure

The collected data was subjected to quantitative analysis using the codebook described earlier, with the tweets content manually coded in Excel. The obtained results were then statistically analyzed using R and RStudio. To answer the first two research questions, frequencies were computed, and frequency visualizations were created. To explore whether likes and retweets serve as proxies for the most expressed attitude, some linear relationships were tested. To accomplish these tasks, the R packages "ggplot2" and "corrplot" were employed. In addition, the qualitative aspect of the analysis involved examining the specific expressions of trust and distrust in the tweets, highlighting notable quotes from the tweets. This was done to address all three research questions partly.

Chapter four: Results

The results section will provide an overview of the findings from the data analysis. Firstly, the data for climate change and COVID-19 will be addressed separately, presenting quantitative code frequencies, qualitative key findings, and the approximations of likes and retweets as a representation of the prevalent expressions for each topic. Finally, a comparative analysis of the results for both cases will be presented. The examples of tweets were translated into English with minor adjustments for clarity.

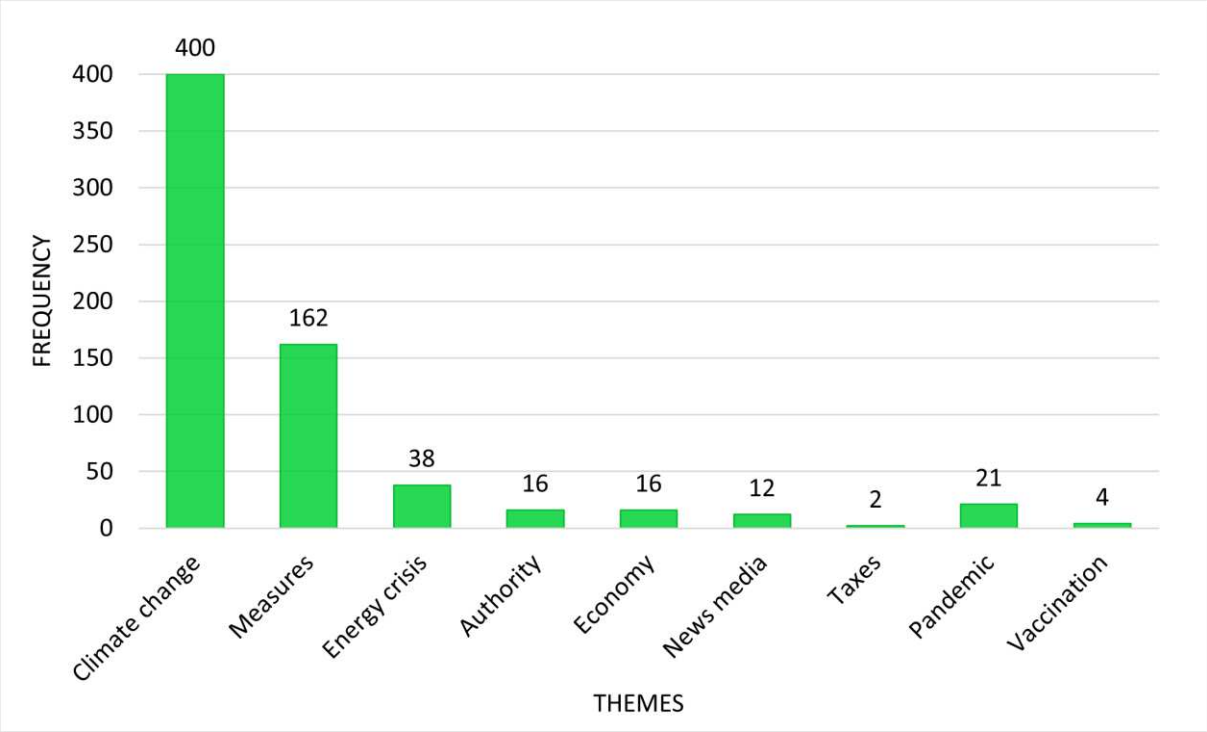
4.1 Government and climate change

4.1.1 Overview of code frequencies

Overall, 400 tweets on the topic of governmental institutions and their responses to climate change were analyzed. To get an understanding of what the Twitter users express regarding their trust and distrust in the government, and what the most common expressions are, the frequencies of all codes in the codebook will be looked at first. To start, the general themes that were addressed in the content were analyzed. Figure 1 shows an overview of the frequency of each theme in the corpus of tweets about the German government and climate change.

Figure 1

Frequency of themes in tweets about the government and climate change



Note. Codes can co-occur in the content.

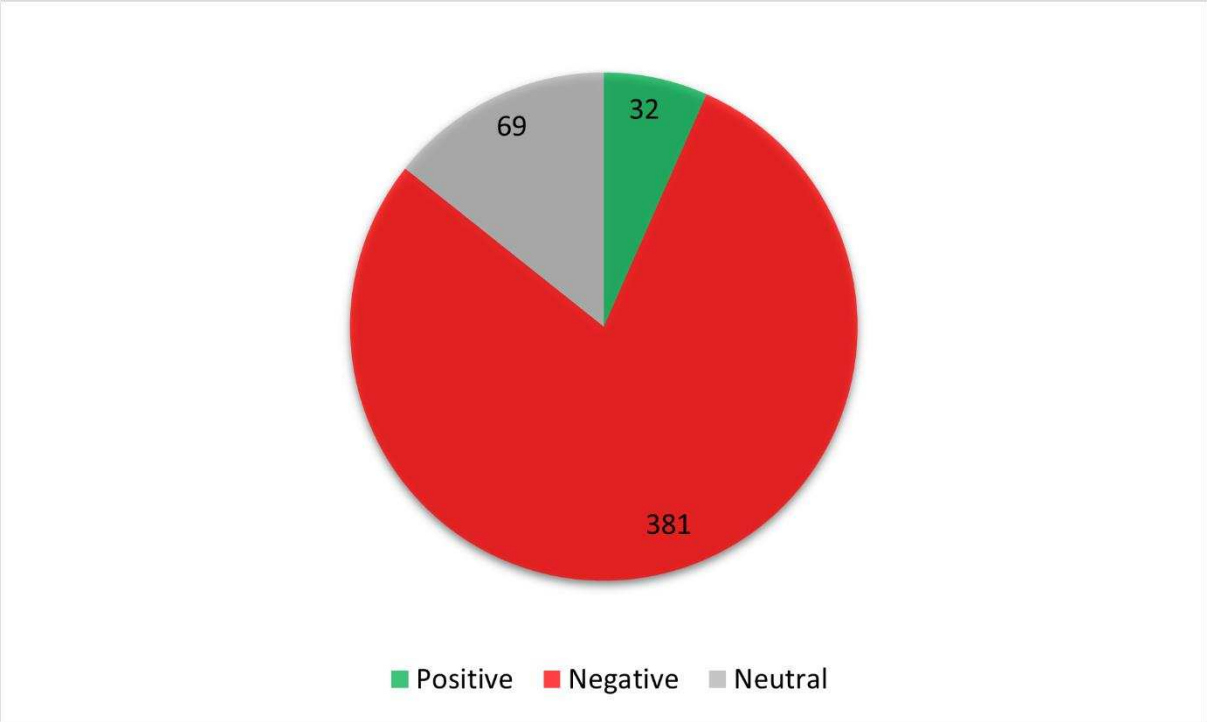
Given the requirement for the tweets to focus on climate change to be included in the analysis, all 400 tweets include this theme. The second most prevalent topic revolved around the measures taken by the government to tackle climate change, with it being mentioned 162 times. This encompassed various actions implemented to address the issue effectively. Another significant aspect is the energy crisis, which was frequently associated with the closure of nuclear power plants and the pursuit of alternative renewable energy sources, along with the subsequent consequences. Notably, 21 of the 400 tweets also touched upon the COVID-19 pandemic in relation to climate change. Less relevant in connection to climate change seem to be the themes of vaccination, taxes, news media, authority, and economy, with frequencies ranging from two to 16.

In order to understand the connections behind the themes, the emotional tone, justification strategies and perceived government characteristics needed to be looked at. The following four figures present overviews of the frequencies of different emotional tones (Figure 2 and 3),

frequencies of justification strategies (Figure 4), and frequencies of perceived government characteristics (Figure 5), which make up the five elements of trust, in the content about government and climate change.

Figure 2

Frequency of emotional tones in tweets about the government and climate change



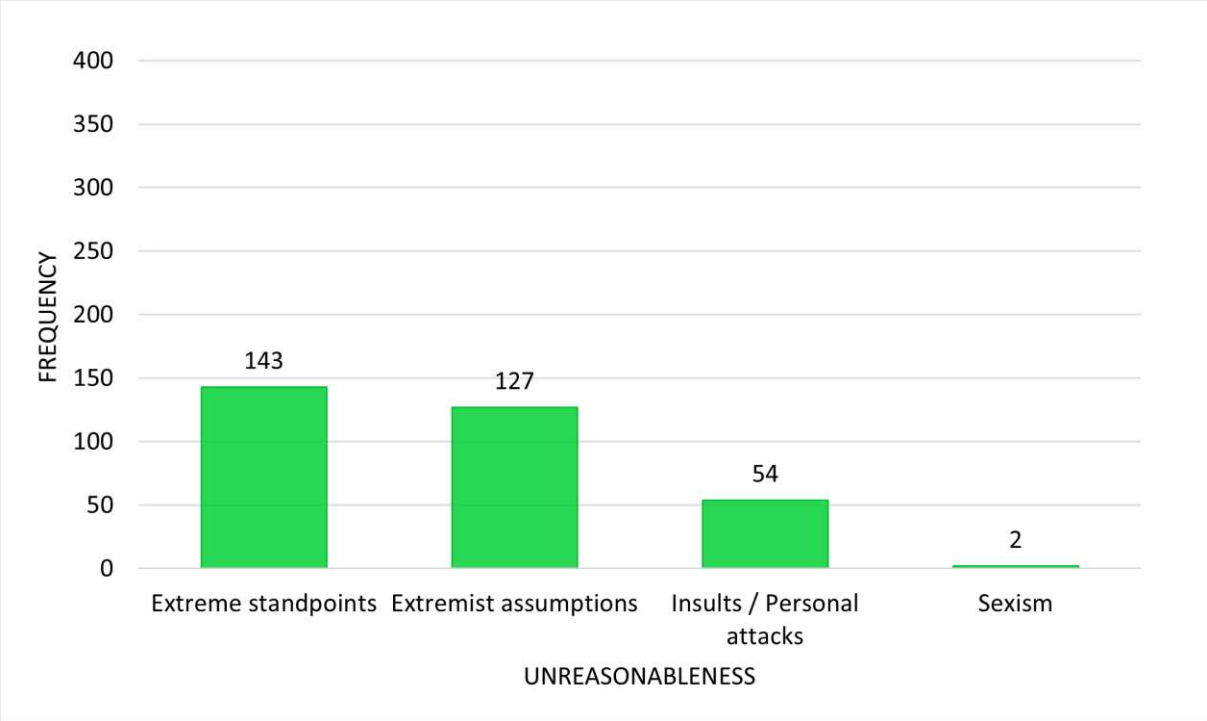
Note. The overall frequency count exceeds 400 since certain emotional tones co-occur within the content.

Figure 2 comprises of three categories: positive, negative, and neutral. The positive category includes the codes joy, gratitude, satisfaction, and hope. Joy was not explicitly conveyed in the content, while gratitude appeared five times, satisfaction appeared 12 times, and hope appeared 15 times. In the following sections, the frequencies of each code will be presented in brackets after the corresponding term. Within the negative category, the following codes are included: hopelessness (62), disdain (115), discontent (154), anger (34), sadness (2), and fear (14). The neutral category consists solely of the codes neutral (27), humor (17), and sarcasm / irony (25).

Another category of emotion that was included in the analysis is “unreasonableness”. Figure 3 gives an overview of the codes incorporated in it and their frequencies.

