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Climate Activism Online: An Analysis of Twitter Discourse during the School Strike for Climate in Norway in 2019

What dominant narratives, sentiments, and key themes emerged in the Twitter discourse surrounding Norway's School Strike for Climate in 2019?

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MA Energy, Environment & Society

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Abstract:

This thesis examines the discourse of the 2019 Norwegian school strike for climate using Twitter to understand broader Norwegian sentiments on climate change. Leveraging the Climate Discourse Alignment Theory (CDAT)—a synthesis of Agenda-Setting, Framing, and Social Movement theories—the research delves into the nuances of climate discourse. The findings of this study identify dominant narratives centered on the role of government in climate action and the importance of science in the debate, mirroring the wider Norwegian acknowledgment of climate change's severity and the call for decisive action. This is further supported by CICERO's survey findings. The study acknowledges limitations such as generalizability, potential Twitter user bias, and temporal boundaries. The unique socio-cultural backdrop of Norway may also affect the global applicability of the results. Yet, the discourse on Twitter around the school strike provides a window into Norway's collective climate consciousness. Future research directions include a longitudinal study of Twitter sentiments, cross-national comparisons, and an in-depth look at climate skepticism. The roles of influential figures, the disparity between online and offline sentiments, and the impact of visual media on Twitter also warrant further exploration. Grounded in the CDAT framework, this thesis emphasizes that Twitter not only mirrors societal views on climate change but also influences them, highlighting the platform's importance in understanding the interplay between digital conversations and real-world beliefs.

Sammendrag:

Denne studien utforsker omtalen av den norske skolestreiken for klimaet i 2019 på Twitter. Målet er å forstå de dominerende holdningene til klimaendringer i Norge. Ved hjelp av Klimadiskursens Justeringsteori (CDAT) – en tilnærming som kombinerer agenda-setting, Framing og teorier om sosiale bevegelser – dykker studien ned i klimadiskursens kompleksitet. Den identifiserer nøkkelhistorier preget av en følelse av hastverk, kritikk og aktivisme, som speiler Norges generelle anerkjennelse av alvoret med klimaendringene og behovet for hurtige tiltak. Disse observasjonene støttes av funn fra CICERO's undersøkelse. Det er viktig å merke seg studiens begrensninger, som inkluderer generaliserbarhet av funn, potensiell skjevhet blant Twitter-brukere, og tidsbegrensninger. Norges spesifikke kulturelle og sosiale kontekst kan også påvirke funnenes relevans på en global skala. Til tross for disse begrensningene gir Twitter-diskusjonen verdifull innsikt i norsk klimabevissthet. For fremtidig forskning kan temaer som tidsseriestudier av Twitter-meninger, sammenligninger mellom land, og en grundig undersøkelse av klimaskepsis være aktuelle. Rollene til nøkkelpersoner, skillet mellom online og offline holdninger, og betydningen av visuell kommunikasjon på Twitter er alle verdige emner for videre forskning. Basert på CDAT-rammeverket fremhever denne studien at Twitter ikke bare gjenspeiler, men også påvirker samfunnets perspektiv på klimaendringer. Dette bekrefter plattformens sentrale rolle i å dekode hvordan digitale samtaler former reelle oppfatninger.

Acknowledgments

Starting my journey at the University of Stavanger (UiS) was like stepping into a whole new world. Just when I was beginning to navigate my way through the early part of my bachelor's program, the second semester dealt me a surprising hand: a diagnosis of Multiple Sclerosis (MS) at the young age of 19. This twist wasn't just an academic challenge; it reshaped my personal narrative as well.

There have been days filled with uncertainty, and questions, but they've been countered by those of faith, determination, hope, and an unbreakable spirit. And for that I am immensely grateful to my parents who have been the pillars of my life and my greatest source of strength. Your unconditional love, unwavering support, and endless sacrifices have shaped me into who I am today. Mamma and Baba, I dedicate this thesis to you, because you have seen me cry about it the most.

To my brothers Ali and Haider, my confidants and partners in mischief: words fall short when I try to express the depth of my gratitude. Your relentless faith in me, even on days when I wavered, has been my rock. The laughter we've shared, the late-night chai sessions, and the memories we've created have been my refuge during this journey. You both remind me daily of the bond we share and the power of sibling love.

And to my dearest most loveliest, inspiring, intelligent and beautiful best friends: Your friendship and unconditional love have been everything to me. Having you guys around has been my calm during the stormy days. From those morning pep-talks to class (you know who you are) to those random FaceTime checks just to make sure I hadn't become part of my couch, you've been there. Seriously, I can't thank you enough.

…Sitting here and writing this, my heart swells with gratitude and a bit of disbelief. Who would have imagined that the 19-year-old coming to terms with an MS diagnosis would soon be on the brink of earning a master's degree? Life is full of surprises, isn't it. *sips tea*

Dedication

"This thesis was a long journey that has finally come to an end. To my family and friends, I dedicate this thesis as a token of my gratitude. Your unconditional love, support, encouragement, and belief in me have been instrumental in this achievement. I am truly fortunate to have such incredible individuals in my life who have consistently stood by my side, inspiring me to reach new heights. Thank you from the bottom of my heart."

– Mahnoor Raja

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List of Abbreviations

API - Application Programming Interface

CDAT - Climate Discourse Alignment Theory

FFF – Fridays For Future

FRP – Fremskrittspartiet (Progress Party)

IPCC - Intergovernmental Panel on Climate Change

GHG – Green House Gases

NPD - Norwegian Petroleum Directorate

OM – Opinion Mining

SA – Sentiment Analysis

SMP – Social Media Platform

UNFCC - United Nations Framework Convention on Climate Change

Chapter 1: Introduction

As the consequences of climate change prevail, there is a growing body of literature studying the role of social media platforms (SMPs) as a central tool for public discourse where environmental advocates raise awareness, inspire action, and mobilize communities (Chen et al., 2022). According to Rosenbaum and Bouvier et al. (2020), digital technologies, such as SMPs, have significantly transformed how people communicate. They have revolutionized how people obtain and discuss information and knowledge and involvement in social and political issues. While technology has always played a central role in contemporary social movements, the advent of SMPs has brought about profound changes in the nature of activism (Rosenbaum & Bouvier, 2020). Currently, over 60% of the global population is now engaged with SMPs, amounting to 4.80 billion users (Chaffey, 2023; Statista, 2023). This number has grown by 150 million new users in the past year. Individuals dedicate approximately 2 hours of their daily routine to social media interactions, exchanging pictures and messages, updating their status, tweeting, favoriting, and commenting on various recently updated socially shared information (Chaffey, 2023). Due to the prevalence of SMPs and the accessibility of their data, these platforms are increasingly used as primary sources for social research.

Understanding the extent to which SMPs contribute to driving action on climate change and shaping public opinion is important for effective climate change communication and advocacy. In contemporary environmental discourse, two interrelated terms are frequently used: *'global warming'* and '*climate change'*. While global warming only refers to the rising surface temperature of the Earth, climate change, also referred to as anthropogenic climate change, includes both warming and the 'side effects' of warming, such as melting

glaciers, heavier rainstorms, or heightened occurrences of droughts. This thesis adopts the definition provided by the United Nations Framework Convention on Climate Change (UNFCCC), which defines climate change as *"a change which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and an addition to natural climate variability observed over comparable time periods"* (UNFCC, 1992). To explore how these concepts translate into real-world interactions and discussions, SMPs have emerged as valuable resources to understand the perspectives of the general populace on significant topics related to the environmental discourse.

A number of research studies focused on SMPs predominantly analyze data from Twitter[1] to examine online interactions, trends, and behaviors due to its rich source of real-time information (Abdul Reda et al., 2021; Chen et al., 2022; Fownes et al., 2018; Kirilenko & Stepchenkova, 2014; Lundgaard, 2021; Pearce et al., 2014; Segerberg & Bennett, 2011). Twitter is a popular SMP enabling posting and interaction with short communications known as *'tweets'* (See Appendix B. for definition of terms). Tweets, limited to 280 characters, can also contain photos, videos, and links. Twitter engagement can take various forms. By selecting the heart icon, users "like" a tweet to show support. Furthermore, users can retweet (RT) content to share it with their followers. When addressing or mentioning another account explicitly in a tweet, its "@username" must be included. Hashtags, denoted by the symbol "#", classify tweets and make them discoverable by a larger audience. Twitter also highlights trending topics, representing the most discussed topics or hashtags.

[1] On July 31st, 2023, the company 'Twitter' announced a name change to 'X'. For the purposes of this thesis, the author will continue to refer to 'X' by its original name, 'Twitter'.

One of the platform's key features is its user-friendly design, which enables discussion discovery and tracking. This is made feasible by its user-friendly search feature and the fact that tweets frequently appear in Google search results. Furthermore, the widespread usage of hashtags on Twitter makes it easier to acquire, categorize, and extend search parameters while collecting data. Indeed, important events, news items, and occurrences on Twitter usually focus on a single hashtag, making data retrieval simple. Twitter's API is far more open and user-friendly than other SMPs. This openness appeals to developers, resulting in a proliferation of data extraction tools, which benefits academics. Furthermore, many researchers are avid Twitter users. Their favorable personal experiences with the platform naturally urge people to study a platform with which they are already familiar.

In this context, one of Norway's leading market researchers '*IPSOS Norway*', conducts a quarterly survey on the number of Norwegian users over 18 years old on social media. According to IPSOs' *'Social Media Tracker'* report, about 1,210,000 Twitter users are counted in Norway. Of these, 28% utilize the platform daily. The data indicates that young males in the age bracket of 30-39 years represent the most frequent users, followed by males aged 18-29. The figures suggest a discernible gender preference, with Twitter appearing more favored among males than females. In comparison to the same quarter in the previous year, the platform increased by 93,000 users (IPSOS, 2021). While its active user base in Norway is smaller than other SMPs, Twitter stands out internationally as an important arena for discussion. Understanding these demographics provides a unique lens into the dynamics of online environmental discussions.

According to Boulianne et al. (2020), studies have shown that Twitter significantly contributed to the mobilization efforts of climate movements such as '*Fridays for Future*'

(FFF). The emergence of the FFF movement otherwise known as the *'school strike for climate'*, brought worldwide attention to address the climate change crisis and the urgent need for climate change action (Boulianne et al., 2020; Sabherwal et al., 2021). Starting on August 20th, 2018, Greta Thunberg the then-15-year-old Swedish activist began protesting in front of the Swedish Parliament by skipping school until the parliamentary elections on September 9th, 2018 (de Moor, De Vydt, et al., 2020). Thunberg's main objective was to demand stronger government measures to address climate change and ensure environmental issues became a top priority (World Economic Forum, 2019).

"We must change almost everything in our current societies. The bigger your carbon footprint - the bigger your moral duty. The bigger your platform - the bigger your responsibility... I want you to panic. I want you to feel the fear I feel every day. And then I want you to act... I want you to act as if our house is on fire. Because it is."

- Greta Thunberg (World Economic Forum, 2019, 0:44)

With Greta Thunberg spearheading the movement, the FFF movement quickly spread beyond Sweden's borders. Through social media under the hashtag '*#FridaysForFuture'* and extensive media coverage, the movement urged politicians to listen to science and act on it (Svensson & Wahlström, 2023). Encouraged by the overwhelming response, Thunberg committed to continuing the strike every Friday until the Swedish government took more decisive actions in line with the Paris Agreement signed in 2015, where countries set the goal to limit global warming to a maximum of 1.5° Celcius (Intergovernmental Panel on Climate Change., 2018; United Nations Framework Convention, 2015). This strike marked the beginning of a larger movement.

The year 2019 was exceptional regarding the scale and organization of mobilizations on the climate crisis. Under the slogan #FridaysForFuture, the global climate protest mobilized over 1.6 million people in March (De Vydt et al., 2019). Thirteen months after its inception, between September 20th and 27th, 2019, known as *'Global Week for Future'*, an estimated 7.6 million people participated in protests across the world (de Moor, De Vydt, et al., 2020; Svensson & Wahlström, 2023). Thunberg's stark address at the United Nations Climate Summit echoed worldwide, sparking renewed urgency for climate action and igniting global climate activism. Notably, many participants were young people voluntarily participating in street protests to demand urgent action on climate change (de Moor, De Vydt, et al., 2020; Sabherwal et al., 2021). However, despite this escalating concern and the clear message of responsibility, as illustrated in the quote above, governments worldwide have yet to enact the decisive measures necessary to mitigate the accelerating impact of climate change (Incropera, 2015). As a testament to its global reach, even countries with established environmental records and commitments to sustainable practices, such as Norway, have observed school strikes for climate.

Historically, Norway has been acknowledged as a frontrunner in climate-related initiatives. Its commitment to emission reduction objectives often surpasses many developed countries, as evidenced by its substantial financial support for climate initiatives in developing nations (Lahn, 2019; Lahn & Rowe, 2014). However, Norway's position as a top global exporter of oil and gas presents a complex dilemma (Anker, 2018; Korsnes et al., 2023). The nation faces a challenge in reconciling its ambitious climate goals with its economic dependency on fossil fuels. Over the past decade, the issuance of exploration licenses in the country has seen a marked increase. This escalation in oil and gas exploration poses environmental risks,

particularly in the context of rising carbon emissions, which counter global climate mitigation efforts.

On March 22nd, 2019, 40,000 Norwegian school children actively participated in the school strikes for climate known as *'Skolestreik for Klimaet'* in Norwegian. This strike was organized by Naturvernforbundet, supported by Changemaker, Natur og Ungdom, Besteforeldrenes Klimaaksjon, and 25 other organizations. (Naturvernforbundet, 2022; NRK, 2019). The school strike for climate had four clear objectives to urge the Norwegian government to address the climate crisis. First, it called for an end to the issuance of more extraction permits for the oil industry and the creation of new climate-friendly jobs in Norway. In early 2019, deliberations persisted within the Norwegian government about potential oil explorations in Lofoten, Vesterålen, and Senja. It is noteworthy that during this period, global climate protests, notably influenced by activists such as Greta Thunberg, emerged. Such activism arguably played a role in shaping public discourse on climate issues, evidenced by events such as the school strike for climate in Norway. Second, the Norwegian climate target should be increased, with a goal of cutting over half of the country's emissions by 2030. Third, solidarity was to be shown with the children and youth in the global south, who were being affected by the climate changes caused by our actions. This involved increased support for financing climate measures and adaptation, with a minimum annual commitment of NOK 65 billion. Lastly, the 'declaration of a climate crisis' was urged, accompanied by follow-up actions to address its impacts (Naturvernforbundet, 2022).