Figure 3

Frequency of unreasonableness in tweets about the government and climate change

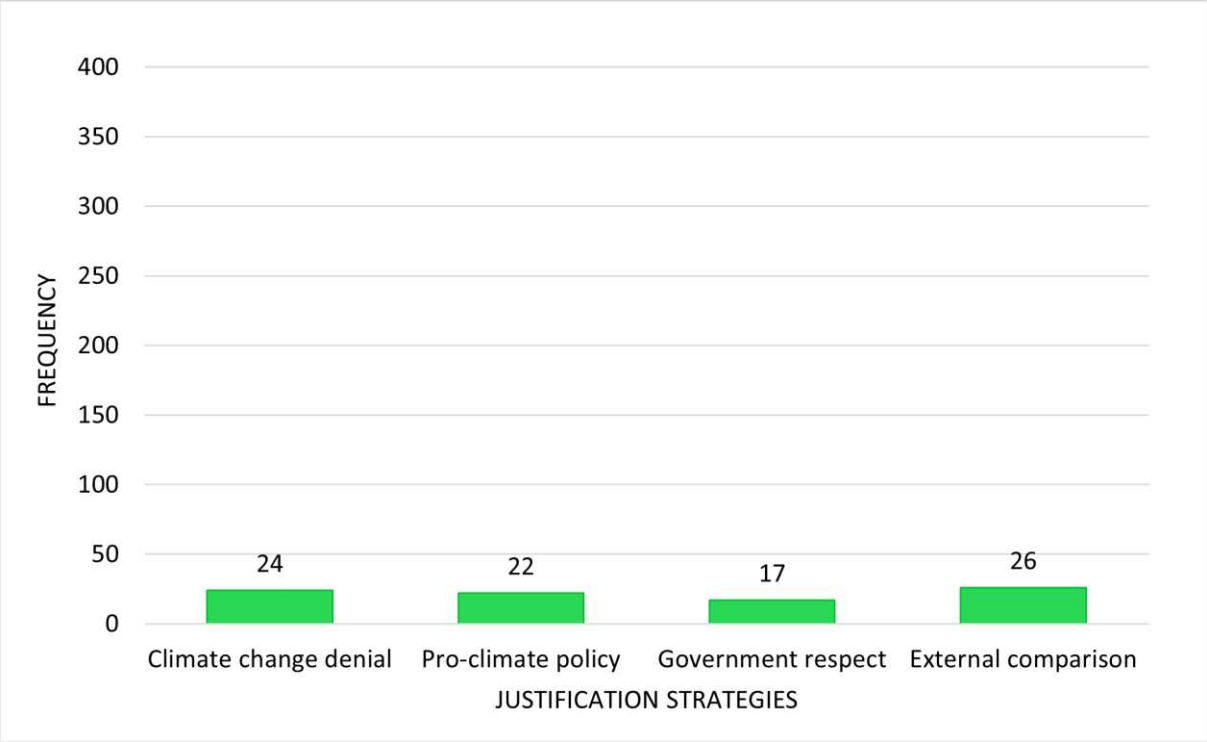


Note. Codes can co-occur in the content.

It becomes evident that most codes that were identified originate from the negative and unreasonableness category. Specifically, expressions of extreme standpoints, and extremist assumptions were prominently observed within the content discussing the government's role in addressing climate change.

Figure 4

Justification strategies and frequencies in tweets about the government and climate change

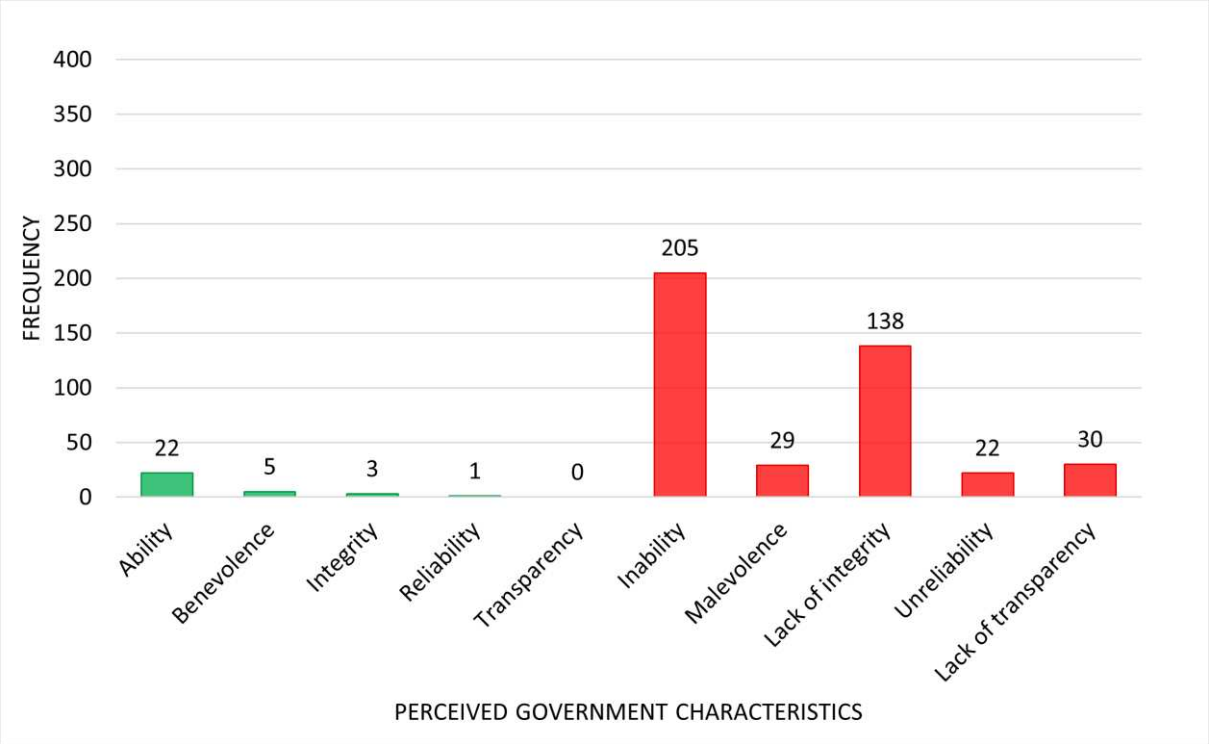


Note. Codes can co-occur in the content.

"Justification strategies" in Figure 4 refers to differing arguments the users employed to support their opinions. Firstly, climate change denial refers to the belief that climate change is not real. This perspective was expressed in 24 of the 400 tweets. Secondly, pro-climate policy signifies the user's support for policies aimed at addressing climate change, which was evident in 22 tweets. Respect towards the government was expressed in a more limited manner, with only 17 tweets conveying this statement. Additionally, external comparison emerged in 26 tweets, wherein users compared the actions of the German government to those of other countries. While users employed other arguments, they either belonged to the category of perceived government characteristics or their frequencies were not significant enough to warrant separate coding. These arguments will be addressed in more detail during the qualitative portion of the analysis.

Figure 5

Perceived government characteristics and frequencies in tweets about the government and climate change



Note. The overall frequency count exceeds 400 since characteristics co-occur within the content.

Figure 5 provides an overview of the distribution of positive and negative government characteristics as perceived by Twitter users in their tweets. Within the positive category, the following characteristics were identified: ability (22), benevolence (5), integrity (3), reliability (1), and transparency (0). Conversely, the negative category encompassed the following codes: inability (205), malevolence (29), lack of integrity (138), unreliability (22), and lack of transparency (30). These findings indicate that approximately 93.2% of the identified codes relating to the perception of government reflect a negative opinion.

In summary, the analysis of 400 tweets on governmental institutions and climate change reveals important insights. Climate change was the most discussed theme, followed by government measures to address it and the energy crisis. Some tweets also connected climate change with the COVID-19 pandemic. The emotional tone was predominantly negative, with expressions of disdain,

discontent, and anger outweighing positive emotions. Justification strategies focused on climate change denial and external comparison. The perceived government characteristics leaned towards negativity, highlighting issues of inability, lack of integrity, and transparency. Overall, the analysis reflects widespread dissatisfaction and criticism towards the government's approach to climate change. These findings provide insights into public sentiment and can inform further qualitative analysis of the content.

4.1.2 Expressions of trust and distrust: Key findings

After providing an overview of 'what' is expressed in the content, the next step is to look at 'how' that is expressed in specific. This will be done by examining the qualitative manifestations. Thus, the specific expressions of the previously established prevalent attitudes and opinions will be explored next. One user's remark regarding the German government's intended measures reads: "Even if Germany reaches 0% CO2, this will not change the climate. Only that Germany is destroyed afterward." This extreme standpoint underscores their belief that the measures fail to achieve their intended purpose, thus highlighting the perceived inability of the government. Furthermore, other users' comments add to this perception, stating, "What measures even help the climate? Show your colors and don't just babble.", and "So far, Germany has spent 5 billion on the 'climate'. Everything for nothing, absolutely everything, no return, nothing. It has been burned!" These disdainful remarks further emphasize the perceived government's inability in addressing climate change. Furthermore, users occasionally employ humor to express their extreme attitudes. For instance, one tweet humorously states, "I would laugh if it turned out that the … [government] have really ruined the climate with their measures. And open a bottle of Crimean champagne." Another tweet, while humorous, conveys disdain and insult, stating, "Whoever is responsible for such shitty policies should not discuss chocolate. If the world is going to end soon because of the climate, then children should also be allowed to eat chocolate."

Users often insinuate a lack of integrity within the government, primarily suggesting financial motivations or policies that favor specific groups at the expense of others. For instance, one user

questions, “Why not ignore industry and lobby interests and simply set a max. of CO2 per sqm?” Another tweet asserts, “We have no influence on the climate, and all measures only make us poorer.” Notably, the latter tweet even implies a denial of climate change, positing that human influence on the climate is negligible. This denial of climate change is also expressed by a few other users, such as “Your climate lie is old! Always the same fairy tale! CO2 is good for plants!” Another user’s statement highlights a perceived biased perspective, stating, “In their worldview, whoever is poor is to blame. The poor cause very little CO2 anyway. The ... [government] doesn’t dare approach the rich polluters because they themselves belong to them.” Furthermore, a user remarks, “The fact that his government party... is breaking the constitution because of the climate doesn't bother him and them either.” In a more extreme statement, another user proclaims, “The government, mainstream media, corporations, and churches are #ANTIWHITE, and they are INTENTIONALLY inflicting immense harm and immeasurable suffering under FALSE PRETENSES like ‘climate’.” These statements further underscore the perception of the government lacking ethical principles, exhibiting a notable degree of radicality and anger in the last quote.

On another note, certain users express satisfaction with the government's capability to implement measures and hold hope for future progress. Some quotes reflecting this perspective are: “A liberal CO2 trade is the basis for the preservation of the climate, so I understand the approach very well! … This is where politics must start.”, “Another really good thing is that the law is to apply to the entire value chain and not just to direct business relationships. It also strengthens the due diligence requirements for the environment and climate.”, and “These measures are the first, mandatory steps toward complying with the Paris Climate Agreement and limiting global warming to 1.5 degrees.” These statements refer both to the ability, as well as the integrity of the government, emphasizing that the implemented measures represent initial steps in the right direction, benefiting everyone.

In the context of climate change, users compare the German government to that of other countries mostly by stating that in the grand scheme of things, Germany does not matter for the

climate. Example tweets that belong to this are: “The [German] government cannot save the climate on its own. It can’t control anything, because Germany has a tiny share.”, “The German government overestimates itself enormously in its delusions of grandeur. Neither in matters of climate, security, importance nor influence does it have the slightest say in the world.”, “Even if one assumes that the CO2 concentration determines the climate - how can German / European measures change anything?”, and

> Costs/benefits of climate measures in Germany are catastrophic. If you want to use an amount of 1 trillion Euro to achieve the best climate protection, you have to use it where it brings the most benefit for the climate worldwide. And that is not Germany.

To conclude, the main results from the analysis surrounding public discourse on climate change and the government are that users express a focus on the measures implemented to combat climate change, accompanied by prevalent emotional tones of discontent and disdain. These sentiments often co-occur with extreme standpoints and extremist assumptions. Within this context, the perceived characteristics of the government primarily revolve around an inability to address climate change effectively and a distinct lack of integrity.

4.1.3 Approximation of popularity of opinions

The dataset exhibits a lot of differences in the numbers of likes and retweets on the content. The likes range from zero to 688, while the retweets range from zero to 188. To evaluate the linear association between likes and retweets, a Pearson correlation coefficient was calculated. The analysis revealed a positive correlation between the two variables in the Twitter posts discussing climate change, $r(398) = .751$, $p < .001$, 95% CI [.705, .791]. The p-value ($p < .001$) suggests highly significant evidence against the null hypothesis, assuming an alpha of $\alpha = .05$, indicating that the correlation observed is unlikely to occur by chance alone. This indicates that a higher number of likes corresponds to a higher number of retweets.

The tweet that garnered the most likes addresses an article about the recruitment efforts of radical climate activists in schools:

> The rule of law and democracy are part of the educational canon. Representatives of the … [radical climate activists] commit crimes. Some sow skepticism against the representative democracy. That's why we can't roll out the red carpet for them in our schools.

The article, as well as the tweet, emphasize the importance of upholding the rule of law and democracy, cautioning against skepticism towards representative democracy. Thus, this tweet does not seem to align with the prevailing attitude towards the government and climate change, as established in the previous section. Other highly liked tweets are “Corruption as it lives & breathes! Not the climate is the evil, but … [the government party] and the incompetent, corrupt politicians of the … [coalition]!” (359 likes) and “It is not climate activists who should be punished, but the corporate leaders and politicians who knowingly and willingly destroy our future.” (109 likes). These tweets pertain to separate articles again, with the first addressing alleged corruption within a coalition member and the second discussing the harsh punishment of radical climate activists. The tweet with the highest number of likes also has the second highest number of retweets (74), while the second most liked tweet has the highest number of retweets (188). Other tweets that were liked and retweeted often include “[Coalition member] … considers nuclear phase-out irreversible - and guarantees secure energy supply via … [news media]. Coal for the climate. Price doesn't matter. Industry continues, just somewhere else. #We have shut down” (90 likes, 14 retweets), “The German government overestimates itself enormously in its delusions of grandeur. Neither in matters of climate, security, importance nor influence does it have the slightest say in the world.” (82 likes, 10 retweets), and

> Why is #climateprotection only linked to doomsday scenarios. This brutal communication of the end of time creates a feeling of powerlessness and the citizens disengage. There are many positive examples of measures that protect the climate, save costs and are smart” (66 likes, 7 retweets).

The initial two messages align with the most frequently expressed attitude, as they assert that the measures taken to address climate change are either ineffective or pale in comparison to those of other nations. Conversely, the last tweet diverges from this viewpoint by suggesting that certain implemented measures have proven effective and encourages citizens to adopt a less negative stance towards the government and its initiatives.

In general, it can be observed that the majority of highly liked or retweeted tweets in this case were in line with the prevailing viewpoint expressed by Twitter users towards the government. However, there were also notable instances where the opposite opinion stood out as significant outliers.

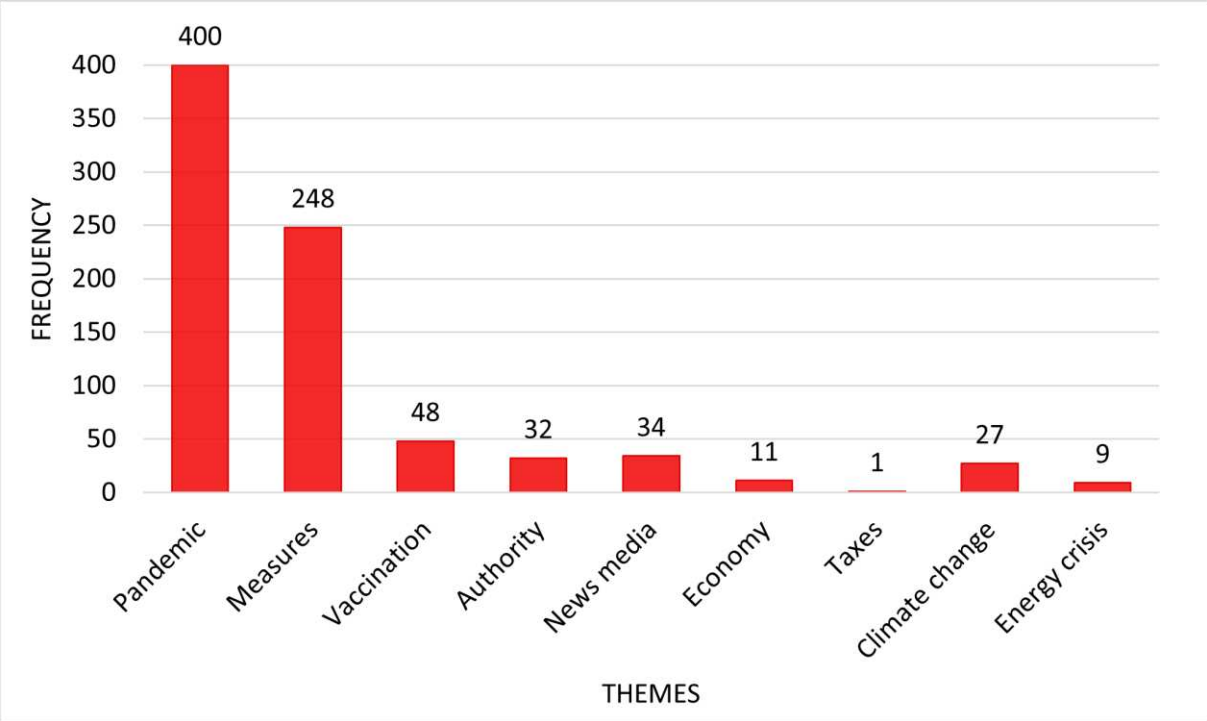
4.2 Government and COVID-19

4.2.1 Overview of code frequencies

A total of 400 tweets focusing on the responses of governmental institutions to COVID-19 were examined. Initially, an analysis was conducted to identify the main themes addressed in the tweet content. Figure 6 provides an overview of the frequency distribution of each theme within the collection of tweets discussing the German government and COVID-19.

Figure 6

Frequency of themes in tweets about the government and COVID-19

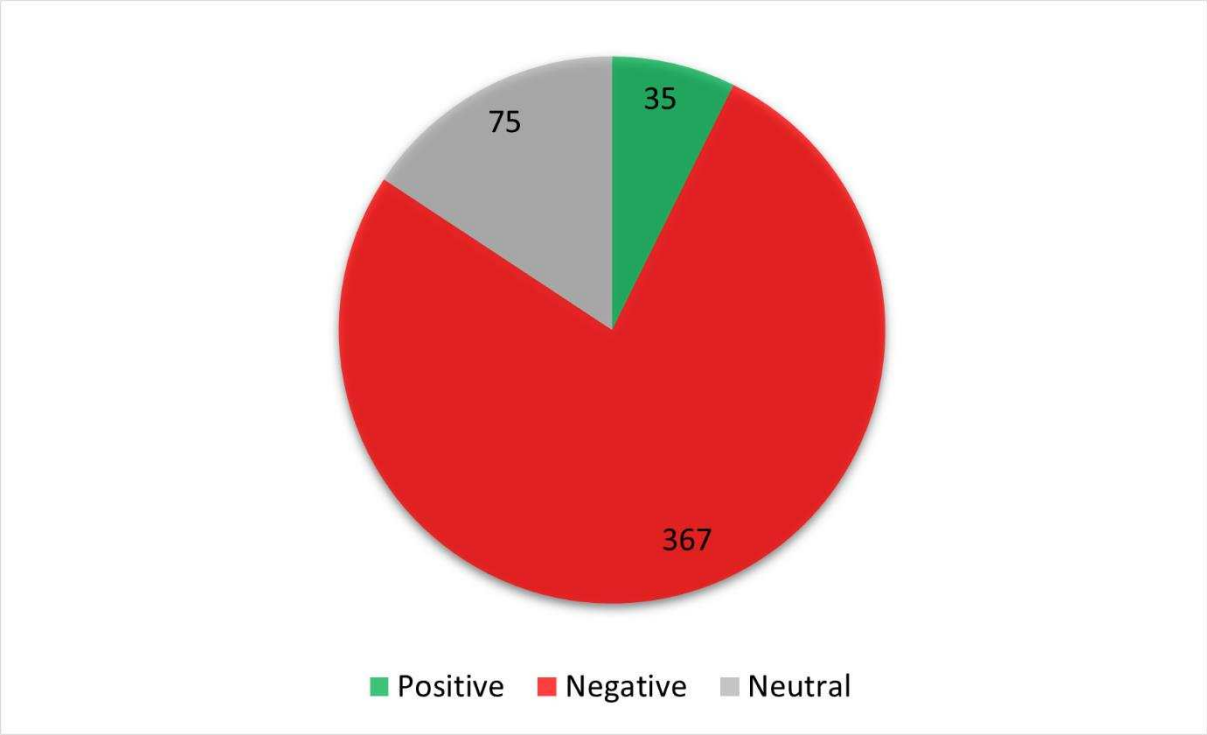


Note. Codes can co-occur in the content.

The entire set of 400 collected tweets exclusively related to the topic of COVID-19, with each tweet mentioning the pandemic in some capacity. Interestingly, over half of the tweets directly engaged with the government's measures implemented to address the pandemic. Within this context, 48 tweets specifically addressed the COVID-19 vaccination. Moreover, mentions of authorities other than the government amounted to 32, while references to various news media platforms were made 34 times. On the other hand, discussions regarding the economy, taxes, and energy crisis appeared to be less prominent in this context. Lastly, climate change was directly linked to the COVID-19 pandemic in 27 instances.

Figure 7

Frequency of emotional tones in tweets about the government and COVID-19



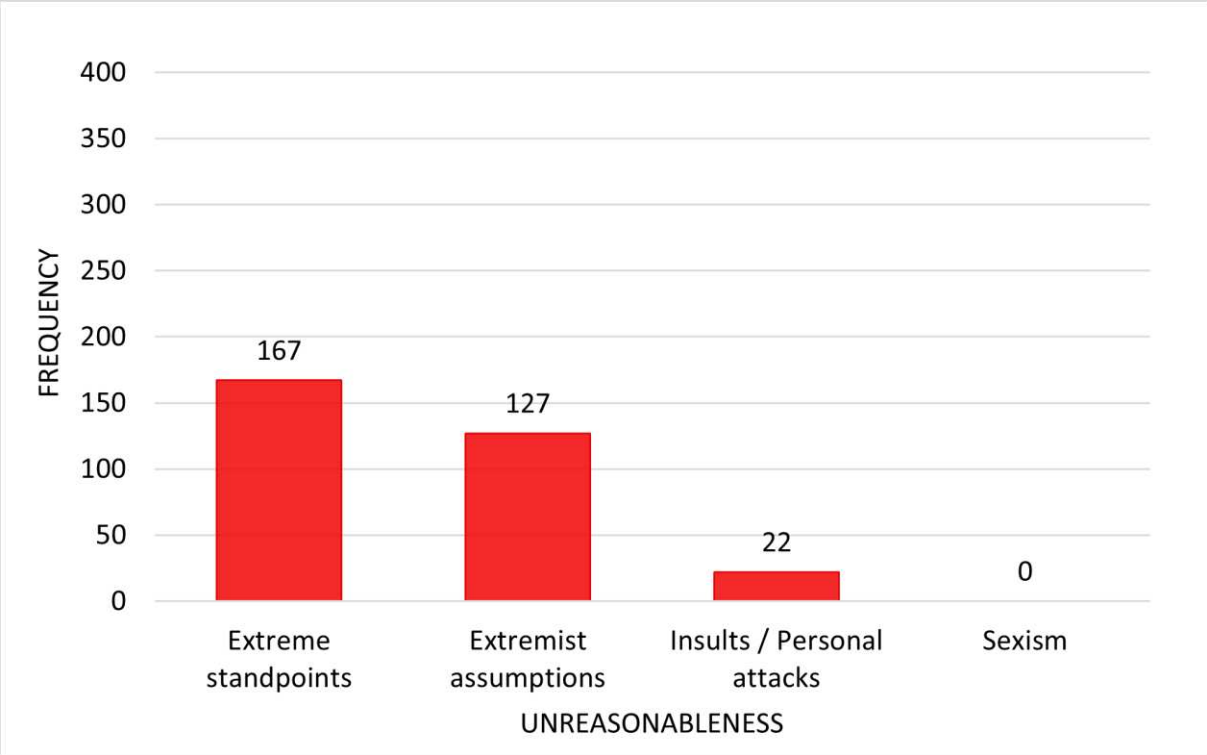
Note. The overall frequency count exceeds 400 since certain emotional tones co-occur within the content.

The data analysis revealed frequencies of emotional tones across three categories: positive, negative, and neutral (Figure 7). The positive category encompasses emotions such as joy (1), gratitude (10), satisfaction (18), and hope (6). In contrast, the negative category includes emotions such as hopelessness (31), disdain (132), discontent (161), anger (33), sadness (2), and fear (8). The neutral category consists of the codes neutral (44), humor (7), and sarcasm/irony (24).

Moreover, another emotional category is the “unreasonableness” category, as seen in Figure 8.

Figure 8

Frequency of unreasonableness in tweets about the government and COVID-19



Note. Codes can co-occur in the content.

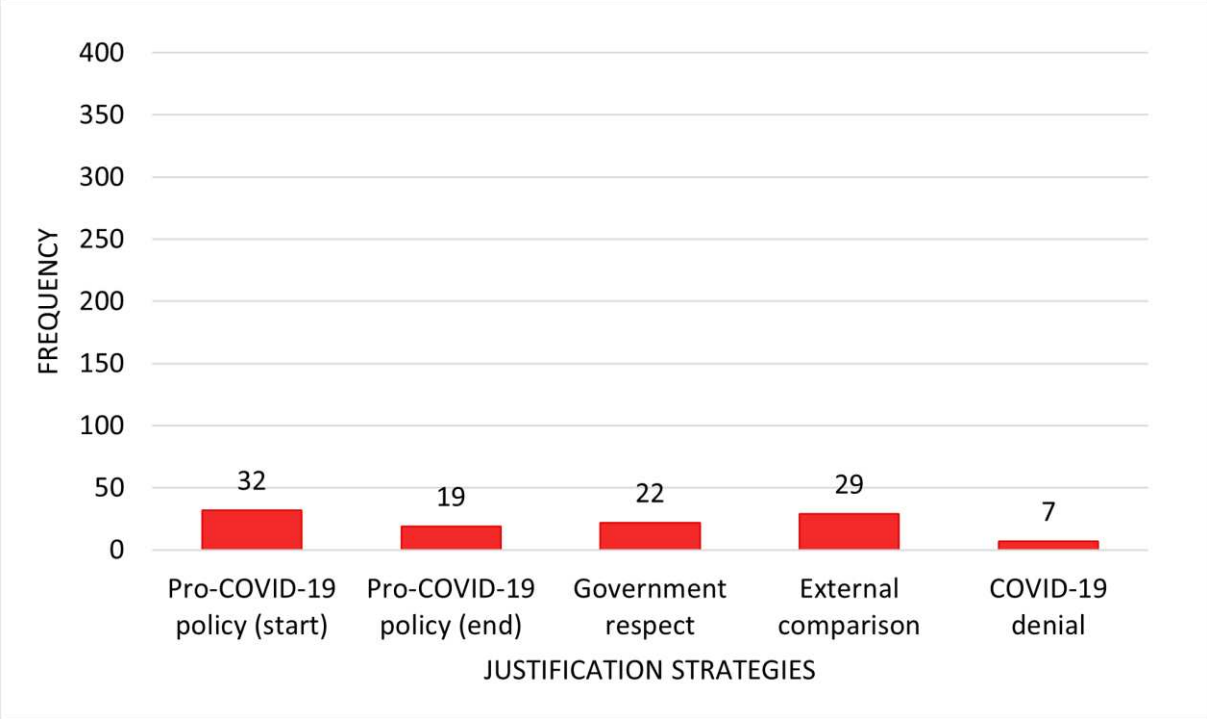
The public discourse surrounding the government and COVID-19 primarily centers around the government's implemented measures, particularly vaccination efforts. Within this context, users often reference authority figures and news media, and occasionally discuss climate change as well. However, it is notable that the prevailing tone in these discussions is one of discontent and disdain. Additionally, feelings of hopelessness and anger are also prominently expressed. It is evident that individuals hold extreme viewpoints and make extremist claims about the government to bolster their arguments, with 22 instances of direct insults being observed. Nonetheless, there exists a significant group of users who engage in the topic with a neutral or positive perspective.