In cities across Norway, schoolchildren took to the streets, holding signs, singing songs, and delivering speeches to express their frustrations and concerns about the future of our planet in the face of the challenges of climate change (NRK, 2019). Nearly a year later,

the government responded by revising the climate target to encompass a reduction in emissions ranging from 50 to 55%, thereby aligning with the demands advocated for by the school strike for the climate movement. Although the primary goal of the school strike for the climate was to exert pressure on the government's climate policies, a study on news coverage revealed a significant gap in presenting the strikers' list of demands to politicians and a lack of in-depth discussion on the reasons behind the strikes (Nordahl, 2021).

During the pre-strike news coverage, a notable topic was the discussion surrounding school children who decided to skip classes and the assessment of the legitimacy of their absences. Roy Steffensen, the leader of the Norwegian Parliament's Education Committee at the time and member of the Progress Party (FrP), expressed his disapproval, stating: "Skipping school for climate reasons is wrong. Students should not be granted valid absences for skipping school," (Aftenposten, 2019). Some members of FrP went further, dismissing the movement as "hysteria" and making comments to discredit the youth (Karlsen & Vermes, 2019).

While numerous studies have investigated Norwegian attitudes towards climate change, most have primarily concentrated on traditional survey methodologies or face-to-face interviews. This has left a notable gap in understanding the dynamic and real-time discourse on digital platforms, particularly SMPs. Platforms, such as Twitter, are a rich source of spontaneous public sentiment, offering a unique perspective that may not be captured in structured surveys. This study seeks to combine a literature review, thematic analysis and sentiment analysis to uncover the dominant narratives, sentiments, and key themes that emerged on Twitter surrounding the 2019 Norwegian school strike for climate. In addition, this study seeks to compare these findings to broader Norwegian attitudes toward climate

change. By analyzing data sources such as tweets, the study will highlight prevailing attitudes towards climate change in Norway in 2019, bridging a gap in existing literature and offering a holistic view of Norway's environmental discourse during a pivotal time for environmental activism (de Moor, Uba, et al., 2020; Haugestad et al., 2021).

1.1 Research Questions

Global conversations on climate change are vast, varied, and constantly evolving. Certain events serve as focal points, drawing significant attention and igniting widespread discussion. One such event was the *'school strike for climate'* in Norway in 2019. This thesis aims to explore the predominant themes and sentiments on Twitter during Norway's school strike for climate in 2019, placing them within the context of Norwegian climate policies and attitudes toward climate change. The primary research questions (RQ's) that guides this study is as follows:

RQ1: What dominant narratives, sentiments, and key themes emerged in the Twitter discourse surrounding Norway's School Strike for Climate in 2019?

RQ2: How do Twitter views from the 2019 Norwegian School Strike for Climate align with broader Norwegian attitudes on climate change?

1.2 Research Objectives

To adequately address the research question, the main objectives of this thesis are:

1. RQI: To identify the dominant narratives, sentiments, and key themes that emerged in the Twitter discourse surrounding Norway's school strike for climate in 2019

2. RQ1: To analyze the sentiments (e.g., positive or negative) expressed in tweets during the Norwegian School Strike for Climate in 2019.

3. RQ1: To categorize and quantify the key themes in the Twitter discourse on the Norwegian School Strike for Climate 2019.

4. RQ2: To compare Twitter data's dominant narratives and sentiments with established studies or surveys on Norwegian attitudes toward climate change.

5. RQ2: To determine the extent of alignment or divergence between Twitter views on the 2019 Norwegian School Strike for Climate and broader public opinions in Norway on climate change.

1.3 Significant and relevance

This thesis addresses a gap in understanding the interplay between digital activism and broader societal attitudes, particularly in a nation such as Norway, with its unique climate-related challenges and commitments. This can offer valuable insight into the field of social

movements, as pre-existing literature on this particular digital movement is lacking. The study confines itself to the Twitter discourse surrounding the 2019 Norwegian school strike for climate, aiming to discern its alignment with the broader Norwegian attitudes during that period. Employing a qualitative approach, sentiment analysis and thematic analysis of tweets will be undertaken, and pertinent survey data will be reviewed. However, inherent limitations of this study are recognized: the dynamic nature of social media might lead to rapidly changing sentiments, and the perspectives on Twitter may not always mirror the broader Norwegian populace. Additionally, while striving for comprehensiveness, there's a possibility that certain nuances might be inadvertently missed.

This research holds implications for various stakeholders, from policymakers to environmental activists and educators in Norway, offering insights that can shape future strategies. With the world's intensified focus on climate change, underscored by events such as the Paris Agreement, understanding historical events such as the 2019 school strike becomes central to climate change communication. The subsequent sections of this paper will delve deeper into Norway's historical climate initiatives, provide a comprehensive analysis of the 2019 school strike's digital footprint, discuss findings, and draw implications, culminating in actionable recommendations. At its core, this study seeks to answer the questions: (RQ1) What dominant narratives, sentiments, and key themes emerged in the Twitter discourse surrounding Norway's School Strike for Climate in 2019? And (RQ2) How do Twitter perspectives from the 2019 Norwegian school strike for climate resonate with broader Norwegian attitudes on climate change? Through this lens, the research endeavors to bridge digital activism with societal perspectives, offering a comprehensive view of Norway's climate discourse during a pivotal phase of environmental activism.

1.4 Thesis Outline

The thesis report consists of seven primary chapters:

Chapter 2: Examines literature on Norway's climate policies, the global and Norwegian school strike for climate movement, Twitter's role in activism, and grassroots' impact on policy decisions.

Chapter 3: Introduces theories for analyzing the study's findings, focusing on social movement theory, agenda-setting theory, and framing theory.

Chapter 4: Describes the philosophical beliefs that guide the research, detailing the researcher's epistemological and ontological assumptions.

Chapter 5: Explains the methods for data collection, from the systematic literature review approach to thematic and sentiment analysis techniques for data interpretation.

Chapter 6: Presents findings from analyzing tweets related to Norway's school strike for climate on March 22nd, 2019, revealing various themes and perspectives on climate change and youth activism in Norway.

Chapter 7: Discusses the broader landscape of climate discourse in Norway, exploring Twitter's role, dominant narratives, sentiment implications, and the potential impacts on climate policy and public dialogue in Norway.

Chapter 2: Literature Review

This chapter identifies relevant literature on Norway's climate policy landscape, a global perspective on the school strike for climate movement, the school strike for climate movement in Norway, studies on Twitter as a platform for activism, and grassroots influence on policymaking to provide a background and context to address the research question in the discussion.

2.1 Historical Context: Norway's Climate Policy Landscape

There have been several studies conducted on the history of Norway's climate policy landscape, and a majority of these studies highlight Norway's paradoxical stance (Anker, 2018; Korsnes et al., 2023). While it is at the forefront of climate-related efforts, it also ranks as one of the world's top oil and gas producers (Anker, 2018). On one hand, the country is a major oil and gas producer and derives significant economic benefits from these resources, particularly from its activities on the Norwegian Continental Shelf (NSC). On the other hand, Norway is also known for its strong environmental policies, commitment to sustainable practices, and investments in renewable energy (Korsnes et al., 2023).

Greenhouse gas (GHG) emissions from Norway's domestic areas are relatively low. Under the Norwegian Climate Change Act of 2017, Norway has a legal obligation to reduce its GHG emissions by 40% by 2030 (Voigt, 2021). Moreover, by 2050, the country aims to establish a low-emission economy. To achieve this, Norway has adopted various strategies, including integrating its national emissions trading scheme with the EU Emissions Trading Scheme (EU ETS) and introducing carbon pricing (Anker, 2018; Voigt, 2021). According to Voigt (2021), Norway stands at the forefront of international climate discussions, actively participating in UN climate talks and serving as a diplomatic bridge-builder. Through its

International Climate and Forest Initiative, it has become a central figure in addressing deforestation-related emissions in developing countries. On the domestic front, Norway has set ambitious climate targets and implemented strategies to meet them. However, a challenge remains: its significant global greenhouse gas (GHG) emissions footprint, largely due to its energy exports. Interestingly, a vast majority of the oil and gas Norway produces is destined for foreign markets. This positions Norway as the third-largest global exporter of natural gas and the 15th in oil exports. Voigt (2021) found that the GHG emissions from these petroleum exports are estimated to be 95% higher than emissions within Norway's own borders (Voigt, 2021).

Oil and gas have been crucial to Norway's economy since the discovery of oil in the North Sea in the late 1960s. Revenues from the petroleum sector have been used to fund the country's welfare state and to invest in the world's largest sovereign wealth fund, the Government Pension Fund Global (often referred to as the Norwegian Oil Fund). This fund is designed to ensure long-term wealth for future generations of Norwegians (Overland, 2018). According to Henderson & Loe (2014), the decision to grant licenses for oil and gas exploration in the Arctic regions, Lofoten, Versterålen og Senja, of the Norwegian Continental Shelf has been particularly controversial. The Arctic is both environmentally sensitive and crucial to global climate regulation (Henderson & Loe, 2014). Opponents argue that any oil spill in the region could have devastating environmental consequences, and that burning more fossil fuels from these areas will exacerbate global climate change (Naturvernforbundet, 2022; NRK, 2019). Many Norwegians, especially younger generations, environmentalists, and indigenous communities have protested against further oil exploration in the Arctic. They argue that Norway should lead by example in the fight against climate

change, rather than continuing to explore for more fossil fuels (Dusik, 2022; Hoff-Elimari, 2020; Naturvernforbundet, 2022; NRK, 2019).

According to Voigt (2021), there have been legal challenges to the government's decision to grant these licenses. In a landmark case, environmental groups argued that the decision violated the Norwegian Constitution, which guarantees the right to a healthy environment. The case went through various stages in the Norwegian court system, reflecting the depth and significance of the issue in Norwegian society (Voigt, 2021). The Norwegian government faces the challenge of balancing the immediate economic benefits and job opportunities provided by the oil and gas sector with the long-term environmental and ethical implications of continued fossil fuel exploration and production.

Disagreement has been growing over the course of the past decade regarding the future of Norway's oil and gas industry. Industry actors and the political majority in Norway have redoubled their efforts to legitimize Norway's continued oil and gas production in the context of aggressive global climate targets in response to demands from nongovernmental organizations (NGOs) and some political parties to end Norway's oil production entirely. There is still a lot of population support for the sector, however new narratives about economic risk and a "managed decline" have contributed to an increase in the problematization of new oil operations (Lahn, 2019).

2.3 Twitter as a Platform for Activism

According to Greijdanus et al. (2020), the literature on online activism reveals several important highlights on the complex relationship between online activism, offline protest, and

the internet's dual role in supporting and inhibiting activism. Firstly, SMPs possess inherent characteristics that enable and enhance online activism. These platforms allow individuals to express their experiences and opinions, linking them to collective causes. They also provide spaces for online communities to offer support, organize activities, and counter negative responses. Secondly, the evidence regarding '*slacktivism*', where online collective action hinders offline action, is inconclusive. Studies present mixed findings on whether online activism translates into tangible offline engagement. Similarly, the concept of digital dualism, which posits that online and offline protests are unrelated, also receives mixed support from the literature. Thirdly, most research suggests that online and offline protests often exhibit a positive correlation. This indicates that engagement in online activism tends to align with and support offline actions. Lastly, this study found that it is important to acknowledge that while the internet can be a powerful tool for activism, it also facilitates repressive measures. The online realm can be used for surveillance, censorship, and suppression of dissent (Greijdanus et al., 2020).

Within this context, Twitter stands out. Twitter has emerged as a powerful tool for engagement, information sharing, and collective action around global issues such as climate change (Abdul Reda et al., 2021). According to Veltri and Atanasova (2017), data obtained from Twitter is believed to possess three main characteristics. Firstly, the information is curated and presented based on the user's personal preferences and perceived relevance, as opposed to adhering to journalistic standards. Secondly, the information is targeted towards a specific audience consisting of network connections rather than being disseminated to an anonymous mass audience. Lastly, the information is often conveyed in a conversational manner rather than being unidirectional. This implies that on Twitter, discussions about a

particular topic are influenced by what users consider significant for their respective audiences (Veltri & Atanasova, 2017).

A study conducted by Moe et al. (2023) titled: *'Polarisation and echo chambers? Making Sense of the Climate Crisis with Social Media in Everyday Life'* dives into the relationship on the impact of social media in shaping public perceptions and discourse, particularly around pressing issues such as climate change in Norway. One of the central themes of Moe et al. (2023) study is the perception of polarization within different media landscapes. Participants interviewed in the study, such as 'Aksel', posit that mainstream news is the predominant channel for disseminating polarizing information. On the other hand, Trude, another individual observed in the study, contends that platforms such as Twitter, characterized by limited character counts and polemical discourse, fail to offer the same level of depth and intricacy as editorial media. Nevertheless, both perspectives align in recognizing the value of other SMPs as mediums that facilitate connections, providing access to reliable information amidst the abundance of less reputable sources (Moe et al., 2023). The study also highlights the heightened awareness among participants about the pitfalls of misinformation in the digital realm. However, a noteworthy observation is the potential overestimation by some participants of their ability to discern and navigate misinformation, emphasizing the complex relationship between digital literacy and information consumption. Moe et al.'s (2023) research methodology, which involved in-depth interviews conducted in 2020 with Norwegians, provides a distinct viewpoint of perceptions when global attention was divided between the coronavirus disease (COVID-19) pandemic and the perception of urgent matters such as climate change. The backdrop of the pandemic, combined with growing awareness of climate issues in Norwegian media, particularly debates on wind turbines and the oil industry, offers a rich context for understanding media consumption patterns (Moe et al., 2023).

In previous studies, SMPs has been used to analyze public opinions on climate change. Kirilenko and Stepchenkova (2014) conducted a study where they gathered a vast dataset of 1.8 million tweets from 2012 and 2013. Their objective was to assess how people's perceptions and impressions of climate change varied based on their geographical location and exposure to climate change-related news or events. The findings of this study revealed that discussions about climate change on Twitter exhibited significant temporal fluctuations and experienced a notable surge during major weather events such as Hurricane Sandy, which had a substantial impact on the Atlantic region in the United States in 2012 (Kirilenko & Stepchenkova, 2014).