Users employ diverse justification strategies and arguments to underscore their viewpoints. Figure 9 provides an overview of the most prevalent ones, while additional arguments that were

included in the perceived government characteristics or not expressed frequently enough to warrant individual categories will be addressed in the qualitative section of the results.

Figure 9

Justification strategies and frequencies in tweets about the government and COVID-19



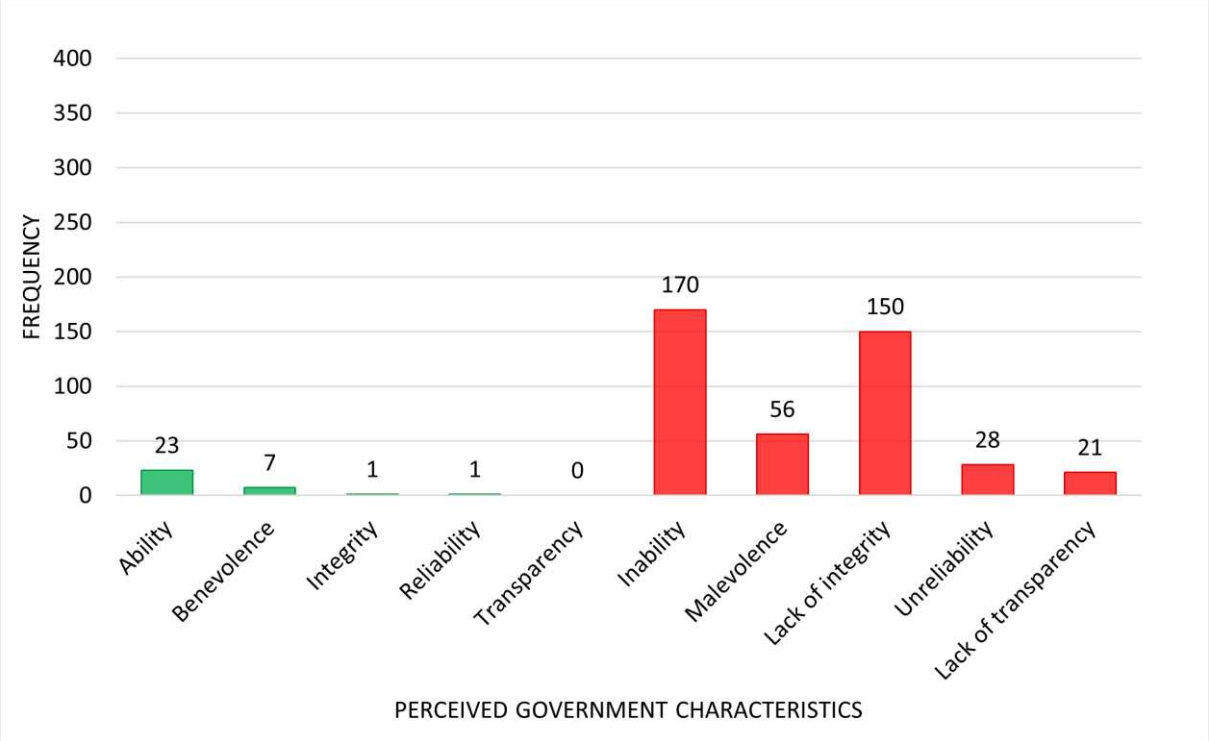
Note. Codes can co-occur in the content.

During the initial phase of the pandemic, the government introduced a range of policies aimed at reducing infection rates, referred to as “COVID-19 policy (start).” More recently, the German government has begun to roll back these measures, described as “COVID-19 policy (end).” Out of the analyzed tweets, 32 expressed a positive attitude towards the initial policies, while only 19 showed positivity towards the policies’ termination. This suggests that people may have been more content with the implementation of the measures and less pleased when they were lifted. In terms of external comparisons related to COVID-19, such comparisons were made 29 times, mostly in reference to the measures taken by the German government in relation to those adopted by other countries and their resulting consequences. Only 22 users explicitly expressed respect for the government, while a mere seven denied the existence of the COVID-19 virus.

To analyze how these themes, sentiments, and arguments influence the elements of trust in the government, here-called “perceived government characteristics”, those need to be looked at as well. Figure 10 provides a picture of the distribution between the five positive and five negative characteristics in the dataset.

Figure 10

Perceived government characteristics and frequencies in tweets about the government and COVID-19



Note. The overall frequency count exceeds 400 since certain characteristics co-occur within the content.

The analysis reveals that the overwhelming majority, 93.5%, of the perceived government characteristics fall within the negative category. Specifically, the frequencies of characteristics in the positive category are as follows: ability (23), benevolence (7), integrity (1), reliability (1), and transparency (0). In contrast, the negative category comprises the following: inability (170), malevolence (56), lack of integrity (150), unreliability (28), and lack of transparency (21). The most expressed perceptions revolve around the government’s inability and lack of integrity, with

allegations of malevolence also being significant. On the other hand, in the positive category, ability and benevolence appear to be the characteristics perceived by multiple users.

In the analysis of 400 tweets focusing on governmental responses to COVID-19, several key findings emerge. The tweets exclusively center around COVID-19, with a majority discussing the government's measures and the vaccination efforts. Notably, a prevalent tone of discontent and disdain is observed, accompanied by emotions of hopelessness and anger. However, there is also a considerable number of users expressing neutral or positive perspectives. Justification strategies vary, with external comparisons and respect for the government being less prominent. The analysis of perceived government characteristics reveals a predominantly negative perception, with notions of inability, lack of integrity, and even malevolence being prominent. Positive characteristics such as ability and benevolence are also perceived by some users. These findings shed light on the prevailing opinion and sentiment regarding the government's handling of COVID-19, highlighting areas of concern and areas where improvements may be desired.

4.2.2 Expressions of trust and distrust: Key findings

Now that the frequencies of all codes have been described, it is important to examine how they manifest themselves qualitatively. Some tweets that represent the most common opinions as established before include: "Honestly? Low interest rates = politically wanted, pandemic = politically generated, choice of profession = politically influenced - … in all points politics fail, over and over again!", "The Corona vaccination of children and adolescents was probably the biggest mistake in the last 2 years. The way to enforce this through politics and media, with pressure and scaremongering, was in my opinion already criminal.", "Because the people here let everything happen to them. Politics is screwing us every day and the last straw were the Corona measures.", and

> The #measures proclaimed and enforced due to the #pandemic were one of the first forms of institutionalized public #health for the legitimized #extension of power of the #state. There has never been anything like it in the #history of #humanity.

These tweets indicate that the government is perceived as lacking integrity, with allegations of ulterior motives, such as power extension, and the employment of unethical tactics like pressure and scare tactics to enforce their policies. It is important to note that attributing such actions to the government constitutes an extreme assumption, as these activities are criminal and should not be carried out by a democratic government. Making such claims is a serious allegation and implies an extreme viewpoint. Moreover, asserting that vaccinating children was the biggest mistake during the pandemic implies that the implemented measures were either ineffective or achieved undesirable outcomes, thereby emphasizing the perceived inability of the government. Another tweet within the dataset highlights the perceived lack of transparency: "The politicians know it anyway, but admitting it would mean that they should have listened to the prevention warnings, now everything else is to blame but not Covid." This tweet implies that the government is intentionally concealing certain information from the public, indicating a deficiency in transparency within their practices.

In certain instances, users employed humor to underscore their attitudes. For example, one tweet remarked, "It's the same with the … [government party]! As with Corona: First they rush to demand measures, then when they are there, they reject them all outright. The kindergarten principle...□♀🤰". By comparing the government's behavior to that of a kindergarten, the user conveys a perception of immaturity, suggesting a certain level of disdain. Furthermore, the statement implies that the government is deemed unreliable, as they advocate for certain measures only to immediately contradict themselves. Another tweet states, "When will you resign? That would be a nice Easter present to all those who have suffered under your Corona measures," directly addressing a specific party member. This tweet can be seen as a personal attack, employing humor through the comparison of resignation to an Easter present. However, the underlying message still conveys disdain and discontent towards the COVID-19 measures, alleging that people have endured hardships as a result.

Conversely, some users demonstrate a positive attitude towards the government in relation to COVID-19. For instance, one user straightforwardly states, "Vaccinate instead of berating! My YES

to the COVID-19 law!" This comment highlights strong support for the COVID-19 measures and vaccination policies. Another user expresses a dissenting viewpoint from the prevailing sentiment within the dataset by stating, "The measures have worked, we can look forward. I have no desire to continue talking to people who (like Trump) are sore losers and mourn a (supposed) lie." This statement signifies the user's satisfaction with the implemented measures and their positive outcomes, as well as their skepticism towards claims of government deception.

Regarding news media, some users assert that the government manipulates and controls the media to support their measures:

> They are all in on it together. The government has taken over the media and controls the judiciary and thus the laws. The separation of powers has been undermined and has not functioned at all since Corona. Justice and the law are not obtainable anymore.

It is important to note that such allegations constitute serious claims and may be regarded as extreme assumptions. Accusing the government of employing unethical tactics like media control implies a perception of the government lacking integrity. Another tweet supporting this claim is "What kind of situation is it where only retired people - from media, academia, politics - can speak plainly because everyone else is threatened with repressions? #freedom of expression #democracy #Corona", suggesting that the government censors the citizens and journalists in news media.

In conclusion, the analysis of tweets revealed a range of attitudes towards the government's handling of the COVID-19 pandemic. While the majority of tweets expressed discontent and disdain, alleging ulterior motives and unethical tactics, a few others showed support for the implemented measures and vaccination policies. Furthermore, there were allegations of government manipulation and control of the media, undermining the separation of powers. It is important to approach these claims with caution, as they constitute extreme assumptions and serious allegations that question the ability, integrity, reliability, and transparency of the government's actions.

4.2.3 Approximation of popularity of opinions

Within the dataset concerning the government and COVID-19, the number of likes ranges from zero to 463, while retweets range from zero to 131. The Pearson correlation coefficient between the number of likes and retweets in the Twitter posts on COVID-19 was found to be positive, $r = .946$, $p < .001$, 95% CI [.935, .955]. The p-value ($p < .001$) provides significant evidence against the null hypothesis, indicating that the observed correlation is unlikely to occur by chance. This means that a higher number of likes tends to result in a higher number of retweets.

The most liked tweet, with 463 likes and 81 retweets is “That outdoor masks did not protect against Corona is now freely admitted by those responsible for the Corona measures. Nevertheless, a Berlin woman is currently in custody for 90 days after she refused to obey this commandment in 2020 and allegedly also ‘resisted’...” This statement reflects dissatisfaction with the government's actions, suggesting a lack of reliability. It implies that despite acknowledging the ineffectiveness of certain measures, the government continues to impose penalties on individuals who did not comply with those measures. Interestingly, two of the most liked tweets within this set of content refer to the same article discussing the actual benefits of wearing masks in hospitals. The article concludes that masks had minimal benefits. The two tweets are as follows: “‘BRITISH CORONA STUDY. That’s what #masks in hospitals really did.’ Comment: for results that were ‘modest at best,’ pregnant and dying women in German hospitals, for example, were tortured and stripped of their human dignity” (262 likes, 70 retweets) and “British scientists have studied what masks actually did in hospitals during the omicron phase of the Corona pandemic. The result: the real benefit was ‘modest at best’” (142 likes, 42 retweets). Both tweets support the opinion that the government's implemented measures, specifically wearing masks, were ineffective and futile, thereby aligning with the prevailing view that the government lacked ability. Moreover, the first tweet even alleges malevolence, claiming that individuals in Germany were “tortured and stripped of their human dignity.” Other highly liked and retweeted tweets include “Where were you, anyway, when it came to the state's acts of violence against the peaceful citizens who protested against the Corona measures?” (119

likes, four retweets), "[Government party member] … embodies everything that is wrong with politics. An opportunistic politician with no content of his own who always aligns his convictions with majority trends" (138 likes, eleven retweets), and

> [The person who commented before's] formulation suggests that the measures were demanded for their own sake. I can't think of anyone to whom that would apply. The aim was to combat the pandemic more effectively and efficiently and to protect as many people as possible from covid (88 likes, five retweets).

In general, it can be observed that the majority of tweets receiving a higher number of likes or retweets align with the prevailing views regarding the government, as established in the dataset. With only a few exceptions, the popular tweets consistently support the most prevalent perspective.