Pearce et al. (2014) conducted a study using Twitter hashtags to evaluate how tweets mentioning the 2013 The Intergovernmental Panel on Climate Change (IPCC) report were influenced by different individuals, focusing on reaching diverse segments of the public. The findings suggested that people generally tend to engage in conversations with others who share their views. However, an interesting discovery emerged within the United Kingdom community. Despite the prevailing polarization in the climate change debate, the data indicated significant communication between individuals holding opposing opinions on climate change. This discovery allows for greater mutual understanding among groups with differing beliefs (Pearce et al., 2014).

A study conducted by Cody et al. (2015) analyzed tweets containing the word "climate" from 2008 to 2014 using the Hedonometer sentiment measurement tool. The Hedonometer is a tool designed to measure the emotional content of large-scale texts, primarily to determine the collective happiness of populations based on their written

expressions on SMPs such as Twitter. Developed by researchers from the University of Vermont, the Hedonometer provides a way to quantify sentiment daily. Cody et al. (2015) found that Twitter's responses to climate change news were predominantly from climate change activists rather than deniers, suggesting that Twitter is a valuable resource for spreading climate change awareness. The study provides insights into the landscape of climate change discourse on Twitter, highlighting the strong presence of activists advocating for action. However, it is important to consider the study's limitations, such as the focus on a specific keyword and the potential biases inherent in analyzing Twitter data. Despite these limitations, the findings suggest that Twitter had the potential to amplify the messages and concerns of climate change activists. Still, caution should be exercised when generalizing these findings to the broader population (Cody et al., 2015).

Chapter 3: Theoretical Framework

In this chapter, several theories are introduced to allow for analysis of the findings of this study. The selection of these theories aligns with the study's primary objectives, emphasizing social movement theory, agenda-setting theory, and framing theory. These theories serve as guiding tools, ensuring the research remains on track and offer a structured approach to addressing research questions.

3.1 Social Movement Theory

In the 1990s, the significance and impact of social movements became evident, especially with the emergence of the environmental movement. During this time, large-scale demonstrations and protests were organized to coincide with global summits and forums where world leaders discussed and negotiated agreements on environmental issues (Ntuli &

Teferra, 2017). Social movements can be understood as a diverse collection of individuals, groups, or organizations engaged in political or cultural conflicts driven by a shared identity (Diani, 1992). According to Diani & McAdam (2003), a social movement can be defined as a collective of actors who (1) share a common collective identity, (2) exchange practical and symbolic resources through informal networks, and (3) actively engage in conflicts or competition, such as seeking resources, members, and attention, to effect or resist social change (Ackland & O'Neil, 2011; Diani & McAdam, 2003). Other examples of contemporary civic action include movements such as the '*Arab Spring*', the '*Indignados*' movement in Spain, '*Occupy Wall Street*' in the United States, and uprisings in Europe against austerity measures and social welfare cuts. In other words, these platforms have served as bridges between online conversations and offline protests (Ackland & O'Neil, 2011). While these social movements have specific causes and forms of activism, they share common elements. Firstly, they embrace new technologies as a means of mobilization. Secondly, they make use of internet politics and online activism, employing tools such as electronic voting, digital campaigns, chat rooms, and virtual mobilization through SMPs such as Facebook and Twitter (Abdul Reda et al., 2021; Ackland & O'Neil, 2011; Chamberlain, 2010; Greijdanus et al., 2020).

3.2 Agenda-Setting Theory

The agenda-setting theory is a concept in the field of mass communication and media studies that proposes that the media has the power to influence the importance placed on topics in the public agenda (McCombs & Donald L. Shaw., 1972). It suggests that media organizations, through their selection and presentation of news and information, have the ability to select, frame and shape which issues and events the public deems significant and

worthy of attention. The theory was first introduced by Maxwell McCombs and Donald Shaw in 1972, based on their research during the 1968 U.S. presidential election. They observed a correlation between the issues covered by the media and the issues that the public considered important during the election campaign. This led them to propose that the media does not necessarily tell people what to think but rather what to think about (McCombs & Donald L. Shaw., 1972).

The agenda-setting theory can also be applied to analyze tweets on SMPs such as Twitter. By employing this theory, one can examine the topics and issues being discussed and shared on Twitter to understand the patterns and prominence of certain subjects. Through thematic analysis, researchers can identify recurring themes and keywords that emerge frequently in tweets. Furthermore, the virality of certain tweets and the presence of influential users can indicate the topics that are capturing public interest and potentially setting the agenda. By examining the framing and language used in tweets, one can also understand how issues are presented and understood within the Twitter community. Therefore, applying the agenda-setting theory to tweet analysis provides valuable insights into the topics that dominate discussions on Twitter and potentially shape public opinion and discourse within the platform.

3.3 Framing Theory

Framing theory serves as a cornerstone in the field of communication and media studies. At its core, framing theory offers a lens through which to understand how various entities, including media outlets, political actors, and interest groups, shape public perceptions of issues, events, and topics. By selecting, emphasizing, or de-emphasizing

specific aspects of a subject, these entities influence how audiences interpret and understand the matter at hand (Entman, 1993). The origins of framing theory can be traced back to the 1970s and 1980s when scholars began investigating how media messages impact public opinion and policy decisions. Erving Goffman's work on frame analysis provided the initial framework by exploring how individuals interpret social situations through mental frameworks or frames (Goffman, 1974). Robert Entman furthered this foundation by applying it to media content analysis, emphasizing how media outlets frame news stories and the potential consequences of these framing decisions (Entman, 1993). Central to framing theory are two key concepts: framing and framesets. Framing, in this context, refers to the process of highlighting certain facets of an issue while diminishing or excluding others. It resembles painting a picture of an issue, with the artist deciding which elements to include and how to portray them. Frames, on the other hand, are cognitive structures that help individuals make sense of the world. They act as mental frameworks through which information is understood and can be categorized as episodic or thematic. Episodic frames focus on specific events, while thematic frames zoom out to reveal broader patterns and issues.

In the realm of media and communication, framing theory is particularly pertinent. Media outlets wield significant influence by choosing which aspects of an event or issue to highlight and which to downplay. Editorial decisions shape how audiences perceive the significance and meaning of the news. Whether through print, broadcast, or digital media, the frames chosen by media professionals can have profound effects on public understanding. Framing theory is not confined to media alone; it extends to political communication as well. Political actors, such as politicians, interest groups, and political parties, are adept at using framing to sway public opinion and shape policy debates. For instance, a political leader may

frame an economic issue as a matter of emphasizing its drawbacks. Such framing can significantly impact public attitudes and policy outcomes (Iyengar, 1991). In today's digital age, where information spreads rapidly through various media platforms, understanding framing theory is more critical than ever. Researchers are increasingly applying framing theory to analyze its role in social media, online activism, and the dissemination of misinformation (Matthes & Kohring, 2008). As new communication technologies emerge, framing theory remains an indispensable tool for comprehending how media and messaging influence public opinion and perceptions.

3.4 Echo Chamber Theory

The term ‘echo chamber’ describes a situation where individuals primarily encounter information or opinions that resonate with their beliefs, reinforcing these beliefs and restricting exposure to differing viewpoints (Flaxman et al., 2016). This phenomenon has gained prominence in the digital age, especially with the widespread use of SMPs (Barberá et al., 2015; Moe et al., 2023; Williams et al., 2015). On these platforms, content-curating algorithms often prioritize user preferences, creating a self-perpetuating cycle of information consumption. According to the echo chamber theory, such environments can fuel increased polarization, diminish open-mindedness, and lower the inclination to engage in constructive discourse with those holding contrasting views (Flaxman et al., 2016). Central to this theory is the notion of selective exposure, where individuals naturally gravitate toward sources that affirm their beliefs and avoid those that challenge them (Garrett, 2009).

Furthermore, the role of algorithmic filtering on many digital platforms cannot be understated. These algorithms, driven by user interactions and preferences, can enhance the

echo chamber effect by consistently serving content in line with users' prevailing views (Bakshy et al., 2015). As a result, over time, individuals may find their beliefs becoming more entrenched and even extreme due to a lack of exposure to opposing opinions. This continuous affirmation can hinder one's openness to alternative perspectives. In online communities, individuals often receive validation through positive feedback, such as likes and shares, for voicing opinions that align with the community's dominant beliefs, further solidifying their stance. At a broader level, the existence of such echo chambers poses challenges for society. They can lead to a fragmented landscape where distinct groups operate in parallel information realms, making it challenging to achieve consensus on significant issues or to foster meaningful, constructive dialogue (Bakshy et al., 2015; Flaxman et al., 2016; Garrett, 2009).

3.5 Climate Discourse Alignment Theory (CDAT)

The theories discussed offer insights into various aspects of online social movements but are not all-encompassing. A comprehensive theoretical framework is essential to understand online social movements. Integrating social movement theory, agenda-setting theory, framing theory, and echo chambers theory results in a robust analytical tool for examining the 2019 Norwegian school strike for climate's Twitter discourses and their alignment with general Norwegian climate change perspectives.

Agenda-setting theory suggests that media influences public attention towards specific topics. In the context of this study, this would involve examining the Twitter coverage of the 2019 Norwegian school strike, identifying primary themes, and contrasting them with prevailing Norwegian climate change opinions. Framing theory indicates that

media not only determines what topics we focus on but also shapes our perception of them. Within this study, this would entail analyzing the framing of Twitter conversations about the school strike, identifying dominant frames, such as urgency or moral duty, and measuring them against the wider Norwegian dialogue on climate change. Social movement theory explains that social movements arise due to a disparity between the current and ideal states, motivating collective action. Echo chamber theory can offer insights into the representativeness of the Twitter discourse on the 2019 Norwegian school strike for climate. Specifically, it can highlight whether the discourse genuinely mirrors general Norwegian perspectives or mainly echoes polarized, intensified opinions. This analysis would delve into the school strike's portrayal as a social movement on Twitter, studying its narratives and mobilization methods and contrasting them with widespread Norwegian sentiments. Further, recognizing the influence of echo chambers can clarify whether Twitter is molding societal conversations or merely echoing and intensifying pre-existing viewpoints.

This integrated framework, the Climate Discourse Alignment Theory (CDAT), provides a multi-dimensional lens to understand the complex interplay between social media discourses, social movements, and broader societal opinions. CDAT aids in comprehending the alignment or misalignment of the Twitter discourse with mainstream Norwegian perspectives, assessing the school strike's influence on public sentiment, and determining Twitter's function in shaping or reflecting societal discussions on crucial topics such as climate change and biases and nuances.

Chapter 4: Research Design

In this chapter, the underlying philosophical assumptions that underpin the research process are outlined. The chapter begins by detailing the researcher's foundational epistemological and ontological assumptions, which influenced the selection of the research and data collection methods.

4.1 Qualitative Study

The primary objective of this study was to gain a deeper understanding of the nuances and intricacies of Twitter narratives from the 2019 Norwegian school strike for climate and compare them with broader Norwegian attitudes on climate change. Qualitative research, by its very nature, is designed to explore and understand phenomena in-depth. The main principles of qualitative research involve understanding phenomena in-depth and capturing their essence, meanings, and characteristics, which are fundamental principles of qualitative research (Denzin & Lincoln, 2011). In addition, it is important to note that the surrounding context heavily influences the interpretation of narratives. Qualitative research methodologies place a significant emphasis on conducting inquiries unique to the contextual factors at hand. When examining the alignment between Twitter narratives and broader societal perspectives on climate change in Norway, it is important to give due consideration to the cultural, sociological, and historical background. Therefore, the design of the study is intrinsically qualitative. The research question's exploratory nature is consistent with qualitative methodologies designed to reveal patterns, themes, and relationships. Although it does not follow the exploratory approach of hypothesizing. Due to their textual nature and complex content, tweets include a wealth of qualitative data. Approaches such as thematic analysis, content analysis, or discourse analysis are important for analyzing such data, and these approaches are inherently qualitative in nature (Braun & Clarke, 2006).

4.2 Case Study Approach

The methodological approach adopted for this research is best characterized as a case study, echoing the framework outlined by Yin (2009), in which a case study can be defined as an empirical investigation that examines a phenomenon within its real-life context (Yin, 2009). In this study, the "phenomenon" is the Twitter discourse surrounding the school strike, while the "context" refers to the wider context of Norwegian attitudes toward climate change. This contextualization is a hallmark of case study research, which seeks to understand phenomena within their real-world settings. While the main focus seems to be on analyzing Twitter data, the research also references Norwegian climate policies and attitudes. This indicates a triangulation of data sources, another characteristic of case studies. Twitter narratives serve as a digital representation of public attitudes and sentiments, thus making them a relevant subject for analysis (Bruns & Burgess, 2012). This study aims to provide a comprehensive understanding of the potential influence of digital narratives on societal perspectives about major global concerns, such as climate change, by specifically examining the 2019 Norwegian school strike. Moreover, this case's limited system, characterized by temporal (2019) and locational (Norway) features, allows for detailed study and interpretation. Rather than analyzing climate protests globally or social media responses to climate change in general, this research is restricted to a specific event in a specific country at a specific time. This thesis does not claim to generalize the findings to all instances of climate protests or all SMPs globally. Instead, its scope is limited to Twitter discourse about one event in Norway. This specificity aligns with characteristics of case studies.

4.3 Interpretivism

Interpretivism is closely associated with qualitative research methods that prioritize depth over breadth. The objective of all research is to use systematic inquiry and disciplined methods to progress, refine, and expand a body of knowledge, establish facts, and/or reach new conclusions. The research design is the strategy or plan that researchers apply to solve the research question, which is supported by philosophy, methodology, and methods (Chun Tie et al., 2019). Birks defines philosophy as a paradigm that includes both the issues posed and the methods used to answer them (Birks & & Mills, 2015). The term "paradigm" refers to a perspective on the world or a specific structure that we apply to make sense of our surroundings. Within the realm of social sciences, there are two distinct paradigms, namely tositivist and interpretivist research. Positivists believe that society shapes the individual and relies on quantitative methods, while interpretivists believe that society shapes the individual and relies on qualitative methods. While there are fundamental differences between positivist and interpretivist paradigms in the social sciences, each research approach adheres to specific criteria for data gathering, analysis, and interpretation (Chun Tie et al., 2019).

The interpretivist paradigm's emphasis on understanding the subjective nature of reality, the importance of context, and the dynamic nature of social phenomena make it the most appropriate choice for investigating the dominant narratives, sentiments, and themes in the Twitter discourse on Norway's school strike for climate in 2019. While interpretivism acknowledges that reality is subjective and can be interpreted in multiple ways, this thesis seeks to uncover the dominant narratives and sentiments, which are inherently subjective and can vary among individuals. Analyzing these narratives requires an understanding of the individual perspectives and their contextual meanings. Next, understanding the 'why' and

'how' of the discourse is the focus of this thesis. It is not merely about counting the number of tweets or categorizing them into predefined boxes. Instead, it delves into the nuances, sentiments, and the intricate web of meanings. Interpretivism emphasizes a deep understanding of social phenomena from the perspective of those involved, making it a fitting paradigm. Furthermore, since the interpretivist paradigm places a strong emphasis on the context in which social phenomena occur, the Twitter discourse surrounding Norway's school strike for climate in 2019 is deeply rooted in its specific socio-political and cultural context. To fully comprehend the narratives and sentiments, one must consider the context of Norway's position on climate change, the global youth movement for climate action, and the events of 2019.

4.4 Inductive Reasoning

The primary distinction between inductive and deductive reasoning is in their respective objectives: inductive reasoning seeks to develop a theory, whereas deductive reasoning seeks to validate an established theory. Inductive reasoning, in essence, entails the progression from specific observations to overarching generalizations. The process of deductive reasoning operates in a reverse manner. Unlike deductive reasoning, which starts with a hypothesis and then tests it, inductive reasoning does not start with a pre-established hypothesis. In this thesis, the researcher did not begin with a predetermined notion or theory about the dominant narratives. Instead, the goal was to discover these narratives and themes by analyzing the data. As a result, the use of the inductive reasoning approach was deemed most suitable for addressing this thesis as it allowed for a systematic analysis of specific tweets wherein observations and data collection led to the development or emergence of patterns, themes, and, ultimately, theory. Instead of starting with a predefined theory and testing it, inductive

reasoning, as described by Thomas (2006), allows themes to emerge from the raw data, ensuring that the research findings are grounded in the actual data. This bottom-up approach is particularly apt for explorative studies, where the intent is to discern patterns and relationships within the data without the constraint of pre-established theoretical structures (Thomas, 2006). This methodology seeks to ensure that the findings drawn from the data are accurate and not subject to any initial external theories or preconceived notions. With inductive reasoning, conclusions are derived directly from the data. For this research, any assertions about dominant narratives, sentiments, or themes were based on the actual content and patterns observed in the Twitter discourse rather than fitting the data into an existing framework or theory. Furthermore, the inductive approach is often associated with exploratory research, where the objective is to understand a phenomenon more deeply without predefined constraints. Given that the focus of this research question was to explore and understand the discourse in-depth, an inductive approach was deemed most appropriate.

Chapter 5: Data Collection Methods

Data collection stands at the core of research, determining its validity and relevance. This chapter provides an overview of three methods employed to address the research questions. First, the literature review acted as a foundational step, assessing existing studies to identify gaps in knowledge and set the context for identifying opportunities for further research. Second, the thematic analysis, a qualitative approach, extracts and interprets patterns in data, offered a method of categorizing the most dominant discourses during the school strike for climate. Thirdly, sentiment analysis, leveraging computational tools, evaluated public sentiment by analyzing textual data from SMPs such as Twitter. The subsequent sections delve into the intricacies, advantages, and challenges of each method, guiding the decision-making process in research.

5.1 Literature Review

A literature review provided a foundation for the research by offering insights into what was already known about the topic as presented in Chapter 2. By understanding previous studies and findings, gaps in the existing knowledge were identified, and the research was positioned within that context. The literature review assisted in situating the Twitter discourse in the broader context of climate activism, global youth movements, and social media's role in political and social change. This provided a richer understanding of the context in which the 2019 school strike discourse unfolded.

5.1.1 Locating Relevant Literature

To locate relevant literature the ORIA search engine, available at the University of Stavanger (UiS) was used. This extensive search tool encompasses more than 199 academic databases, such as Scopus, JSTOR, SAGE Journal, ScienceDirect, Web of Science, and Taylor & Francis Online. Additionally, Google Scholar's search engine was utilized to broaden the scope of the literature search. To ensure an in-depth review, citation analysis of journal articles was performed, involving the examination of references cited in bibliographies. The search revealed a substantial body of literature pertaining to Twitter Discourses on Climate Change, particularly from the years 2014 to 2023. Furthermore, Google was utilized to explore additional resources such as Master Thesis' and PhD Thesis' by entering relevant search terms.

5.1.2 Search Term Strategy

Search terms such as *'climate change'*, '*Twitter'*, *'social media'*, *'thematic analysis'*, *'fridays for future'*, *'online activism'*, *'attitudes towards climate change'*, *'school strike'*, *'climate strike'*, *'oil exploration'* and *'Norway's climate policy'*, formed the foundation of the search strategy to align with the research question and objectives. The selection of the aforementioned terms was not rigid, and modifications were made based on preliminary search results. Additionally, synonyms and related terms were incorporated to broaden the scope and inclusivity of the search. For instance, *'social media'* was extended to include *'social media platforms'*, *'digital media',* or *'online platforms'*. The search primarily focused on including peer-reviewed articles. However, to obtain the most up-to-date information to address the research question reports such as *'Norwegians' attitudes towards climate change, climate policy, and personal responsibility'* were also included and presented in the findings. Notably, this particular report was conducted by a reputable research center tracking social media usage and habits in Norway.

5.2 Thematic Analysis

Thematic analysis is a method used to identify patterns or themes within qualitative data. According to Braun and Clarke (2006), it is recommended that the initial focus in qualitative research should be on learning thematic analysis since it equips researchers with fundamental abilities that may be used for various other forms of analysis. Unlike many qualitative methodologies, it is not bound to a specific epistemological or theoretical perspective, offering great flexibility (Braun & Clarke, 2006). In this thesis, Braun & Clarke's (2006) 6-step framework is adopted (See Figure 1.). This framework is particularly influential

in the social sciences, likely due to its clarity and practicality. The thematic analysis aims to identify significant or interesting themes or patterns within the data to address research questions or discuss an issue. It goes beyond merely summarizing the data; it involves interpreting and making sense of it. A common mistake for example is to use primary interview questions as themes (Clarke & Braun, 2013). This usually indicates that the data has been organized and summarized rather than truly analyzed. Braun & Clarke (2006) differentiate between two levels of themes: semantic and latent. Semantic themes arise from the explicit or surface meanings of the data without delving into content beyond the participants' statements or writings. The analysis in this thesis identifies themes at the semantic level, representing narratives on Twitter in Norway during the school strike for climate. The goal of the analysis is to move beyond mere description, focusing on interpretation and explanation. Conversely, latent themes dig deeper, uncovering the underlying ideas, assumptions, and ideologies believed to influence the semantic content of the data.

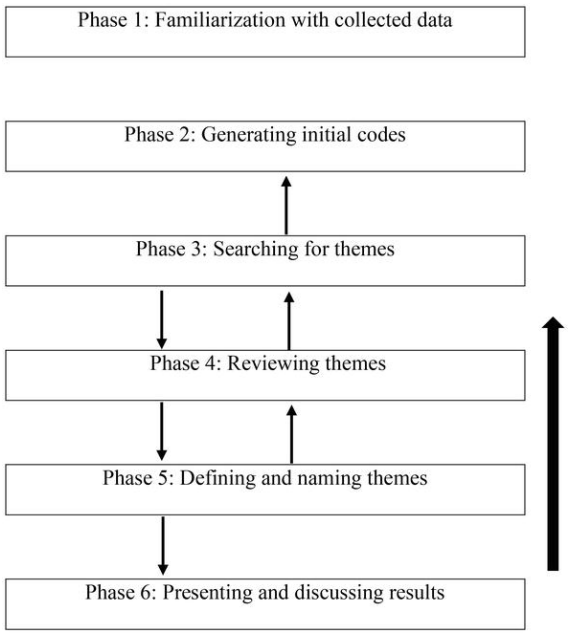

Figure 1. Braun & Clarke's Six-Phase Framework for Thematic Analysis (Source: (Labra et al., 2020)*.)*

The initial step in qualitative analysis involves thoroughly reading and reviewing the transcripts, being tweets in this thesis. Examples of tweets that constitute this thesis are located presented in chapter 6. During the second phase, the data is organized in a systematic and meaningful manner. Coding condenses vast amounts of data into meaningful segments. The coding method varies based on the research perspective and questions. Bree & Gallagher (2016) detail the use of Microsoft Excel for coding and assist in theme identification (Bree & Gallagher, 2016). Figure 2. contains the extracts with corresponding codes in the margins. A theme, as previously defined, represents a pattern that captures something pertinent or intriguing related to the data and/or research question. As Braun & Clarke (2006) note, there is no strict criterion for defining a theme; its prominence characterizes it. In cases of limited data sets, such as a tweets posted on Twitter during the school strike for climate, there might be a substantial overlap between the coding phase and the stage of pinpointing preliminary themes. Figure 2. displays the preliminary themes identified, accompanied by their associated codes. While most codes correlate with a single theme, some are linked to multiple themes, as emphasized in Table 3. In this thesis, every code aligns with at least one theme. However, this was not always the case; occasionally, a 'miscellaneous' theme may be utilized to categorize these codes at this stage.

A key limitation in thematic analysis is the subjective interpretation involved in the coding and categorization process of the identification and interpretation of themes and issues discussed on Twitter. Researchers' biases, assumptions, and preconceptions can influence the analysis, potentially leading to variations in results. Different researchers may identify different themes or interpret them differently. Additionally, thematic analysis may overlook the contextual nuances and complexities present in the data, as it reduces textual content into predefined categories. The limited scope of data, focusing on specific subsets such as tweets

related to the school strike for climate, may not fully capture the breadth and diversity of perspectives on climate change.

5.2.1 Selection of Data

Norwegian-language tweets mentioning the school strike for climate, climate change, or related terms from March 21st to March 23rd, 2019, were manually collected from Twitter. This temporal restriction allows for capturing tweets directly related to the protest and the associated discussions, focusing on climate change, school strikes, environmental sustainability, and related topics. Although Twitter does not offer the ability to filter tweets by geographic location, only tweets in Norwegian were gathered under the assumption that they originated from Norway. The analysis did not include the profile of users tweeting about the strike; instead, the focus of this study was on the content of the tweet itself.

Although the study examines temporal differences in the conversation surrounding climate change, the specific timeframes chosen (day before March 21st; day of: March 22nd; and the after 23rd, 2019, the strike) may not capture all relevant temporal dynamics. This limited timeframe restricts the findings to the circumstances, sentiments, and discussions surrounding that specific event. It may not capture the broader, long-term dynamics of Twitter engagement on climate change or reflect subsequent shifts in public opinion and online conversations. Additionally, the chosen time points provide insights into the immediate impact and discussions related to the event but may not reflect baseline levels of Twitter engagement. The sampling biases introduced by these temporal limitations can skew the representation of opinions and discussions, potentially overlooking perspectives from individuals who were less active or absent from Twitter during those specific moments.

5.2.2 Data Extraction Strategy

A significant limitation arose from Twitter's recent announcement on February 2nd, 2023, regarding the termination of free access to its Application Programming Interface (API) within a week. The Twitter API, which has played a pivotal role in enabling researchers to explore public attitudes and behaviors, facilitated the collection of tweets and their associated metadata, thereby providing valuable insights into various topics of interest. However, with the requirement to pay for access to the Twitter API coming into effect on February 9th, 2023, a considerable financial constraint was imposed on this thesis. As a result, the research faced limitations in terms of the sample size and representativeness of the data used, potentially impacting the comprehensiveness and generalizability of the findings. As the study focused on Norway's largest climate demonstration on March 22nd, 2019, it was crucial to access tweets from that specific timeframe. To overcome this challenge, a manual collection method was employed. Specifically, the researcher utilized a tailored advanced search method using specific keywords and date parameters to retrieve tweets related to the climate demonstration to identify tweets that were specifically relevant to the protest and fell within the desired timeframe.

The data collection process involved conducting an advanced search on Twitter using the following relevant keywords: ‘klimademonstrasjon’ OR ‘klima’ OR ‘miljø’ OR ‘klimaendringer’ OR ‘miljøaktivisme’ OR ‘protestmarsj’ OR ‘klimapolitikk’ OR ‘naturvern’ OR ‘bærekraft’ OR ‘natur’ OR ‘klimaaksjon’ OR ‘parisavtalen’ OR ‘skole’ OR ‘streik’. This data extraction strategy yielded a total of 1,068 tweets for analysis over three days (March 21st to 23rd, 2019). Each tweet was manually copied and pasted into an Excel sheet, capturing

relevant information such as date, Tweet text, and type of content (See Table 1). Data privacy considerations were upheld, with personal data being anonymized to protect user privacy.

Table 1. Overview of Collected Twitter Data on Climate

Column	Description
Tweet Date	The date when the tweet was posted.
Tweet Text	The text content of the tweet.
Content-Type	The type of content: Text, Picture, Video, Link, News Link

5.2.3 Data Inclusion and Exclusion Criteria

By setting specific criteria, such as tweets written in Norwegian and posted during the day before, the day of, and the day after the school strike for climate, a temporal and topic-based sampling was implemented. This allows for capturing tweets directly related to the protest and the associated discussions, focusing on climate change, school strikes, environmental sustainability, and related topics. Simultaneously, the exclusion criteria are utilized to filter out unrelated content, such as mentions of ‘World Water Day’, ‘World Forest Day’, ‘job postings’, or tweets that mention 'school' without relevance to the climate protest or climate change discussions. By employing this comprehensive sampling strategy, the study aims to obtain a representative sample of Norwegian tweets specifically related to the climate protest, enabling an in-depth and focused analysis of the discourse surrounding the event on Twitter during the specified time.

The search results were sorted to collect all tweets for the day before the strike, the day of the strike, and the day after, totaling 1,068 tweets. To focus on tweets specifically discussing the school strike for climate, each tweet was manually assessed for relevance. This assessment involved an inclusion/exclusion criterion: does the tweet share a general opinion on the school strike for climate? Using this method, the sample was refined to 896 relevant tweets, as presented in Figure 2.