4.3 Comparison between climate change and COVID-19

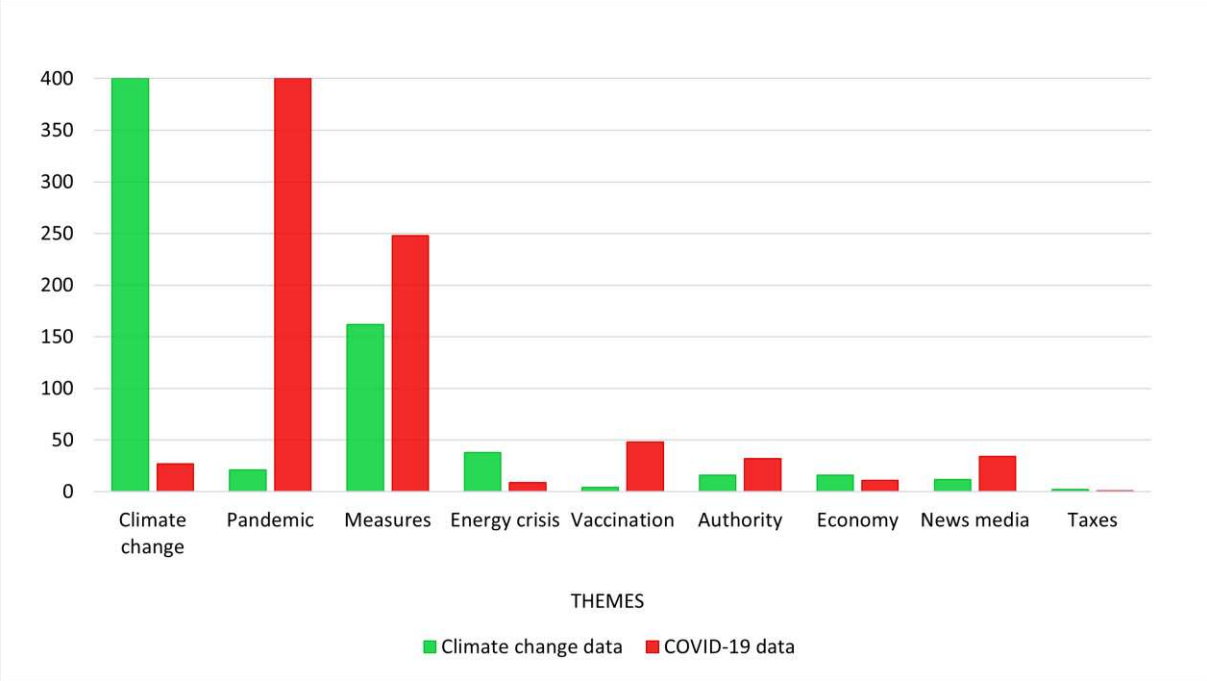
The last objective of the analysis was to compare the results of the tweets concerning the government and climate change to those concerning the government and COVID-19, in order to determine whether the nature of the crisis influences the expressions of trust and distrust in online discourse.

Upon analyzing the theme frequencies depicted in Figure 11, notable differences emerge between the two datasets. While both climate change and COVID-19 are discussed in 400 tweets each, the measures implemented to tackle the respective crises receive significantly more attention in relation to COVID-19 compared to climate change. On the other hand, discussions surrounding the energy crisis are more prevalent in the context of climate change rather than COVID-19. This discrepancy is logical since the energy crisis is directly linked to climate change, not the pandemic. Similarly, COVID-19 and vaccination are closely associated, whereas authority and news media appear to be more relevant in the context of COVID-19 than climate change. The economy garners

more mentions in the climate change dataset, while taxes are relatively less significant in both datasets.

Figure 11

Comparison of theme frequencies in both datasets



Note. Codes can co-occur in the content of each dataset.

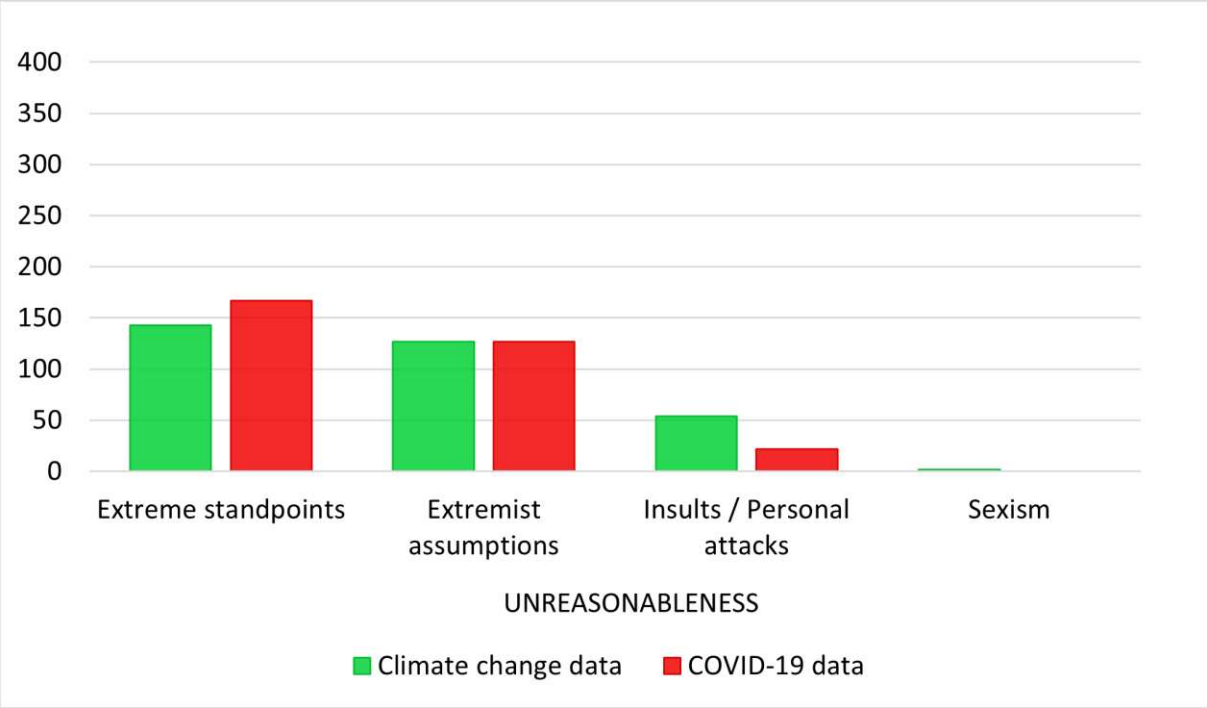
Furthermore, different emotional tones can be differentiated for both datasets. While the overall ratio between positive, negative, and neutral codes is similar for both cases, distinctions can be made in the exact codes compromising the categories. The emotions disdain and discontent are the most frequent in both cases, with frequencies ranging around 115 to 161. However, in the climate change-related tweets the number of recorded cases of hopelessness is double the one in COVID-19 related tweets. Examples of the hopelessness expressed regarding climate change include "Since people can neither protect the climate nor influence it in any other way, the government cannot fail. This is also the only point in which it does not fail.", and "Who would have thought that the self-proclaimed #climate chancellor … only had the climate in the coalition in mind and not the world climate." Both statements convey a sense of hopelessness, which is inherent in various tweets

within the dataset. Firstly, this feeling of hopelessness stems from the perspective that despite the deteriorating state of the climate, humanity is powerless to change anything about it. Consequently, this viewpoint entails that the government's inability to enact effective measures reflects this helplessness. The second facet of hopelessness emerges from the actions of the government itself, suggesting a misguided focus on less significant goals, thereby contributing to a general sense of hopelessness.

The assertion that humans are powerless to mitigate climate change can be regarded as an extreme viewpoint. Figure 12 provides a visual representation of the variations in unreasonable statements within both datasets, indicating a comparable presence of extreme standpoints and extremist assumptions. However, the analysis also reveals notable distinctions between the two topics. The content discussing the government and climate change exhibits a higher frequency of insults and personal attacks compared to the content related to COVID-19. Moreover, instances of sexism are exclusively observed in the climate change dataset, while being entirely absent in the COVID-19 dataset. However, it is worth noting that even within the climate change dataset, instances of sexism are relatively infrequent, occurring only twice. These two instances are: “I was just thinking that it is better not to let any or few #women in positions of responsibility. … [Two female members of the government parties] and the rest of the crew confirm my assumption, and the rest is not better either😒” and “In the meantime, we have reached the point in Germany where it is no longer possible to criticize women in office without being sexist.” Consequently, their overall impact and significance appear to be limited in the broader context of the data.

Figure 12

Comparison of unreasonableness in both datasets



Note. Codes can co-occur in the content of each dataset.

In the context of climate change, extremist assumptions predominantly revolve around the government's underlying motives for their actions. Users frequently allege that the government operates in a manner that prioritizes certain groups while intentionally causing harm to others. For instance, one tweet states, “The climate created by the politics of the privileged benefits ‘normal’ businesses, while individuals with #SocialBehavior and #Vulnerable people become targets of ignorance, aggression, and exclusion. #ProfitsBeforeHumanLives.”

Moreover, other instances of extreme standpoints and assumptions regarding climate change stem from the belief that the implemented measures are entirely ineffective, as humans are deemed incapable of combatting climate change in any meaningful way. In contrast, within the context of COVID-19, standpoints and assumptions revolve more around the notion that the government has been dishonest or withholding information to justify their measures. For instance, tweets such as “Corona vaccine damage ‘hushed up’” and “What is your position on the lies of the

pharmaceutical industry, WHO, politicians, and the media about Covid and the immense vaccine damage?" express this sentiment.

Furthermore, users allege that the government has employed unnecessary violence to enforce these measures, with statements like "Do you remember what happened during the pandemic? You support the government bullies, and you think it's ok" and "I remember how scared I was when hundreds of police surrounded us during the demonstrations against the Corona measures. State-protected terror .." The first tweet expresses discontent towards the government by calling them "bullies", while the second one even implies fear and refers to their measures as "terror".

However, in certain cases, users reference both crises and assume that the government engages in censorship to implement and justify their measures. An example of this is expressed in the following tweet:

> There is a method to this. Those who lied to us during Corona and now also about the climate complain about disinformation. In truth, they want to justify further censorship so that it will work better with nonsensical measures during climate and the next pandemic. No more censorship!!!

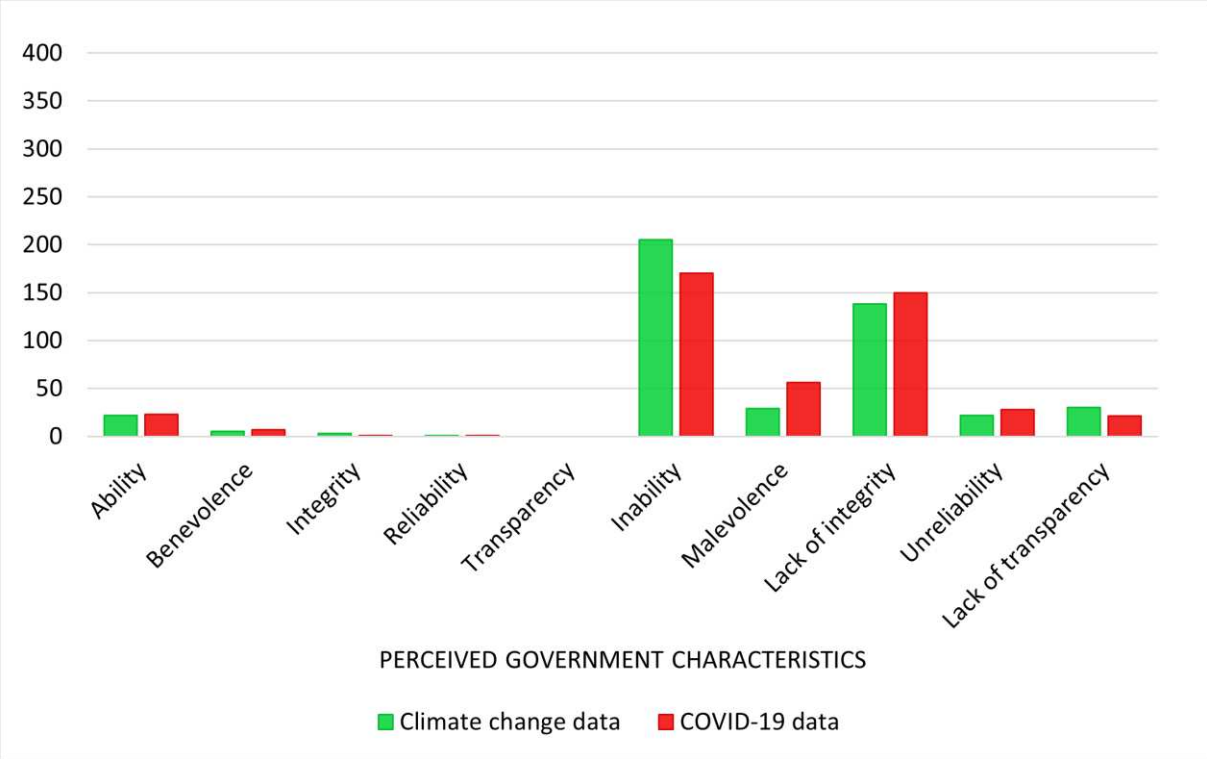
Another tweet echoes this sentiment: "You can spin it any way you want: this government is cheating and deceiving us in every way. We were cheated and lied to about Corona, and we will be cheated and lied to about climate and energy policy." It becomes clear that some people express a worry about the honesty of the government in general and not necessarily in connection to specific contexts.