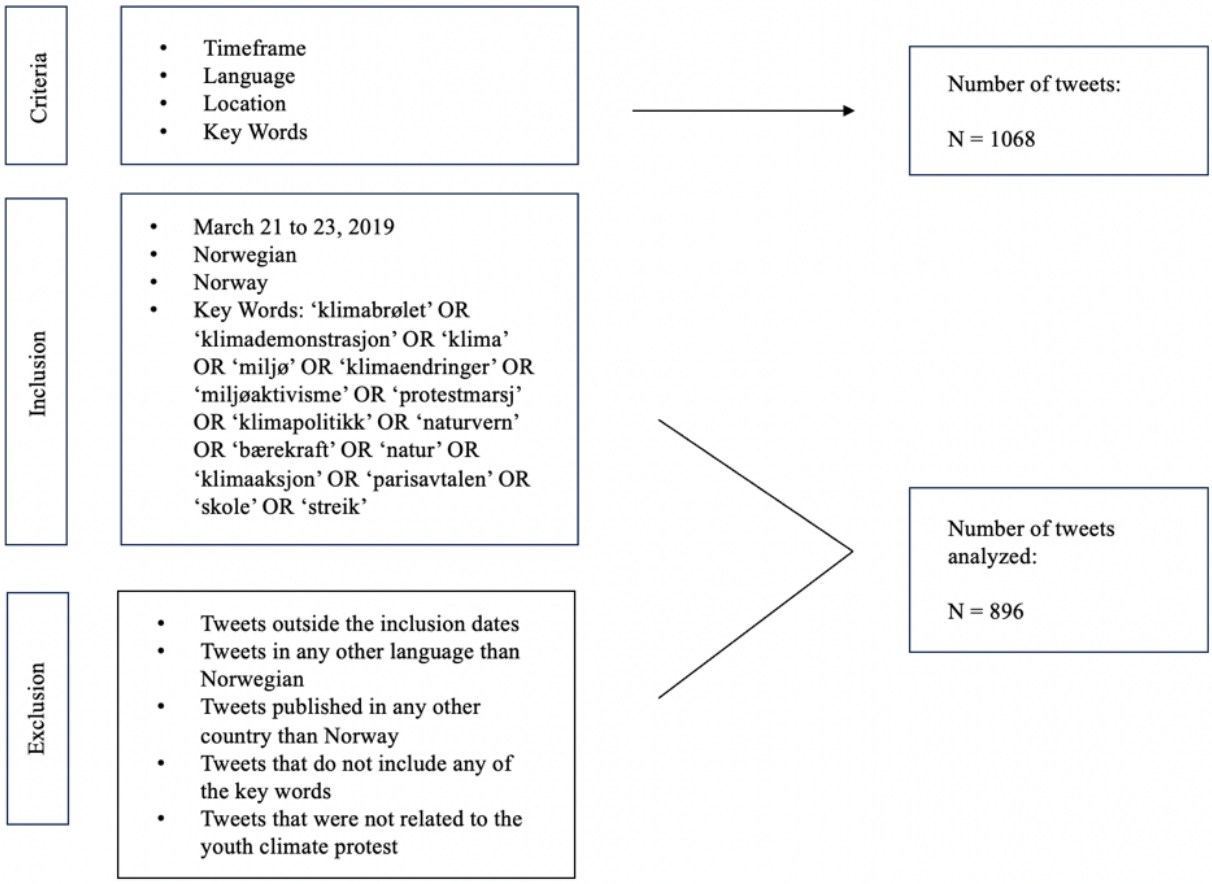

Figure 2. Inclusion, and Exclusion Criteria

Limitations in selection bias may occur as the sample of tweets collected and analyzed may not accurately represent the broader population or general public. Twitter users who actively engage in climate-related discussions have unique characteristics and biases that could impact the sentiments expressed and themes discussed. Moreover, the demographics of Twitter users may not mirror the demographics of the wider population, leading to potential biases in the findings. Additionally, the presence of a digital divide, with variations in internet access, digital literacy, and socioeconomic factors, can limit the representativeness of the sample by excluding certain individuals or communities from participating in online discussions.

5.2.4 Coding and Category Development

Following Braun & Clark's (2006) Six-Phase Framework for Thematic Analysis, the coding and categorization process involved assigning labels and organizing tweets into distinct categories to facilitate a comprehensive examination of the public discourse. Tweets were carefully assessed and categorized based on content. Categories included activism, policy advocacy, environmental impact, public sentiment, and calls to action (See Table 2.). Each tweet was assigned to one or more categories, capturing the diverse aspects of the public discourse.

Table 2. Coding framework

Themes and Topics	Description
Policy and Government	Tweets related to climate change policies, governmental actions, or political discourse.
Science and Facts	Tweets discussing scientific findings, research, or evidence related to climate change.
Impacts and Solutions	Tweets discussing the impacts of climate change and potential solutions or mitigation strategies.
Activism and Mobilization	Tweets related to activism, demonstrations, grassroots movements, or calls to action.
Validity of School Absence as Activism	Tweets questioning the validity or effectiveness of the absence from school as a form of climate activism.
Public Perception and Opinions	**Description**
Belief in Climate Change	Tweets expressing belief in the reality of climate change.
Disbelief in Climate Change	Tweets expressing disbelief in the reality of climate change.
Urgency and Importance	Tweets expressing the sense of urgency and importance of addressing climate change.
Responsibility and Accountability	Tweets discussing the responsibility of individuals, governments, or corporations in tackling climate change.
Alignment with Policies and Initiatives	**Description**
Supportive	Tweets expressing support for official climate change policies and initiatives in Norway.
Critical	Tweets expressing criticism or disagreement with official climate change policies and initiatives in Norway.
Alternative Approaches	Tweets discussing alternative approaches or suggestions for addressing climate change in the country.

5.3 Sentiment Analysis

Sentiment analysis, also referred to as opinion mining, is an area within the field of research focused on the processing and analysis of views, behaviors, and feelings expressed by individuals in relation to particular subjects, events, entities, products, services, or their corresponding attributes (Liu, 2012). Within the field of computer science, the terms "Opinion Mining" (OM) and "Sentiment Analysis" (SA) are frequently used interchangeably

as they often carry the same meaning (Medhat et al., 2014). Opinion mining is a term that was first used in the discipline of information retrieval (IR), whereas sentiment analysis is most frequently utilized in the field of artificial intelligence (AI) (Khan et al., 2014). When referring to the tweets throughout this thesis, the word "sentiment analysis" (SA) will be used to refer to both concepts.

Sentiments are frequently extracted from the vast corpus of textual material accessible to us through the internet or SMPs such as Twitter. According to Asghar et al. (2017), the rapid rise of social media around the world has stimulated the development of an entirely new dimension of information. This new dimension of knowledge contains a wide range of sentiments regarding events, incidents, issues, and any contemporary conundrums. Today, sentiment analysis is recognized as being important in every industry and, as a result, plays an important part in the decision-making process across a wide range of settings, including enterprises, sectors, communities, and even governments. The use of sentiment analysis is becoming increasingly widespread at an unprecedented rate as a result of recent developments in natural language processing (NLP), which combine machine learning and deep learning techniques.

Central to sentiment analysis is the concept of polarity categorization. Polarity corresponds to the overarching emotional tone expressed by a specific sentence, phrase, or word. The polarity of a text can be quantified through a numerical rating referred to as a "sentiment score". As an illustration, the aforementioned score can assume a numerical value ranging from -1 to 1, where a value of 0 signifies a state of neutral feeling. This particular metric can be computed for a complete body of text or for a singular sentence. Furthermore, the level of precision in sentiment scoring can be tailored to suit the specific requirements of

a given use case. The scope of categories can extend beyond the conventional classification of "positive," "neutral," and "negative." The perception of sentiment can vary greatly among individuals and is often influenced by personal experiences and biases. Humans combine several elements, such as tone, context, and language in order to communicate and express intended messages effectively. The interpretation of meaning is contingent upon individual experiences and unconscious prejudices. Sentiment analysis solutions use standardized criteria in order to produce more precise and reliable insights.

The method in this thesis involves using a pre-trained transformer model designed explicitly for Norwegian sentiment analysis. Each tweet from the dataset was passed through this model to determine its sentiment, either positive or negative, along with a confidence score. The results were then saved back to the dataset, providing a comprehensive sentiment analysis of Norwegian tweets related to the school strike for climate.

```
from transformers import pipeline
from tqdm import tqdm
import pandas as pd

data = pd.read_excel("data.xlsx") # Change the name of the file to the name of your dataset

sentiment_analysis = pipeline("sentiment-analysis", "NTCAL/norbert2_sentiment_norec")

for i in tqdm(range(len(data))):
tweet = data["Text"][i] # Change the name of the column to the name of the column in your dataset
sentiment = sentiment_analysis(tweet)
data["Sentiment"][i] = sentiment[0]["label"]
data["Score"][i] = sentiment[0]["score"]

data["Sentiment"] = data["Sentiment"].replace("LABEL_1", "Positive")
data["Sentiment"] = data["Sentiment"].replace("LABEL_0", "Negative")

data.to_excel("data.xlsx") # Change the name of the file to the name of your dataset
```

Below the author breaks down the code step by step:

Step 1. Importing Necessary Libraries:

```
from transformers import pipeline
from tqdm import tqdm
import pandas as pd
```

- 'transformers': A library for state-of-the-art NLP models.
- 'tqdm': A library to display progress bars.
- 'pandas': A library for data manipulation and analysis.

Step 2. Loading the Data:

```
data = pd.read_excel("data.xlsx")
```

The code reads an Excel file named "data.xlsx" into a pandas DataFrame. This file contains the Norwegian tweets.

Step 3. Setting Up the Sentiment Analysis Pipeline:

```
sentiment_analysis = pipeline("sentiment-analysis", "NTCAL/norbert2_sentiment_norec")
```

This sets up a sentiment analysis pipeline using a model specifically trained for Norwegian text (`"NTCAL/norbert2_sentiment_norec"`).

Step 4. Iterating Over the Data and Analyzing Sentiment:

```
for i in tqdm(range(len(data))):
tweet = data["Text"][i] # Change the name of the column to the name of the column in your dataset
```

```
    sentiment = sentiment_analysis(tweet)
    data["Sentiment"][i] = sentiment[0]["label"]
    data["Score"][i] = sentiment[0]["score"]
```

- The code iterates over each row (tweet) in the dataset.
- For each tweet, it performs sentiment analysis using the previously set up pipeline.
- The sentiment label (e.g., "LABEL_1" or "LABEL_0") and the confidence score are then stored in new columns named "Sentiment" and "Score", respectively.

Step 5. Replacing Labels with Human-Readable Strings:

```
data["Sentiment"] = data["Sentiment"].replace("LABEL_1", "Positive")
data["Sentiment"] = data["Sentiment"].replace("LABEL_0", "Negative")
```

The code replaces the machine labels ("LABEL_1" and "LABEL_0") with more human-readable labels ("Positive" and "Negative").

Step 6. Saving the Updated Data:

```
data.to_excel("data.xlsx")
```

Finally, the updated DataFrame, which now includes sentiment labels and scores for each tweet, is saved back to the same Excel file.

5.4 Data Privacy

All tweets presented in this section have been anonymized to ensure the privacy of individuals in accordance with General Data Protection Regulation (GDPR) regulations. Steps to ensure the protection of personal information and compliance with data protection

regulations while ensuring the content remains included: (1) replacing specific URLs with '[LINK]'; (2) Substituting specific Twitter handles and group names with generic placeholders such as '@Tag1', '@Tag2', or descriptors such as '[Political Group]', '[Administrative Body]', '[Organization]', '[Industry Name]', '[Country]', or '[Countries]'; (3) Generalizing specific job titles or professions to '[Job Title]', (4) Substituting specific photo credits with '[PHOTO CREDIT]' to maintain the structure of the tweet while ensuring anonymity; (5) and generalizing some hashtags with '#hashtags' or '#varioushashtags'.

Chapter 6: Results

In this chapter, the results from the analysis conducted on a dataset of tweets related to the school strike for climate in Norway during March 22nd, 2019 are presented. While the literature review was detailed in Chapter 2, the findings from the thematic and sentiment analysis as well as the survey findings from CICERO are presented in this chapter. The dominant themes identified in the analysis included support for the school strike, criticism towards adults and politicians, the urgency of climate action, and skepticism or opposition to the strike and climate change reality.

6.1 Descriptive Analysis

A total of 1,068 tweets were manually collected from May 6th to May 16th 2023. The tweets collected spanned from the day before March 21st, to the day of the school strike for climate on March 22nd, to the day after March 23rd, 2019. A total of 172 tweets were excluded using the exclusion criteria, which left 896 tweets for analysis. The distribution of tweets across the study period shows a significant increase in activity during the protest days,

indicating heightened engagement and discussions surrounding the school strike for climate (See Table 3.).

Table 3. Number of tweets per date

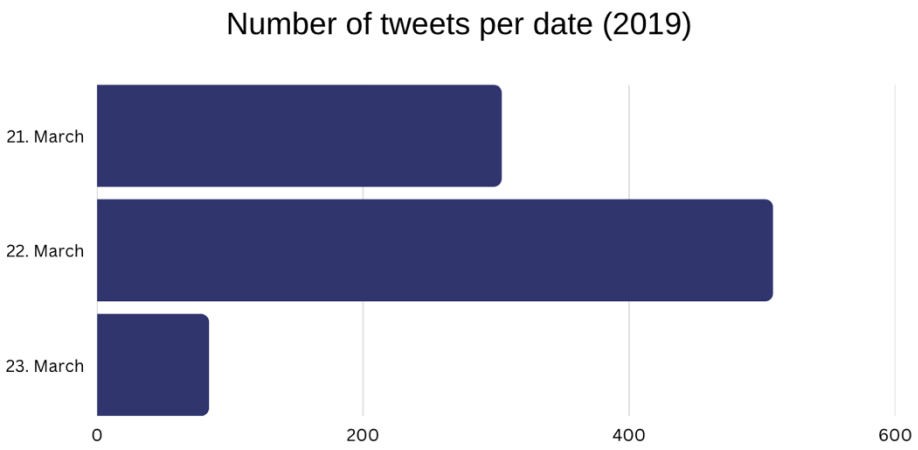

Figure 3. Word Cloud Visualization of top 100 words tweeted (NVivo)

Figure 3. presents a visually engaging word cloud generated from a collection of tweets related to the school strike for climate in Norwegian (See Appendix 1. For translation and definitions of most common terms). The word cloud provides a representation of the most frequently mentioned words or phrases, conveying the key themes and trends within the Twitter conversations under analysis. The word cloud is composed of various words displayed in different sizes and orientations, emphasizing their relative importance and frequency within the dataset. The larger the word appears, the more frequently it occurs in the tweets. This visual representation enables viewers to quickly grasp the dominant topics and sentiments expressed in the analyzed Twitter data. Upon closer inspection of the word cloud, several prominent words stand out. Terms such as *"climate*" (Norwegian translation: *klima*)*, "climate change"* (Norwegian translation: klima endringer)*,* and *"streik"* (Norwegian translation: *strike*) appear in relatively larger sizes, suggesting a prevalent focus on environmental issues and discussions within the dataset. Similarly, words such as *"oil"* (Norwegian translation: *olje*), *"youth"* (Norwegian translation: *ungdom*)*,* and *"politicians"* (Norwegian translation: *politikerne*), are displayed prominently, indicating a significant emphasis on Norway's exploration in oil and gas, specific focus on the youth and discussions on politicians to address climate policies.