In terms of the trust elements and perceived characteristics attributed to the government, these statements reflect various perceptions. The analysis revealed that the prevailing perceived characteristics were "inability" and "lack of integrity," both carrying negative connotations. Figure 13

illustrates the frequencies of these perceived government characteristics in tweets related to climate change and COVID-19. While both cases predominantly feature the perception of inability and lack of integrity, the context of climate change elicits a higher frequency of perceived inability, whereas COVID-19 is associated more frequently with lack of integrity. This aligns with the findings suggesting that users believe the government lacks the capacity to implement effective climate change measures while resorting to unethical tactics to justify their actions during the COVID-19 crisis.

Figure 13

Comparison of perceived government characteristics in both datasets



Note. Codes can co-occur in the content of each dataset.

The association of malevolence with the government is more prominent in the context of COVID-19 compared to climate change. As discussed earlier, the analysis revealed that Twitter users often accuse the government of resorting to unnecessary violence to enforce compliance with their COVID-19 measures, indicating a malevolent act. In contrast, within climate change-related tweets, this attitude is less frequently expressed. Instead, statements that imply perceived malevolence are

often accompanied by extreme viewpoints and assumptions, such as the assertion that “The danger for us lies not in climate change (which has existed for billions of years), but in an anti-citizen policy that instrumentalizes the climate!” This tweet suggests perceived malevolence by positing that the government implements policies that work against the citizens rather than in their favor. However, these allegations may be viewed as less severe than those concerning COVID-19, as the latter specifically allege instances of literal violence.

Lastly, the characteristic that stands out the most among the positively connoted attributes is “ability.” In both the context of climate change and COVID-19, numerous users expressed their satisfaction with the implemented measures and acknowledged the government's effectiveness in achieving their intended goals. For instance, a tweet sarcastically remarks, “Everyone wants to stop the climate from tipping further, but woe betide anyone whose personal comfort zone is disturbed by appropriate measures.” This implies that the implemented measures are deemed appropriate, and any complaints stem from individuals being unwilling to adapt to the necessary changes. Another statement asserts, “In my opinion, the effectiveness of the #vaccination has been proven. Many (not all) C19 measures were correct to contain the #pandemic.” Here, the user acknowledges that the government's measures were mostly effective and appropriate, indicating a perceived ability to operate efficiently. Additionally, a simple statement of support reads, “👍 YES to the Climate Protection Law 😀 YES to the Covid Law,” emphasizing the user's endorsement of the government in both cases.

In conclusion, this analysis aimed to compare the expressions of trust and distrust in online discourse regarding the government and climate change versus the government and COVID-19, with the objective of determining if the nature of the crisis influences these perceptions. The analysis of theme frequencies revealed notable differences between the two datasets. COVID-19-related measures received significantly more attention compared to climate change-related measures, while discussions surrounding the energy crisis were more prevalent in the context of climate change. Emotional tones also differed, with climate change-related tweets exhibiting a higher frequency of

hopelessness. Extreme viewpoints and assumptions were present in both datasets, with climate change-related content showing a higher frequency of insults and personal attacks. Sexism was exclusively observed in the climate change dataset but had limited impact overall. Perceived government characteristics primarily included “inability” and “lack of integrity,” with climate change associated more frequently with perceived inability and COVID-19 with lack of integrity. Malevolence was more prominently associated with the government in the context of COVID-19. However, positive connotations highlighted the perceived ability of the government to implement effective measures in both climate change and COVID-19 situations. Overall, the analysis revealed nuanced differences in trust and distrust expressions based on the crisis context.

Chapter five: Discussion

The discussion section of this thesis aims interpret the results obtained from the data analysis from a broader perspective. It will also address the theoretical contributions, practical recommendations for the government and social media, limitations of the study, and identify the questions that remain unanswered or require further investigation.

5.1 Main findings

In response to the first research question, "How do German Twitter users express trust or distrust in governmental institutions regarding their responses to climate change and COVID-19 in their online discourse?", the findings reveal the following insights: German Twitter users express significant concerns regarding climate change and COVID-19, indicating a strong expectation for the government to play a crucial role in addressing these global challenges. The focus on government measures and policies suggests that users perceive the government as a key actor responsible for tackling these crises effectively. However, the prevalence of negative sentiments and dissatisfaction among users indicates a lack of trust in the government's actions. This is in line with the theory that suggested that online discourse on climate change and COVID-19 is characterized by skepticism and distrust. The expressions of distrust are further underlined through the presence of humor, sarcasm, and irony, which users retort to as a means of expressing their opinion in a satirical or mocking manner. In conclusion, these findings shed light on concerns, expectations, and expressions of distrust among German Twitter users regarding the government's responses to climate change and COVID-19, highlighting the importance of fostering trust and effective communication to address these pressing challenges in the future.

The second research question was: "How do the expressions of trust or distrust in the government in German Twitter discussions differ between climate change and COVID-19?" The findings indicate that the attention given to specific topics varies between climate change and COVID-19 discussions. COVID-19-related measures receive more focus than climate change-related measures, which could be due to the immediate and ongoing impact of the pandemic on society. This

suggests that the urgency and immediacy of a crisis impact the prominence of topics within online discourse, as it adds to the observation that users expect instantaneous effective policies to be implemented by the government. Furthermore, the emotional tones expressed in tweets differ between climate change and COVID-19 discussions. Climate change-related tweets demonstrate a higher frequency of hopelessness, reflecting a belief in the powerlessness of individuals to mitigate climate change and a lack of trust in the government's ability to address it effectively. On the other hand, COVID-19 discussions revolve more around distrust and allegations of dishonesty, indicating a lack of trust in the government's transparency and information sharing. The perceived government characteristics of "inability" and "lack of integrity" are common to both climate change and COVID-19 discussions. This suggests a prevailing sentiment that the government is not equipped to effectively address climate change, while also resorting to questionable tactics during the COVID-19 crisis. However, positive perceptions of the government's ability also emerge, indicating that some users acknowledge its effectiveness in certain areas.

The last question this study aimed to answer was "Do the likes and retweets on Twitter posts about COVID-19 and climate change serve as proxies for the Twitter users' prevalent opinion on the topic?" The results indicate that they can serve as partial proxies for the prevalent opinion of Twitter users towards the government's response to climate change and COVID-19. However, it is important to note that there are exceptions where highly liked and retweeted tweets diverge from the prevailing views, indicating a diversity of opinions within the online discourse. These findings highlight that public opinion on critical issues like climate change and COVID-19 is complex and ever-changing. They emphasize the challenge of capturing the prevailing attitudes through a static view, as opinions fluctuate over time. It is important to recognize the dynamic and multifaceted nature of public sentiment, which makes it difficult to capture a single, definitive perspective on these issues.

5.2 Theoretical contributions

The analysis of tweets on climate change and COVID-19 in German Twitter discourse contributes theoretically by deepening the understanding of trust and distrust in government and emotional responses and sentiments.

The findings of this study offer valuable insights into the expression of trust and distrust in governmental institutions during times of crisis. By analyzing user attitudes, expectations, and perceptions of government actions, a deeper understanding of the intricate dynamics underlying trust and distrust is gained. The analysis aligns with previous research that identified certain attributes of trustees, such as ability, benevolence, integrity, reliability, and transparency. It reveals that these attributes are frequently addressed in tweets as users express their attitudes toward the government. Moreover, the study establishes that these factors play a significant role in influencing whether users trust or distrust the government. This research illuminates the nuanced interplay between user perceptions and the factors that shape their trust or lack thereof in governmental institutions during crisis situations.

Secondly, the study uncovers the prevalence of negative sentiments, dissatisfaction, and frustration with the government's efforts, providing valuable insights into the emotional responses of individuals towards government actions during crises. This theoretical contribution extends beyond the conventional understanding of emotions such as joy, gratitude, anger, and sadness identified in existing literature. The study highlights the role of a broader spectrum of emotionality, including humor, sarcasm, irony, and even more extreme expressions like insults and extreme assumptions, in shaping trust and distrust dynamics. By capturing these differing emotional responses in online discourse, the research expands the understanding of the multifaceted ways in which individuals express their attitudes and perceptions towards the government. This comprehensive examination of emotions adds a new dimension to the existing literature on trust and distrust, providing a more nuanced understanding of how various forms of emotionality contribute to shaping public opinion during crises.

In conclusion, the analysis of German Twitter discourse on climate change and COVID-19 enriches the understanding of trust and emotional dynamics. These findings can have broader implications for policymakers, researchers, and society, informing decision-making, crisis communication, and public engagement strategies in times of crisis.

5.3 Practical recommendations

To effectively address the challenges of misinformation, lack of trust, and negative online behavior, governments, social media platforms, and users must take specific actions.

For governments, it is crucial to prioritize transparency and open communication to rebuild public trust. Enhancing crisis management capabilities is essential to effectively tackle climate change and COVID-19 concerns. They should actively listen to public feedback and integrate it into decision-making processes. Governments could also engage with social media platforms to shape accurate narratives and provide reliable information. Collaboration with social media platforms for data sharing and responsible information dissemination is vital.

Social media platforms should implement responsible content moderation measures to combat harmful content, including misinformation, hate speech, and personal attacks. Promoting the exposure of diverse perspectives through thoughtful algorithm design is important to foster inclusive and balanced discussions. Furthermore, creating spaces for meaningful public engagement and dialogue enables users to express concerns and ask questions. Lastly, establishing collaborative relationships with governments allows for the exchange of insights, guidelines, and best practices for responsible information sharing.

For social media users, being critical when consuming information is key. Verifying the credibility of sources before accepting them as accurate is essential. In addition, avoiding echo chambers and actively seeking out diverse viewpoints fosters a more comprehensive understanding of complex issues. Moreover, maintaining respectful and constructive online behavior contributes to a positive and respectful online environment, and recognizing the limitations and biases of social

media as an information source and supplementing it with information from multiple sources ensures a broader perspective.

By collectively implementing these recommendations, governments, social media platforms, and users can contribute to fostering trust, enriching public discourse, and effectively addressing pressing challenges such as climate change, COVID-19, and other critical societal issues.

5.4 Study limitations

The present study encountered several limitations that must be considered when interpreting the results and implications of the research findings. One limitation pertained to the presence of suspended Twitter accounts within the dataset, resulting in the unavailability of external media, such as photos or articles referenced by these accounts. This lack of access could have impacted the analysis of the tweets, as the media might have provided valuable context or information beyond the textual content alone. Consequently, important aspects related to the meaning and sentiment of the tweets might have been overlooked.

Additionally, one limitation of the study was that the tweets collected in German language could also include tweets about the Austrian government, not only the German one. This is because Austria and Germany share a common language but have different political systems and contexts. In this study, only the tweets about the German government were relevant. If it was obvious from the tweet content that they referred to the Austrian government, they were removed from the dataset. However, it could be possible that some tweets were ambiguous and remained in the dataset, even though they did not refer to the intended government. For example, some tweets might have used the pronoun "Sie" (they/them) to refer to either government, but without specifying which one. This could affect the validity and reliability of the study results.

Furthermore, the study encountered constraints associated with the use of the free Twitter API for data collection. This API restricts access to tweets posted within the past seven days, thereby limiting the temporal scope and diversity of the collected data. A broader time span would have

captured greater variations in tweet sentiment, topics, as well as significant events and trends that could have influenced the research outcomes. Consequently, the findings may not be generalizable or representative of the wider Twitter population or sentiment.

Another limitation emerged from the inability to access the number of followers for each user who posted tweets relevant to the research topic. The number of followers serves as a vital indicator of user popularity and influence, providing insights into the potential reach and impact of each tweet. However, due to the limitations of the free Twitter API, only data on likes and retweets could be collected, serving as measures of engagement but not reflecting the audience size. Obtaining follower counts would have required utilizing a separate API endpoint and manually retrieving user IDs from the collected tweets. Given the substantial volume of tweets and the API's rate limits, this approach was impractical. Consequently, the study relied on likes and retweets as proxies for popularity, introducing potential bias and errors into the analysis.

Lastly, the inaccessibility of certain articles linked or referenced in the tweets posed an additional limitation. Access to these articles required subscriptions to the respective magazines or websites, which was not feasible within the scope of the study. Consequently, the analysis might have overlooked essential context or information that could have influenced the interpretation of the tweets. A more comprehensive and detailed study would necessitate access to all cited or referenced sources to ensure a thorough understanding of the arguments and perspectives presented by the authors and users.

In conclusion, while the present study contributes valuable insights, it is crucial to acknowledge and consider the limitations encountered. The unavailability of external media from suspended accounts, the ambiguity in German language tweets, the constraints of the free Twitter API, the inability to access user follower counts, and the inaccessibility of referenced articles all have implications for the interpretation and generalizability of the research findings.

5.5 Suggestions for future research

Although the existing research questions have been mostly answered, there is still a need for further investigation to delve deeper into the topic. Future research endeavors can explore various perspectives to expand understanding of it. It would be intriguing to consider widening the temporal scope of the study, encompassing a larger timeframe to gain insights into the evolution of the phenomenon. Additionally, adopting an international approach by comparing the public discourse surrounding governments in different countries could provide valuable comparative insights. Moreover, expanding the crisis context beyond its current boundaries and exploring its implications in other domains or topics would contribute to a more comprehensive understanding.

By addressing the previously identified limitations, future research can also ensure a more robust and thorough analysis: Firstly, developing techniques to retrieve and incorporate missing media content from suspended Twitter accounts would greatly improve the understanding of tweets. By considering all visual elements and external sources beyond textual content, a more comprehensive analysis can be conducted. Secondly, advanced language processing algorithms should be explored to enhance the accuracy of differentiating between German language tweets related to the German and Austrian governments. This would ensure that future research accurately reflects the intended government being discussed. In addition, investigating alternative data collection methods or seeking advanced API access would enable the capture of a broader time span and increase the diversity of collected data. This would result in a more comprehensive understanding of tweet sentiment, topics, and significant events, enhancing the generalizability of research findings. Furthermore, devising approaches to obtain follower counts within the limitations of the Twitter API or utilizing alternative data sources would provide valuable insights into the popularity and influence of tweets. Understanding the reach and impact of individual tweets would contribute to a more holistic analysis, reducing potential biases. Lastly, exploring strategies such as collaborations with publishers or employing advanced natural language processing techniques can help overcome the inaccessibility of referenced articles. This comprehensive analysis would consider

the arguments and perspectives presented across various sources, enriching the interpretation of the research findings.

Taking all these factors into consideration, future research can provide a more comprehensive and detailed look into the subject matter. Furthermore, by e.g., broadening the context of the study to a more international one, a deeper understanding of public online discourse about different important topics in different cultural surroundings can be gained. The scope of the present study was limited due to the circumstances; however, the topic is crucial for today's society and needs to be researched further in order to be able to understand how distrust can manifest itself and be tackled effectively.

5.6 Conclusion

In summary, this study sheds light on trust and distrust in German Twitter discussions regarding climate change and COVID-19. The findings reveal widespread dissatisfaction and skepticism towards government actions, underscoring the need to grasp trust dynamics during crises, consider emotional factors, and acknowledge the impact of social media. Prioritizing transparency, improving crisis management strategies, and encouraging responsible content moderation are crucial steps in addressing these issues. However, it is essential to recognize the study's limitations, including data constraints and the scope of analysis. Further research is required to deepen the understanding of trust and distrust in online discourse. By leveraging these insights, more informed and reliable communication can be fostered in the digital era.

References

Ahadzadeh, A. S., Ong, F. S., & Wu, S. L. (2021). Social media skepticism and belief in conspiracy theories about COVID-19: the moderating role of the dark triad. *Current Psychology*, *11*(42). https://doi.org/10.1007/s12144-021-02198-1

Al-Omoush, K. S., Garrido, R., & Cañero, J. (2023). The impact of government use of social media and social media contradictions on trust in government and citizens' attitudes in times of crisis. *Journal of Business Research*, *159*, 113748. https://doi.org/10.1016/j.jbusres.2023.113748

Arlt, D., Hoppe, I., Schmitt, J. B., De Silva-Schmidt, F., & Brüggemann, M. (2017). Climate engagement in a digital age: Exploring the drivers of participation in climate discourse online in the context of COP21. *Environmental Communication*, *12*(1), 84–98. https://doi.org/10.1080/17524032.2017.1394892

Baxter, G., Marcella, R., & Walicka, A. (2019). Scottish citizens' perceptions of the credibility of online political "facts" in the "fake news" era. *Journal of Documentation*, *75*(5), 1100–1123. https://doi.org/10.1108/jd-10-2018-0161

Beigi, G., Tang, J., Wang, S., & Liu, H. (2016). Exploiting emotional information for trust/distrust prediction. *Proceedings of the 2016 SIAM International Conference on Data Mining*. https://doi.org/10.1137/1.9781611974348.10

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, *2*(2), 8–14. Sciencedirect. https://doi.org/10.1016/j.npls.2016.01.001

Bigley, G. A., & Pearce, J. L. (1998). Straining for shared meaning in organization science: Problems of trust and distrust. *Academy of Management Review*, *23*(3), 405–421. https://doi.org/10.5465/amr.1998.926618

Bodenhausen, G. V., Sheppard, L. A., & Kramer, G. P. (1994). Negative affect and social judgment: The differential impact of anger and sadness. *European Journal of Social Psychology*, *24*(1), 45–62. https://doi.org/10.1002/ejsp.2420240104

Cameron, L., Rocque, R., Penner, K., & Mauro, I. (2021). Public perceptions of Lyme disease and climate change in southern Manitoba, Canada: Making a case for strategic decoupling of

climate and health messages. *BMC Public Health*, *21*(1). https://doi.org/10.1186/s12889-021-10614-1

Capiola, A., Alarcon, G. M., Gibson, A. M., Jessup, S. A., & Izz Aldin Hamdan. (2022, January 1). The same or different? Investigating whether trust and distrust are orthogonal constructs or span a continuum. *Proceedings of the Annual Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2022.716

Catalano, T., & Wang, P. (2021). Social media, populism, and COVID-19: Weibo users' reactions to anti-Chinese discourse. *Studies in Media and Communication*, *9*(2), 58. https://doi.org/10.11114/smc.v9i2.5388

Chauhan, A., & Hughes, A. L. (2020). Trustworthiness perceptions of social media resources named after a crisis event. *Proceedings of the ACM on Human-Computer Interaction*, *4*(CSCW1), 1–23. https://doi.org/10.1145/3392849

Cheng, Y., & Chen, Z. F. (2020). Encountering misinformation online: Antecedents of trust and distrust and their impact on the intensity of Facebook use. *Online Information Review*, *45*(2), 372–388. https://doi.org/10.1108/oir-04-2020-0130

Cho, J., & Lee, E.-H. (2014). Reducing confusion about grounded theory and qualitative content analysis: Similarities and differences. *The Qualitative Report*, *19*(32). https://doi.org/10.46743/2160-3715/2014.1028

Cho, S. E., Jung, K., & Park, H. W. (2013). Social media use during Japan's 2011 earthquake: How Twitter transforms the locus of crisis communication. *Media International Australia*, *149*(1), 28–40. https://doi.org/10.1177/1329878x1314900105

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*(1), 37–46. https://doi.org/10.1177/001316446002000104

Colquitt, J. A., LePine, J. A., Zapata, C. P., & Wild, R. E. (2011). Trust in typical and high-reliability contexts: Building and reacting to trust among firefighters. *Academy of Management Journal*, *54*(5), 999–1015. https://doi.org/10.5465/amj.2006.0241

Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, *92*(4), 909–927. https://doi.org/10.1037/0021-9010.92.4.909

Dunn, J. R., & Schweitzer, M. E. (2005). Feeling and believing: The influence of emotion on trust. *Journal of Personality and Social Psychology*, *88*(5), 736–748. https://doi.org/10.1037/0022-3514.88.5.736

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Epstein, Z., Pennycook, G., & Rand, D. (2020, April 21). Will the crowd game the algorithm? *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*. https://doi.org/10.1145/3313831.3376232

Flintham, M., Karner, C., Creswick, H., Gupta, N., Moran, S., & Bachour, K. (2018). Falling for fake news: Investigating the consumption of news via social media. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. https://doi.org/10.1145/3173574.3173950

Gallivan, M. J., & Depledge, G. (2003). Trust, control and the role of interorganizational systems in electronic partnerships. *Information Systems Journal*, *13*(2), 159–190. https://doi.org/10.1046/j.1365-2575.2003.00146.x

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, *27*(1), 51–90. https://doi.org/10.2307/30036519

Gintova, M. (2018). Use of social media in Canadian public administration: Opportunities and barriers. *Canadian Public Administration*, *1*(62). https://doi.org/10.1111/capa.12298

Goodness, R. O., Onor, K. C., Sandra, G. T., & Folarin, S. F. (2022). Twitter ban in Nigeria: A stigma to democratic governance. *PERSPEKTIF*, *11*(3), 821–828. https://doi.org/10.31289/perspektif.v11i3.7165

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, *24*(2), 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Grant, W. J., Moon, B., & Busby Grant, J. (2010). Digital dialogue? Australian politicians' use of the social network tool Twitter. *Australian Journal of Political Science*, *45*(4), 579–604. https://doi.org/10.1080/10361146.2010.517176

Haro-de-Rosario, A., Sáez-Martín, A., & del Carmen Caba-Pérez, M. (2016). Using social media to enhance citizen engagement with local government: Twitter or Facebook? *New Media & Society*, *20*(1), 29–49. https://doi.org/10.1177/1461444816645652

Harrison McKnight, D., & Chervany, N. L. (2001). Trust and distrust definitions: One bite at a time. *Trust in Cyber-Societies*, 27–54. https://doi.org/10.1007/3-540-45547-7_3

Heuer, H., & Breiter, A. (2018). Trust in news on social media. *Proceedings of the 10th Nordic Conference on Human-Computer Interaction - NordiCHI '18*. https://doi.org/10.1145/3240167.3240172

Hoffman, A. J., McGuire, L., Mathews, C. J., Joy, A., Law, F., Drews, M., Rutland, A., Hartstone-Rose, A., Winterbottom, M., & Kelly Lynn Mulvey. (2023). The importance of trust in the relation between COVID-19 information from social media and well-being among adolescents and young adults. *PLOS ONE*, *18*(3), e0282076–e0282076. https://doi.org/10.1371/journal.pone.0282076

Holland, M., Dutton, M., & Glover, S. (2021). How it's done: Search tools and techniques for major bibliographic databases. *Journal of Paramedic Practice*, *13*(5), 210–213. https://doi.org/10.12968/jpar.2021.13.5.210

Holmes, J. G. (1991). Trust and the appraisal process in close relationships. In *Advances in Personal relationships: A Research Annual* (Vol. 2, pp. 57–104). Jessica Kingsley Publishers.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Hubert, R. B., Estevez, E., Maguitman, A., & Janowski, T. (2020). Analyzing and visualizing government-citizen interactions on Twitter to support public policy-making. *Digital Government: Research and Practice*, *1*(2), 1–20. https://doi.org/10.1145/3360001

Hughes, M., Griffith, J. A., Byrne, C. L., Nei, D., Beechly, L. H., Zeni, T. A., Shipman, A. S., Connelly, S., & Mumford, M. D. (2015). *Examining online communication*. https://doi.org/10.4018/978-1-5225-0007-0.ch012

Jamal, M. A., & Shanab, E. A. (2016). The influence of open government on e-government website: The case of Jordan. *International Journal of Electronic Governance*, *8*(2), 159. https://doi.org/10.1504/ijeg.2016.078131

Jang, S. M., & Hart, P. S. (2015). Polarized frames on "climate change" and "global warming" across countries and states: Evidence from Twitter big data. *Global Environmental Change*, *32*, 11–17. https://doi.org/10.1016/j.gloenvcha.2015.02.010

Koteyko, N., Jaspal, R., & Nerlich, B. (2012). Climate change and "climategate" in online reader comments: A mixed methods study. *The Geographical Journal*, *179*(1), 74–86. https://doi.org/10.1111/j.1475-4959.2012.00479.x

Krippendorff, K. (2019). *Content analysis: An introduction to its methodology*. https://doi.org/10.4135/9781071878781

Lehtonen, M., Prades, A., Espluga, J., & Arapostathis, S. (2022). Introduction to the special issue "Trust, mistrust, distrust, and trust-building in the nuclear sector: Historical and comparative experience from Europe." *Journal of Risk Research*, *25*(5), 547–561. https://doi.org/10.1080/13669877.2022.2067892

Lewicki, R. J., McAllister, D. J., & Bies, R. J. (1998). Trust and distrust: New relationships and realities. *The Academy of Management Review*, *23*(3), 438–458. https://doi.org/10.2307/259288

Liu, M., & Wang, C. (2010). Explaining the influence of anger and compassion on negotiators' interaction goals: An assessment of trust and distrust as two distinct mediators. *Communication Research*, *37*(4), 443–472. https://doi.org/10.1177/0093650210362681

Mabić, M., & Gašpar, D. (2018). Open Government, social media and Western Balkan countries. *Central European Public Administration Review*, *16*(2), 23–44. https://doi.org/10.17573/cepar.2018.2.02

Mari, S., Gil de Zúñiga, H., Suerdem, A., Hanke, K., Brown, G., Vilar, R., Boer, D., & Bilewicz, M. (2021). Conspiracy theories and institutional trust: Examining the role of uncertainty avoidance and active social media use. *Political Psychology*, *43*(2). https://doi.org/10.1111/pops.12754

Mathews, C. J., McGuire, L., Joy, A., Law, F., Winterbottom, M., Rutland, A., Drews, M., Hoffman, A. J., Mulvey, K. L., & Hartstone-Rose, A. (2021). Assessing adolescents' critical health literacy: How is trust in government leadership associated with knowledge of COVID-19? *PLOS ONE*, *16*(11), e0259523. https://doi.org/10.1371/journal.pone.0259523

Matthews, P. (2015). Why are people skeptical about climate change? Some insights from blog comments. *Environmental Communication*, *9*(2), 153–168. https://doi.org/10.1080/17524032.2014.999694

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *The Academy of Management Review*, *20*(3), 709–734. https://doi.org/10.2307/258792

McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia Medica*, *22*(3), 276–282. https://doi.org/10.11613/bm.2012.031

Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market research: The dynamics of trust within and between organizations. *Journal of Marketing Research*, *29*(3), 314. https://doi.org/10.2307/3172742

Myers, C. D., & Tingley, D. (2016). The influence of emotion on trust. *Political Analysis*, *24*(4), 492–500. https://doi.org/10.1093/pan/mpw026