6.2 Thematic Analysis

The results are organized into three main categories: Themes and Topics, Public Perception and Opinions, and Alignment with Policies and Initiatives. All tweets presented in this section have been anonymized to ensure the privacy of individuals in accordance with GDPR regulations.

6.2.1 Themes and Topics

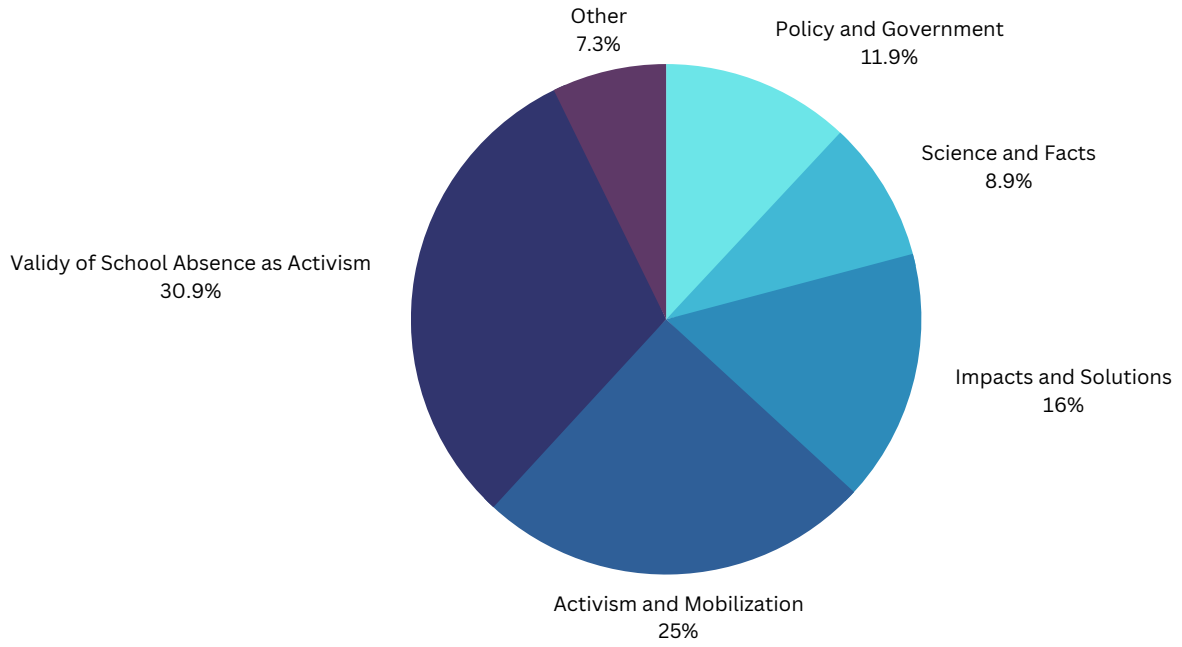

Figure 4. Distribution of Tweets Across Themes and Topics

Validity of School Absence as Activism: Approximately 30.9% of the tweets questioned the validity or effectiveness of the absence from school as a form of climate activism. Some users expressed concerns about the impact of missed educational opportunities and whether school strikes were an appropriate means of driving change. This theme brought forth a debate on alternative strategies and the balance between activism and education.

Table 4. Examples of tweets related to Validity of School Absence as Activism

Theme	Tweet	English translation
Validity of School Absence as Activism	“Det er tragisk at debatten... som engasjerar seg. #varioushashtags”	It's tragic that the debate revolves around whether striking is legitimate absence or not. Instead of praising the young people who are engaged. #varioushashtags
Validity of School Absence as Activism	“Til alle barn og unge som skal klima-streike i morgen...gyldig fravær! #hashtag”	To all children and young people who will be on climate strike tomorrow. Keep it up! Striking is much cooler if it's illegal. Don't let 'the adults' divert attention from your message by taking over the debate about whether you should get excused absence! #hashtag
Validity of School Absence as Activism	“Dette er berre TULL... deg omgrepa!”	This is just NONSENSE! Skipping is not showing up for school and just lying at home watching Netflix. Striking is showing engagement. Learn the terms!
Validity of School Absence as Activism	“Medienes dekning... gjenspeiles ikke i mediedekningen [LINK].”	The media's coverage of the climate truancy is a storm in a teacup. It's great to see the engagement young people show for a cause, but 90% of the students were actually in school today. This is not reflected in the media coverage [LINK].

Policy and Government: Approximately 11.9% of the tweets discussed climate change policies, governmental actions, or political discourse. This theme underlines the significant role that governmental bodies play in addressing climate change concerns.

Table 5. Examples of Tweets related to Policy And Government

Theme	Tweet	English translation
Policy and government	"Hvis den #hashtag regjeringen... #hashtag"	If the #hashtag government had delivered on climate, we would not have had this discussion about absence #hashtag.
Policy and government	"Den nye klimapolitikken viser..."	The new climate policy shows Norway's commitment to a greener future
Policy and government	"Fra et parti som ikke har klimapolitikk... #varioushashtags [LINK]"	From a party that has no climate policy, which is willing to let the world go to hell to make the rich even richer, we sure have to hear a lot of nonsense ... #varioushashtags [LINK]
Policy and government	"Norge er et av de landene... #hashtag"	Norway is one of the countries in Europe that has cut the least since 1990. The youth are striking throughout the election campaign because it is necessary. The government can FULFILL BETTER CLIMATE POLICY AT ANY TIME if they want to end the strike. #hashtag

Science and Facts: 8.9% of the tweets revolved around scientific findings, research, or evidence. These tweets underscore the importance of empirical data and research in understanding and communicating about climate change.

Table 6. Examples of Tweets related to Science And Facts

Theme	Tweet	English translation
Science and Facts	"Greier du å se for deg et Arktis uten is?... #varioushashtags [LINK] Foto: [PHOTO CREDIT]"	Can you imagine an Arctic without ice? Nowhere on the globe is warming happening faster than in Svalbard and the Arctic: [LINK] Opinion piece by climate researchers. #varioushashtags Photo: [PHOTO CREDIT]
Science and Facts	"Klimakompenserer du flyreisene dine? [LINK] @Tag1 @Tag2 @Tag3 @Tag4"	Do you offset the carbon emissions from your flights? [LINK] @Tag1 @Tag2 @Tag3 @Tag4
Science and Facts	"@Tag 5 Fint tiltak! Men kunne dere ikke inkludere klimaforskere også.. "	@Tag5 Great initiative! But couldn't you also include climate scientists in such a list? These days, forums are being spammed by people who doubt the scientific rationale for the climate crisis. I bet the youth would rather discuss the climate, and not just their age. :)
Science and Facts	"Over 23,000 forskere støtter... Check it out and join them here: [LINK]"	Over 23,000 scientists support the school strikes for a new climate policy. #Hashtag science, not scaremongering. "Without far-reaching and consistent change, their future is in danger." More than 23,000 scientists have signed a declaration to express support for the #hashtag movement. Check it out and join them here: [LINK]

Impacts and Solutions: Capturing 16% of the discourse, tweets in this category focused on the tangible effects of climate change and potential mitigation strategies. The real-world consequences of climate change and the urgency of action are central themes in this discourse.

Table 7. Examples of Tweets related to Impacts and Solutions

Theme	Tweet	English translation
Impacts and Solutions	"Det er langt rimeligere og enklere... Men ikke @Tag1. [LINK]"	It is far more cost-effective and simpler for society to cut greenhouse gases now than to deal with the consequences of climate change later. The climate-striking children/youth, scientists, and economists understand this. But not @Tag1 [LINK]
Impacts and Solutions	"Det er vel ganske klart at å forlenge... el eller olje"	It's pretty clear that extending the lifespan of cars is definitely good for the climate, whether they are electric or run on oil.
Impacts and Solutions	"Hvis skolen likevel skal spille... lærerne som ressurser og medspillere."	If the school is going to support climate-concerned students, how about having a climate-Friday at school? The children can learn about the climate in Science, write letters to politicians in Norwegian and English, hold debates in Politics, etc. Use the teachers as resources and collaborators.
Impacts and Solutions	"Idag har jeg ungdom i skolestreik... avholdt på Skype. Ille."	Today I have young people on a school strike. I'm ashamed of my own efforts for the environment. We bought an electric car last year. But did we sell the diesel car? No. The same goes for two other families on the street. Just another car added. I fly to meetings in Oslo that could have been perfectly held on Skype. Terrible.

Activism and Mobilization: Representing 25% of the tweets, this theme highlights the critical role that civil society and grassroots movements play in driving positive change in the face of the climate crisis.

Table 8. Examples Of Tweets related to Activism and Mobilization

Theme	Tweet	English translation
Activism and Mobilization	"Naturvernforbundet legger ut videoer... Foto: [PHOTO CREDIT] [LINK]"	The Norwegian Society for the Conservation of Nature is posting videos and live streaming from the school strike event. Follow the stream here: [LINK] Photo: [PHOTO CREDIT]
Activism and Mobilization	"I morgen stiller jeg for å vise... @Tag1 💚 #varioushashtags"	Tomorrow I will stand to show my support for the youth's climate movement 💪🏻 Thank you @Tag1 💚 #varioushashtags
Activism and Mobilization	"Støt opp og del videre:.[LINK]"	Support and share further: Thousands will school strike for the climate | Nature and Youth [LINK]
Activism and Mobilization	"Skolestreik for klima får frem... Del videre! #varioushashtags"	School strike for climate brings out the best and worst in people. Thousands are now flocking to the streets AND the comment sections are bubbling over with adult bullies, climate deniers, and nasty comments. Everyone can contribute to spreading love in the comment section! Share further! #varioushashtags

6.2.2 Public Perception and Opinions

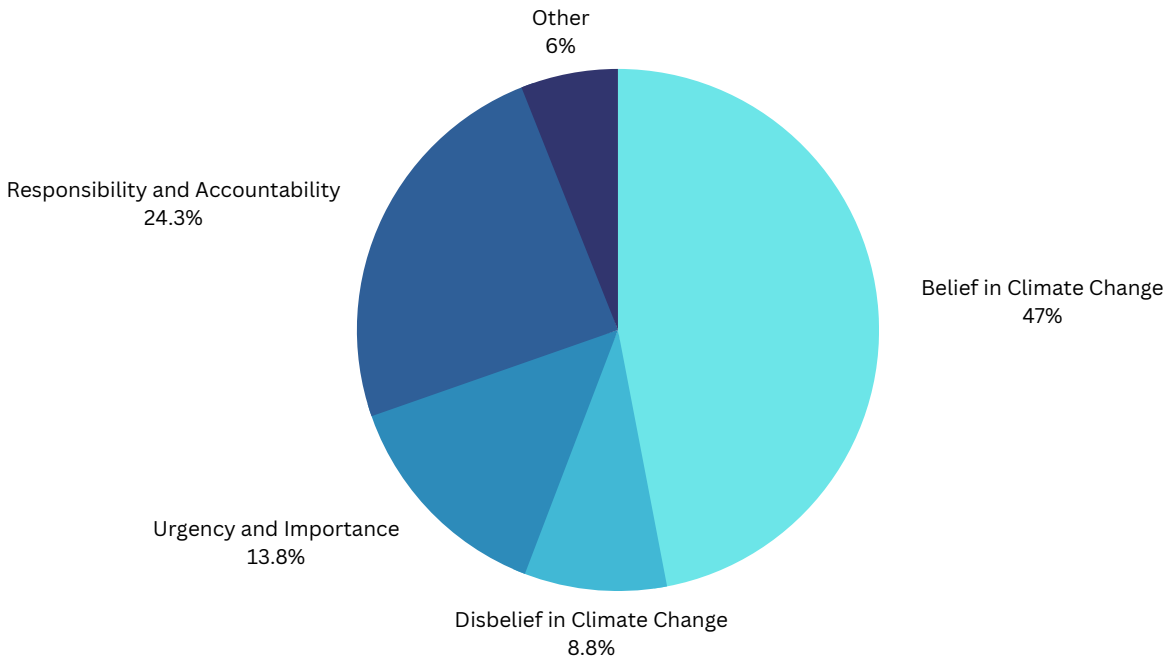

Figure 5. Public Perception and Opinions on Climate Change

Belief in Climate Change: A significant 47% of tweets in this dataset affirmed the existence and severity of climate change, emphasizing the importance of acknowledging its effects and taking action.

Table 9. Examples of Tweets related to Belief in Climate Change

Theme	Tweet	English translation
Belief in Climate Change	“@Tag1 og 3 andre: Hvis du har bevis for...og klimaendringer?”	@Tag1 and 3 others: If you have evidence to the contrary, please share. Hoping for a debate based on research and science, not political rhetoric. What makes you think there's no link between extreme weather and climate change?
Belief in Climate Change	“Kanskje er det ikke så overraskende... fakta. #ulikehashtagger [LINK]”	Perhaps it's not so surprising that [Political Group] is against the climate-striking youth. They likely realize it will be challenging to gain support from a generation that values science and facts. #varioushashtags [LINK]
Belief in Climate Change	“Å nekte for... 11. september-hendelsene.”	Denying human-induced climate change is roughly equivalent to believing vaccines cause autism or that a notable political figure was behind the September 11th events.
Belief in Climate Change	"De som ikke tror på klimaendringer... handle. [LINK]"	Those who don't believe in climate change are no longer the problem. The biggest obstacles now are, ranked from worst to slightly less bad. • Those who say they act, but actually don't (#newgovernment) • Those who think they don't have to change their behavior • Those who don't care enough to act [LINK]

Disbelief in Climate Change: While a smaller fraction, 8.8% of tweets in this dataset questioned the veracity of climate change, reflecting the presence of skepticism and contrasting opinions on the issue.

Table 10, Examples of Tweets related to Disbelief In Climate Change

Theme	Tweet	English translation
Disbelief in Climate Change	“Jeg synes bare synd på ungdom .... #varioushashtags my ass.”	I just feel sorry for the youth who are so misled by political forces that they no longer understand the difference between bullshit and facts - and are then cynically exploited in a political game that ruins the economy for those very children. #varioushashtags society my ass.
Disbelief in Climate Change	“Etter streiken husk ...ryggmargen.”	After the strike, remember to visit the Climate Psychologist; he can cure you. It's worse with the adults who push this scam; their delusions about human-made climate changes have become deeply ingrained.
Disbelief in Climate Change	“Det viktigste er...klima-angst. [LINK]”	The most important thing is to stop and prevent child abuse. I believe that the correct term is child abuse if and when children are scared away from schools and education and into skipping school with terrorizing scare propaganda, doomsday prophecies, and climate anxiety [LINK]
Disbelief in Climate Change	“@Tag1 Propaganda. Det er barn... Skammelig.”	@Tag1 Propaganda. There are children with health damages due to child abuse and serious threats with climate scare propaganda. It's a result of sick climate anxiety and a result of peer pressure, and exploitation that children can skip school if they just become child soldiers for the climate lobby. Shameful.

Urgency and Importance: Capturing 13.8% of the discourse, the tweets in this category emphasized the pressing need for immediate climate action, with sentiments highlighting the pivotal role of the younger generation in climate action.

Table 11. Examples of Tweets related to Urgency And Importance

Theme	Tweet	English translation
Urgency and Importance	"Hvis [Administrative Body] i Norge... DERE ER VÅR FREMTID [LINK]"	If certain administrative bodies in Norway can't grasp the purpose behind the youth's actions tomorrow, they should reconsider their stance... KEEP IT UP, YOUNG PEOPLE, YOU'RE OUR FUTURE [LINK]
Urgency and Importance	"— KJÆRE VOKSNE: [Call to Action]! I dag... #varioushashtags [LINK]"	— ATTENTION, ADULTS: Time to step up! Today marked a significant climate action event. In a particular region, individuals participated. A large number joined nationwide at a specific time. #varioushashtags [LINK]
Urgency and Importance	"Wake up, @Tag1! '[Quote]'... #varioushashtags"	Wake up. @Tag1! '[Quote]' The message is clear: There is no Planet B!' It's essential for decision-makers and influencers to listen to the youth and all supporting the climate cause. #varioushashtags
Urgency and Importance	“Vår tids viktigste beskjed kommer fra fremtiden...Og da må vårt svar være et betingelsesløst ja! #hashtags [LINK”	Our time's most important message comes from the future. The youth turn to us and say: Can you help us save the planet? And our answer must be an unconditional yes! #hashtags [LINK]

Responsibility and Accountability: 24.3% of the tweets in the dataset discussed the theme of accountability, emphasizing the importance of holding various stakeholders, especially the government, responsible for their contributions to climate change.

Table 12. Examples of Tweets related to Responsibility and Accountability

Theme	Tweet	English translation
Responsibility and Accountability	"Det er så mye penger i klima! Politikerne... kan overby [IndustriNavn]..."	There's so much money in climate! The politicians are influenced by certain groups! They seem to have resources that can compete with certain industries...
Responsibility and Accountability	“Reply to @Tag1 and @Tag2: "Ja, vi har god grunn... hva man nå vil gjøre"	Replying to @Tag1 and @Tag2: Yes, there's a good reason, but there aren't any new climate initiatives mentioned here. That's what we want! Many politicians have acknowledged the importance of climate strikes. But one shouldn't support them without specifying the subsequent actions.
Responsibility and Accountability	"Blir bare så glad... som skulker ansvaret sitt. #varioushashtags @Tag3 @Tag4 @Tag5 @Tag6"	I'm so proud of these children and youths! It's not them who are avoiding responsibility, but certain governing bodies. #varioushashtags @Tag3 @Tag4 @Tag5 @Tag6
Responsibility and Accountability	"I [Organization] heier vi på... @Tag7"	In [Organization], we cheer for the youth advocating for a proactive climate policy! We agree with the striking youths that certain authorities must take responsibility if we're to meet our climate goals @Tag7

6.2.3 Alignment with Policies and Initiatives

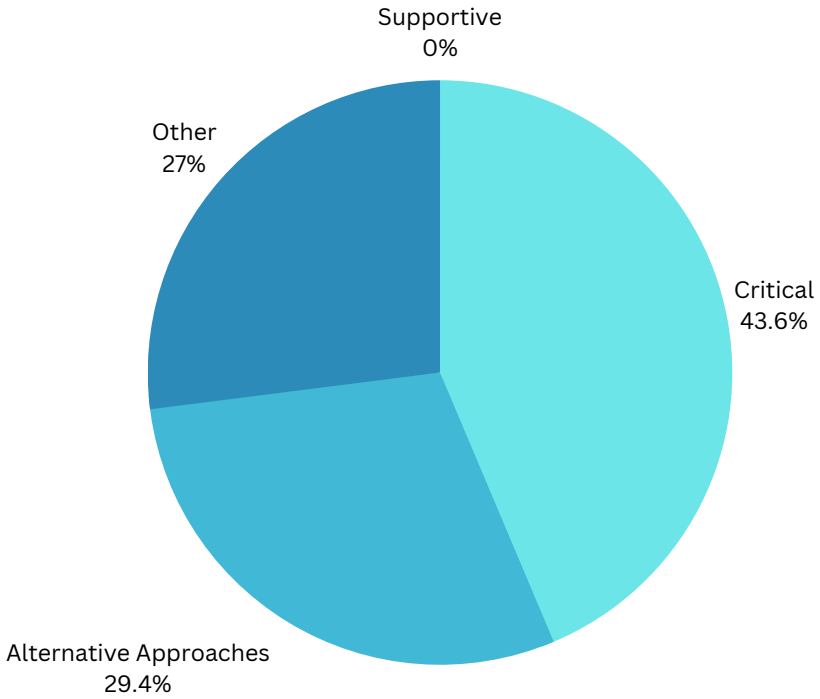

Figure 6. Alignment with Policies and Initiatives on Climate Change

Supportive: In the analysis of tweets related to Norway's policies and initiatives on climate change, no tweets were identified that directly expressed support for Norway's current policies and initiatives regarding climate change.

Critical: 43.6% of tweets in this category conveyed criticisms, highlighting perceived shortcomings in policies and actions related to climate change.

Table 13. Examples of Tweets Critical of Policies and Initiatives

Theme	Tweet	English translation
Critical	“[Person] eier ikke skam - kun ..[Person] [LINK]”	[Person] has no shame - only [Country] is worse in climate ACTION than Norway. - Norway has an ambitious climate policy, and what's new with this government is that we are stepping up our efforts in collaboration with the [Organization]," writes Prime Minister [Person] [LINK].
Critical	“[Political Group]'s bidrag.. trussel mot demokratiet.”	The [Political Group]'s contribution to the recent environmental debate has been something like this: Strikes are good, but Norwegian climate policy is already perfect (even though we miss all climate goals). [Person] is too unconstructive. Climate advocates are a threat to democracy.
Critical	“Klimapolitikk-challenge: Hvilke KONKRETE... mest mulig olje)”	Climate policy challenge: What SPECIFIC political changes are needed in the next 15 years to create a renewable energy success story? (Arguments not allowed: 1. Turn off the tap. 2. Extract as much [Resource] as possible.)
Critical	“Klima. Hva har ...NEI. Er det mer?”	Climate. What have the [Administrative Body] and [Governmental Body] done so far? They introduced zero tax for electric cars... Increased [Tax Name] charges. Increased [Fee Name] charges for fossil cars. Does this matter for the planet? NO. Anything else?”

Alternative Approaches: Representing 29.4% of the discourse, the tweets in this category showcased innovative ideas and alternative viewpoints, emphasizing the importance of diverse strategies and collaboration in addressing climate change.

Table 14. Example Of Tweets Suggesting Alternative Approaches To Policies And Initiatives

Theme	Tweet	English translation
Alternative Approaches	"Jeg er skråsikker, uten [Countries] på miljø laget... håper vi inspirerer andre."	I'm certain that without countries like [Countries] joining the environmental effort, there's no saving the climate to prevent future calamities. What our country does is symbolic, and we hope it inspires others.
Alternative Approaches	"Jeg synes vi burde ha [Resource] i [Country]. Det er ikke greit... burde gå tilbake til folket."	I believe our country should prioritize [Resource]. We're geographically unique and should be recognized for that by international bodies. The benefit from such resources should be more community-focused.
Alternative Approaches	"Det er heller ingen grunn... å skape bedre velferd, istedet for å skade den."	There's no reason to risk the nation's welfare when others aren't taking similar risks. Climate solutions should be international. Our country's small size means we should focus on nation building and welfare instead of jeopardizing it.
Alternative Approaches	"Det beste vi kan gjøre for... en stor skokk med [Job Title]."	The best we can do for the youth and environment is to nurture them into brilliant scientists and engineers who innovate efficient and cleaner solutions. This is beneficial for our country and the environment. A change in focus from traditional roles is needed.

6.3 Sentiment Analysis

Sentiment analysis of the tweets revealed a predominantly positive tone towards climate change. Approximately 581 tweets expressed positive sentiment, and 315 expressed negative sentiment out of the 896 tweets. This indicates an overall positive outlook and support for climate action among Twitter users discussing climate change during the study period. However, it is worth noting that sentiment varied across different themes and topics, with discussions on climate policy and climate justice evoking stronger emotions and polarized opinions. A sentiment score typically represents the sentiment or emotional tone of a piece of text. It is often derived from sentiment analysis models or algorithms that analyze text data and assign a score based on the perceived sentiment. Given the score of 0.99498786 on a 0 to 1 scale, this would indicate a very positive sentiment related to tweets on the school strike for climate on Twitter.

6.4 CICERO's Survey: Norwegians' Attitudes Towards Climate Change

In 2019, CICERO conducted a climate survey and report on *'Folk og klima: Nordmenns holdninger til klimaendringer, klimapolitikk og eget ansvar'* (English: Norwegian attitudes towards climate change, climate policy, and personal responsibility). The data collected in this report offered insights into Norwegians' perspectives on climate change, policy, and individual responsibility. The findings of this study showed that a large majority of the population believes that climate change is occurring, has negative consequences and that human activity affects the climate. Most of the study participants also thought they had a responsibility to reduce their emissions. Furthermore, a large majority believed that all sectors and actors were responsible for reducing emissions and that other countries should not

cut more emissions than Norway. Generally, support for price increases is low, while support for wind power development is high, although the latter declined from 2018 to 2019. The data did not provide a definitive insight into what the population believes should be done to reduce emissions at an individual level and in terms of policy (Aasen et al., 2019).

Furthermore, the report found that younger individuals, especially those aged 18-29 years and, to a lesser extent, those aged 30-44 years, were more likely to attribute climate change to human actions than older age groups. Younger individuals were also more concerned, more willing to change their behaviors, and more supportive of climate policies. Overall, women expressed higher levels of concern than men. The higher the education level for all groups, the more concern and proactive stance was displayed. In contrast, wealthier individuals, those earning over NOK 800,000 annually, were less concerned and proactive. Individuals residing in Oslo and Akershus regions were more engaged and concerned than individuals in other regions in Norway. Individual actions seemed to be influenced significantly by their social circles (Aasen et al., 2019).

Regarding political affiliations from the Norwegian 2017 parliamentary elections, voters of the Green Party, Socialist Left Party, Red Party, Liberal Party, and Labor Party were more concerned about the climate and proactive than Conservative Party voters. Progress Party voters showed even less concern than Conservative voters. Centre Party and Christian Democratic Party voters held views similar to Conservatives but were slightly more concerned. Green Party voters were the most supportive of climate policies, whereas Progress Party voters were the least. In summary, the findings from this study underscored an increasing need for leadership in tackling GHGs. Collaboration between businesses,

politicians, and civil society was identified as key stakeholders of this study. Findings also suggested that societal norms noticeably influenced public actions (Aasen et al., 2019).

6.5. Summary of Findings

In a study conducted between May 6th and May 16th, 2023, 1,068 tweets related to the school strike for climate were manually collected. After excluding 172 tweets based on set criteria, 896 tweets remained for analysis. The distribution showed a marked increase in activity around protest days. A word cloud visualization of these tweets revealed dominant terms such as '*climate*', '*climate change*', and '*strike*'. Other notable terms included '*oil*', '*youth*', and '*politicians*', pointing towards discussions on Norway's oil and gas exploration, youth involvement, and policy considerations.

The thematic analysis classified results under three categories: Themes and Topics, Public Perception and Opinions, and Alignment with Policies and Initiatives. For themes and topics, notable discussions included the validity of school absences as activism (30.9%), policy and government considerations (11.9%), scientific findings (8.9%), impacts and solutions to climate change (16%), and activism and mobilization efforts (25%). Public perception and opinions were categorized into belief in climate change (47%), disbelief in climate change (8.8%), the urgency of action (13.8%), and accountability (24.3%). Regarding alignment with policies and initiatives on climate change, there were no tweets expressing support for Norway's current policies. However, 43.6% of tweets were critical of the policies, and 29.4% discussed alternative approaches. Sentiment analysis showed a generally positive sentiment towards climate change. Of the 896 analyzed tweets, 581 expressed positive

sentiment, and 315 were negative. The sentiment score was 0.99498786 on a 0 to 1 scale, indicating a very positive sentiment in discussions around the school strike for climate.

A separate 2019 survey by CICERO focused on Norwegian attitudes towards climate change. Results showed a majority believes in climate change, its negative consequences, and human influence on it. Most felt a personal responsibility to reduce emissions and believed all sectors should contribute. Younger individuals, particularly those aged 18-29, were more likely to attribute climate change to human actions and were more proactive. Women, in general, showed more concern than men, and individuals with higher education levels were more proactive. Geographically, residents of Oslo and Akershus were more engaged. Political affiliations also influenced views, with Green Party voters being the most concerned and supportive of climate policies, while Progress Party voters were the least. The study highlighted the importance of collaboration among businesses, politicians, and civil society and indicated that societal norms significantly influence public actions.