OECD. (2022). *Trust in government - OECD*. OECD. https://www.oecd.org/governance/trust-in-government/

Park, M. J., Kang, D., Rho, J. J., & Lee, D. H. (2015). Policy role of social media in developing public trust: Twitter communication with government leaders. *Public Management Review*, *18*(9), 1265–1288. https://doi.org/10.1080/14719037.2015.1066418

Perry, J. (2021, July 20). *Trust in public institutions: Trends and implications for economic security | DISD*. United Nations. https://www.un.org/development/desa/dspd/2021/07/trust-public-institutions/

Reimann, M., Hüller, C., Schilke, O., & Cook, K. S. (2022). Impression management attenuates the effect of ability on trust in economic exchange. *Proceedings of the National Academy of Sciences*, *119*(30). https://doi.org/10.1073/pnas.2118548119

Saunders, M. N., Dietz, G., & Thornhill, A. (2014). Trust and distrust: Polar opposites, or independent but co-existing? *Human Relations*, *67*(6), 639–665. https://doi.org/10.1177/0018726713500831

Schmid-Petri, H., Bürger, M., Schlögl, S., Schwind, M., Mitrović, J., & Kühn, R. (2023). The multilingual Twitter-discourse on vaccination in Germany during the COVID-19 pandemic. *Media and Communication*, *11*(1), 293–305. https://doi.org/10.17645/mac.v11i1.6058

Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). An integrative model of organizational trust: Past, present, and future. *Academy of Management Review*, *32*(2), 344–354. https://doi.org/10.5465/amr.2007.24348410

Schwarz, N. (2010). Feelings-as-information theory. *Handbook of Theories of Social Psychology*, *1*, 289–308. https://doi.org/10.4135/9781446249215.n15

Sharman, A. (2014). Mapping the climate skeptical blogosphere. *Global Environmental Change*, *26*, 159–170. https://doi.org/10.1016/j.gloenvcha.2014.03.003

Silén, C., Karlgren, K., Hjelmqvist, H., Meister, B., Zeberg, H., & Pettersson, A. (2022). Three-dimensional visualisation of authentic cases in anatomy learning – An educational design study. *BMC Medical Education*, *22*(1). https://doi.org/10.1186/s12909-022-03539-9

Surya, I., Nurmiyati, N., Suranto, S., & Hasanah, N. (2021). Analysis of the implementation of smart governance through Twitter in local governments in Indonesia. *Jurnal Administrasi Publik : Public Administration Journal*, *11*(2), 169–184. https://doi.org/10.31289/jap.v11i2.5596

Thielsch, M. T., Meeßen, S. M., & Hertel, G. (2018). Trust and distrust in information systems at the workplace. *PeerJ*, *6*, e5483. https://doi.org/10.7717/peerj.5483

Valkenburg, P. M., Peter, J., & Walther, J. B. (2016). Media effects: Theory and research. *Annual Review of Psychology*, *67*(1), 315–338. https://doi.org/10.1146/annurev-psych-122414-033608

van Prooijen, J.-W., Spadaro, G., & Wang, H. (2022). Suspicion of institutions: How distrust and conspiracy theories deteriorate social relationships. *Current Opinion in Psychology*, *43*, 65–69. https://doi.org/10.1016/j.copsyc.2021.06.013

Wang, Y., & Mark, G. (2013). Trust in online news. *Proceedings of the 2013 Conference on Computer Supported Cooperative Work - CSCW '13*. https://doi.org/10.1145/2441776.2441843

Wigand, F. D. L. (2010). *Twitter in government: Building relationships one tweet at a time*. IEEE Xplore. https://doi.org/10.1109/ITNG.2010.171

Zhang, Y., Gaggiano, J. D., Yongsatianchot, N., Suhaimi, Nurul M, Kim, M., Sun, Y., Griffin, J., & Parker, A. G. (2023). *What do we mean when we talk about trust in social media? A systematic review*. https://doi.org/10.1145/3544548.3581019

Zhang, Y., Suhaimi, N., Yongsatianchot, N., Gaggiano, J. D., Kim, M., Patel, S. A., Sun, Y., Marsella, S., Griffin, J., & Parker, A. G. (2022, April 27). Shifting trust: Examining how trust and distrust emerge, transform, and collapse in COVID-19 information seeking. *CHI Conference on Human Factors in Computing Systems*. https://doi.org/10.1145/3491102.3501889

Zhang, Y., & Wildemuth, B. (2009). *Qualitative analysis of content* (pp. 1–12). In B. M. Wildemuth, Ed., Applications of Social Research Methods to Questions in Information and Library Science. https://www.ischool.utexas.edu/~yanz/Content_analysis.pdf

Appendix A: Codebook

Table 1A

Codebook

Category	Subcategory (if applicable)	Code	Explanation of the code
Themes		Pandemic	This code is assigned when the content discusses or addresses the global outbreak or widespread occurrence of the COVID-19 virus.
		Vaccination	This code is assigned when the content focuses on vaccines or vaccination efforts in the context of preventing or combating COVID-19.
		Climate change	This code is assigned when the content addresses or discusses climate change in any capacity. It includes topics related to the broader issue of climate change.
		Energy crisis	This code is assigned when the content discusses the energy crisis in relation to climate change. It covers topics such as the scarcity or mismanagement of energy resources and its impact on climate change.
		Taxes	This code is assigned when the content explores taxes in the context of climate change or COVID-19.
		News media	This code is assigned when the content relates to the role of news media. It encompasses discussions on media coverage, framing, bias, or public opinion influenced by media.

Category	Subcategory (if applicable)	Code	Explanation of the code
		Measures/Policy	This code is assigned when the content focuses on measures or policies. It includes discussions on governmental actions, regulations, international agreements, or initiatives aimed at addressing them.
		Authority	This code is assigned when the content examines the role of authority figures or institutions. It encompasses discussions on agencies, scientific organizations, or influential individuals involved in the discourse.
		Economy	This code is assigned when the content discusses any economic aspects of the crises. It includes topics such as the impact they have on economies or economic incentives.
Emotional tones	Positive	Joy	This code is assigned when the content expresses a sense of happiness or delight.
		Gratitude	This code is assigned when the content conveys appreciation or thankfulness.
		Satisfaction	This code is assigned when the content indicates a feeling of contentment or fulfillment.
		Hope	This code is assigned when the content expresses optimism or a positive outlook for the future.
	Negative	Hopelessness	This code is assigned when the content reflects a sense of despair or lack of hope.

Category	Subcategory (if applicable)	Code	Explanation of the code
		Anger	This code is assigned when the content exhibits strong feelings of anger or frustration.
		Disdain	This code is assigned when the content demonstrates a feeling of contempt or scorn.
		Sadness	This code is assigned when the content expresses a sense of sadness or sorrow.
		Discontent/Disappointment	This code is assigned when the content reflects dissatisfaction or disappointment.
		Fear	This code is assigned when the content conveys a sense of fear or apprehension.
	Neutral	Neutral	This code is assigned when the content lacks any strong emotional tone or bias.
		Humor	This code is assigned when the content contains elements of humor or comedic expression.
		Sarcasm/Irony	This code is assigned when the content employs sarcasm or irony to convey a message.
	Unreasonableness	Extreme standpoints	This code is assigned when the writer presents having extreme or radical viewpoints.
		Extremist assumptions	This code is assigned when the content includes assumptions or beliefs associated about someone/something having extremist ideologies.
		Insults/Personal attacks	This code is assigned when the content involves insults or personal attacks towards individuals or groups.

Category	Subcategory (if applicable)	Code	Explanation of the code
		Sexism	This code is assigned when the content exhibits prejudice, discrimination, or bias based on gender.
Justification strategies	Existence denial	COVID-19 denial	This code is assigned when the writer denies the existence of the COVID-19 pandemic.
		Climate change denial	This code is assigned when the writer denies the existence of the climate change.
	Attitude towards policies	COVID-19 policy (Start)	This code is assigned when the user expresses support for the policies implemented at the start of the pandemic, to combat COVID-19.
		COVID-19 policy (End)	This code is assigned when the user expresses support for the policies implemented at the end of the pandemic, where the policies were abolished again.
		Climate change policy	This code is assigned when the user expresses support for the policies implemented to combat climate change.
		Government respect	This code is assigned when the content demonstrates a positive regard or admiration towards the government or governmental institutions.
		External comparison	This code is assigned when the content compares the government of Germany to those of other countries.

Category	Subcategory (if applicable)	Code	Explanation of the code
Perceived government characteristics	Positive	Ability	This code is assigned when the content highlights the government's capability, competence, or effectiveness in carrying out its duties and responsibilities.
		Benevolence	This code is assigned when the content portrays the government as having good intentions, acting in the best interests of the people, and demonstrating kindness or goodwill.
		Integrity	This code is assigned when the content emphasizes the government's adherence to ethical principles, honesty, and moral uprightness.
		Reliability	This code is assigned when the content suggests that the government is dependable and consistent in fulfilling its commitments and promises.
		Transparency	This code is assigned when the content highlights the government's openness, accountability, and willingness to share information with the public, ensuring clear visibility into its actions and decision-making processes.
	Negative	Inability	This code is assigned when the content implies that the government lacks the necessary skills, competence, or resources to effectively perform its duties or address the needs of the people.

Category	Subcategory (if applicable)	Code	Explanation of the code
		Malevolence	This code is assigned when the content portrays the government as having ill intentions, acting with harmful intent, or engaging in malicious behavior towards the people or specific groups.
		Lack of integrity	This code is assigned when the content suggests that the government lacks moral principles, engages in unethical practices, or demonstrates dishonesty.
		Unreliability	This code is assigned when the content implies that the government is inconsistent or fails to deliver on its commitments.
		Lack of transparency	This code is assigned when the content indicates that the government is not forthcoming with information, lacks openness or accountability, or operates in a manner that restricts public access to important decision-making processes or relevant data.

Note. All the codes are coded binary with 1 = yes and 0 = no or unclear. Only for attitude towards policies it is 1 = pro-policy and 0 = anti-policy or unclear. Unless otherwise specified, the codes were applied to both datasets, the one about climate change and the one about COVID-19.

Appendix B: Literature search log

Table 1B

Literature search log

Date	Source	Search string	Total hits	Remarks
03.04.2023	Scopus	trust OR confidence OR reliance OR faith AND "governmental institutions" OR "public institutions" OR "state institutions" OR "political institutions"	1.900	Search results were sorted by relevance but a brief look at them showed that they were not that relevant to my research questions
03.04.2023	Scopus	trust* OR confidence OR attitude OR faith AND government* OR politic*	135.201	Too broad and not relevant
03.04.2023	Scopus	trust* AND government* AND “social media”	793	Results were sorted by relevance and produced multiple relevant articles. Furthermore, I browsed through related documents and references used in relevant articles I found to find more articles.
03.04.2023	PsycINFO	(trust OR mistrust OR distrust) AND government AND "social media"	107	Maybe a little to specific, however, I did find some relevant articles
03.04.2023	PsycINFO	(trust OR mistrust OR distrust) AND government	After filtering for scientific journals and links to full text: 2.542	Too broad, a brief look over the results showed no relevant articles
08.04.2023	Scopus	(trust OR mistrust OR distrust) AND government* AND (crisis OR COVID-19 OR corona OR pandemic OR climate*)	3.911	Quite broad, but after filtering for relevance a few good articles were found

Date	Source	Search string	Total hits	Remarks
08.04.2023	Scopus	((trust OR mistrust OR distrust) AND government* AND (crisis OR COVID-19 OR corona OR pandemic OR climate*) AND (LIMIT-TO (DOCTYPE, “re”))	227	Looking for literature reviews in specific, I found some relevant reviews
08.04.2023	Scopus	(trust OR mistrust OR distrust) AND government* AND (LIMIT-TO (DOCTYPE, “re”)	2.657	Found some relevant articles
20.04.2023	Scopus	(trust OR distrust) AND government* AND “social media”	802	Found a few good articles and looked through their references, through which I found better ones
15.05.2023	Scopus	(trust OR distrust) AND Twitter	1.023	Results were too unspecific and not relevant
15.05.2023	Scopus	(trust OR distrust) AND Twitter AND government*	159	Found some really good articles that also mentioned other relevant articles
20.05.2023	Scopus	“Content analysis” AND “social media”	6.141	Some relevant articles but overall, too broad
20.05.2023	Scopus	“Content Analysis” AND “social media” AND Twitter	1.725	A bit more specific and gave me some relevant results
20.05.2023	Google Scholar	Content analysis characteristics	Far too many	A very very general and explorative search, but it did give me some good widely used sources
22.06.2023	Scopus	Twitter AND relation* AND government*	404	A few articles were relevant and again led me to other good sources
22.06.2023	Scopus	Twitter AND relationship AND government	239	Similar sources to the search string before but it gave me more specific ones
23.06.2023	Scopus	“Online discourse” AND “climate change” OR (covid OR pandemic OR corona*)	65	Very specific search but the results were relevant to my study, and I could find more

Date	Source	Search string	Total hits	Remarks
				good articles by looking at the references on others again
24.06.2023	Scopus	Twitter AND “climate change” OR (covid OR pandemic OR corona*)	4.290	A lot of results but I found some nice articles on the first pages
26.06.2023	Google Scholar	Cohens kappa inter rater reliability and interpretation	27.000	Way too many results but I was just looking for general guidelines for usage and interpretation, so this was enough to find them