Chapter 7: Discussion

This chapter begins with a discussion on the broader Norwegian attitudes to provide insight into the general perspectives on climate change within Norway to address RQ2. The role of Twitter, whether as a reflection or amplifier of these views, is then discussed to question the role of the platform in mirroring or magnifying prevailing views. Subsequent sections dissect the specific Twitter discourse, identify dominant narratives and themes, and analyze sentiments and their broader implications. The relationship between public opinion and SMPs is also addressed. The chapter concludes by discussing the potential impact of these findings on climate policy, activism, and public discourse in Norway.

7.1 The Landscape of Climate Change Discourse in 2019

The year 2019 was a significant turning point in the climate change discourse, both globally and specifically in Norway. The global climate movement witnessed an unprecedented surge in activism, led by youth and student groups, fueled in large part by Greta Thunberg's school strikes. In Norway, this activism intersected with the nation's longstanding dilemma: its role as a leading oil and gas producer versus its commitment to environmental commitments. At the heart of the discourse in Norway was the controversial decision to grant licenses for oil and gas exploration in environmentally sensitive regions, particularly the Lofoten, Versterålen og Senja areas of the Norwegian Continental Shelf (Henderson & Loe, 2014). These decisions came under significant scrutiny in 2019, as they juxtaposed Norway's efforts to portray itself as a global leader in sustainability and climate action. The younger generation, who had been galvanized by global movements such as the school strikes for climate, became particularly vocal critics of these policies. They were joined by environmentalists, indigenous communities, and a segment of the broader Norwegian populace in their opposition to further fossil fuel exploration, especially in ecologically fragile areas such as the Arctic (Dusik, 2022; Hoff-Elimari, 2020; Naturvernforbundet, 2022; NRK, 2019).

The Climate Discourse Alignment Theory (CDAT) provides an analytical lens to understand these dynamics. CDAT posits that shifts in public discourse can be mapped based on how media narratives align with broader societal values and priorities. In 2019, the Norwegian media gave significant coverage to the global climate movement, the school strikes, and contentious local issues such as Arctic oil exploration. These narratives converged, creating an inflection point in the public discourse. The media's emphasis on the

immediacy of climate threats, combined with its portrayal of youth-led activism and the contentious issue of Arctic oil exploration, likely influenced public sentiment and brought environmental concerns to the fore. This alignment is evident when analyzing Twitter data from the study period. For instance, 25% of the climate-related tweets from Norway in 2019 revolved around activism and mobilization efforts. The school strike movement, in particular, was a dominant theme, highlighting the role of younger generations in shaping the discourse. This digital activism was not limited to youth; many Norwegians took to Twitter to express their dissatisfaction with the perceived gap between Norway's environmental commitments and its continued investment in fossil fuel exploration. The analysis of such tweets reveals a palpable sense of urgency, with many users advocating for immediate action to address climate change and halt potentially harmful exploration activities.

As highlighted by studies such as those of Moe et al. (2023), the digital realm played a pivotal role in shaping public perceptions and discourse around climate change in Norway. The study underscored the complex interplay between mainstream media and platforms such as Twitter in influencing public opinion. While traditional media sources provided depth and context, Twitter served as a platform for real-time discussions, debates, and activism (Moe et al., 2023). In conclusion, the climate change discourse in Norway in 2019 was characterized by a heightened sense of urgency, influenced by global movements, media narratives, and contentious domestic policies. The complex relationship between Norway's oil interests and its environmental commitments was thrust into the limelight, prompting widespread debate and activism. Platforms such as Twitter played a central role in this discourse, allowing Norwegians from all walks of life to voice their concerns, share information, and advocate for change.

7.1.1 Broader Norwegian Attitudes

To understand if a discourse genuinely mirrors broader perspectives or if it amplifies certain polarized views, CDAT integrates the echo chamber theory. An echo chamber effect occurs when a platform or community predominantly reflects and amplifies a particular viewpoint, often at the expense of others. On Twitter, the dominant sentiment towards the school strike for climate suggests the presence of such an effect. The lack of tweets supporting Norway's current policies further strengthens this argument. Comparing this with broader Norwegian perspectives from the 2019 CICERO survey, it becomes evident that Twitter might not be an exact mirror of general Norwegian views. Instead, it may intensify certain perspectives.

Beyond street marches and sit-ins, young activists have effectively used social media to amplify their message, garnering extensive support. As highlighted by Greijdanus et al. (2020), the complex relationship between online and offline activism has been a topic of much discussion in the literature. These activists' digital efforts are part of a larger national context, where Norway's stance on climate change is both forward-thinking and paradoxical (Greijdanus et al., 2020). Lahn (2019) pointed out the growing divergence in opinions regarding the future of Norway's oil and gas industry, which can be seen as a reflection of this paradox (Lahn, 2019). This dynamic interplay between environmental commitment and economic interests sets the stage for the research questions this study addresses.

The thematic analysis unveils the dominant frames of the discourse: (a) validity of school absences as activism; (b) policy and government considerations; (c) scientific findings; (d) impacts and solutions to climate change; (e) activism and mobilization efforts. For example, discussions around the validity of school absences highlight a frame that

scrutinizes the legitimacy of student activism. Sentiment analysis insights suggest the framing of the discourse in a positive light, with a notably positive sentiment score. Societal views on climate change in Norway, as evidenced by tweets, align with global environmental concerns. Expressions such as *"The message is clear: There is no Planet B! It's essential for decision-makers and influencers to listen to the youth and all supporting the climate cause. #varioushashtags"* and *"Rising sea levels are not just predictions; coastal cities are at risk now"* portray an informed community advocating for climate action. This discourse mirrors the findings of the CICERO report on climate change framing in Norwegian society, which emphasizes concerns, personal responsibility, and human impact.

The CICERO's 'Folk og klima rapport' (2019) affirms these findings, highlighting a prevailing sense of urgency and responsibility towards climate change in Norway. Moe et al. (2023) further underscored the impact of social media in shaping these public perceptions, especially in the context of global issues such as the COVID-19 pandemic and the perception of urgent matters such as climate change (Moe et al., 2023). In 2019, most Norwegians acknowledged human activities as a direct cause of climate change, emphasizing the need for immediate action. This sentiment manifested in the growth of climate marches, sustainability initiatives, and eco-conscious consumerism. Compared to previous years, 2019 marked a notable increase in climate awareness and activism in Norway, attributed to global activism and the visible effects of climate change. Globally, Norway's proactive stance on climate change in 2019 stood out. However, the presence of tweets challenging climate change or critiquing youth activism underscores the diversity of beliefs, even in progressive nations such as Norway. Such contrarian views highlight the importance of comprehensive approaches such as CDAT in analyzing these discourses.

7.1.2 Twitter as a Reflection or Amplifier

Twitter's role in shaping public perception and discourse is profound. As Moe et al. (2023) emphasized in their study on the impact of social media in shaping public perceptions around the climate crisis in Norway, platforms such as Twitter can significantly influence how people perceive and engage with urgent issues. This is particularly true for matters that are of global relevance and local significance, such as the climate crisis and Norway's paradoxical stance as both a climate leader and a major oil and gas producer. Greijdanus et al. (2020) observed a correlation between online and offline protests, suggesting that platforms such as Twitter might mirror real-world sentiments and activism. In the context of Norway's climate discourse, tweets that discuss mobilization, call for climate action, or emphasize the urgency of the climate crisis are reflective of broader Norwegian sentiments. This aligns with the conclusions of Moe et al. (2023) that mainstream news is a major source of polarizing information, while Twitter, with its inherent brevity and immediacy, might amplify these sentiments.

The thematic analysis of tweets reveals that, much like Veltri and Atanasova (2017) stated, information on Twitter is presented based on user preferences and is often conversational. This means that Twitter discourse around climate change in Norway could be both a reflection of individual users' beliefs and a collective response to dominant narratives in the broader society. For instance, the surge in tweets during significant climate events, as observed by Kirilenko and Stepchenkova (2014), could be indicative of Twitter's role as a reflection of societal concerns. However, this reflective capacity does not negate Twitter's potential to also amplify certain views. For instance, as Cody et al. (2015) found, climate change activists' voices were more prevalent on Twitter, suggesting the platform's ability to

magnify certain narratives. While this might be indicative of a broader global momentum around climate action, it's also a testament to Twitter's potential as an amplifier.

Considering the factors that might cause this alignment or divergence between Twitter views and broader attitudes: (1) demographic influence: Twitter's younger-skewed user base might inherently be more climate-conscious, resonating with the findings of studies and opinion pieces such as Dusik (2022) and Hoff-Elimari (2020) which observed younger generations advocating for more aggressive climate actions; (2) algorithmic influence: as Veltri and Atanasova (2017) noted, information on Twitter is curated based on user preferences. This engagement-driven approach could, at times, create echo chambers that amplify extreme views; (3) and global influence: given that Twitter is a global platform, it exposes Norwegian users to international climate narratives. This international exposure, combined with Norway's paradoxical role in the global climate discourse, as highlighted by Anker (2018) and Korsnes et al. (2023), creates a unique blend of opinions and sentiments on the platform. In conclusion, while Twitter does reflect a variety of Norwegian sentiments on climate change, its nature as a platform means it also amplifies certain views. As Norway grapples with its role in the global climate landscape, Twitter serves as both a mirror to its societal concerns and a megaphone for dominant narratives.

7.2 Dissecting the Twitter Discourse

7.2.1 Dominant Narratives and Themes

The analysis of tweets uncovers dominant themes that resonate with citizens when discussing climate change. Prominent themes such as 'Policy and Government', 'Science and Facts', and 'Activism and Mobilization' underline a populace deeply engaged in conversations

about governmental actions, scientific discoveries, and grassroots initiatives related to climate change. According to CDAT's interpretation of the agenda-setting theory, media has a significant role in steering public attention towards particular topics. This echoes the findings of Veltri and Atanasova (2017), who argue that Twitter information is curated based on user preferences and relevance, often focusing on what is significant for their respective audiences. Dominant terms seen in the word cloud visualization, such as ‘climate’, ‘climate change’, and ‘strike’, highlight the primary themes that framed the Twitter discourse during the study period. This observation aligns with the agenda-setting theory, suggesting that these subjects garnered considerable public attention. The noticeable uptick in activity on days of protests underscores the capacity of events to push specific issues into the limelight, emphasizing their influence on public discourse. Additionally, the surge in Twitter activity during major events, as observed by Kirilenko and Stepchenkova (2014) during weather events, can also be paralleled to the uptick in activity during protests, emphasizing the importance of real-world events in shaping online discourse.

Incorporating framing theory, CDAT suggests that media not only pinpoints the topics that catch the public's eye but also shapes perceptions around them. Discussions arising from the thematic analysis, such as debates on the legitimacy of school absences as a form of activism and policy considerations, illustrate the diverse perspectives with which the school strike and climate change were viewed. The sentiment analysis score of 0.99498786 points to a predominantly positive sentiment surrounding the school strike discourse on Twitter. Narratives centered on policy and government, especially those critical of the government's approach or lack of action, depict a vigilant citizenry keen on holding its leaders accountable. Tweets emphasizing scientific findings reflect a society that heavily relies on empirical evidence and scientific consensus when forming opinions on climate change. Interestingly,

the analysis found no tweets voicing support for Norway's current climate change policies and initiatives. This observation could hint at a gap in the discourse or possibly indicate significant criticism of the nation's climate approach.

The critiques and narratives surrounding Norway's climate policies and actions can be contextualized with Voigt (2021)'s observation about Norway's paradoxical stance on climate change. While Norway is active in international climate discussions and has ambitious domestic targets, its global GHG footprint, due to its energy exports, is a significant challenge. This could explain the lack of tweets supporting Norway's current climate policies, highlighting the criticisms found in the Twitter discourse. Additionally, the discussions and debates observed in the Twitter discourse, especially those surrounding policy considerations, resonate with Moe et al. (2023)'s study. They found that platforms such as Twitter, with limited character counts, might not offer in-depth discussions, but they are crucial in shaping public perceptions and discourse. The polarized views on platforms such as Twitter, especially concerning climate change in Norway, emphasize the importance of such platforms in national discussions.

7.2.2 Sentiments and Their Implications

Analysis of the tweets revealed a notably positive tone towards climate change. Of the tweets analyzed, around 581 conveyed a positive sentiment, with 315 expressing a negative view. This significant tilt towards a positive perspective on climate change, coupled with the minimal support for Norway's current policies, hints at the potential presence of an echo chamber among Twitter users discussing the topic during our study. Drawing from the insights by Greijdanus et al. (2020), the inherent characteristics of SMPs can both enable and enhance online activism. This ability of SMPs to allow individuals to link personal

experiences to collective causes might be influencing the strong positive sentiment observed in our study. However, as Greijdanus et al. (2020) suggests, there is an inconclusive relationship between online activism and tangible offline engagement. It's worth noting, therefore, that while Twitter sentiment is overwhelmingly positive, it may not necessarily translate into offline action or represent the broader Norwegian sentiment, as seen in the CICERO survey.

This positive sentiment signifies a widespread desire for change and proactive measures, which could drive public demand for more rigorous climate policies. It also indicates a broad acceptance of the scientific consensus on climate change, coupled with a readiness to partake in discussions centered on solutions. Veltri and Atanasova (2017) had highlighted the conversational nature of Twitter, where discussions are influenced by what users find significant. This observation might explain why the platform appears to be fostering a particularly positive dialogue on climate change. However, the divergence in views on subjects such as climate policy and justice underscores the challenges confronting policymakers. While the demand for action is evident, the specifics of that action—including the choice of policies, strategies, and resource allocation—remain contested. Moe et al. (2023) explored similar sentiments, noting the perception of polarization within different media landscapes and the potential overestimation by some participants of their ability to discern and navigate misinformation. This disparity highlights the importance of adopting a policy-making approach that incorporates diverse perspectives, emphasizing both environmental and social justice.

When juxtaposed with the 2019 CICERO survey, which documented varied views influenced by demographics and political affiliations, the potential echo chamber effect on

Twitter becomes even more apparent. In fact, studies such as the one by Kirilenko and Stepchenkova (2014) have shown that discussions about climate change on Twitter can exhibit significant temporal fluctuations, often influenced by major events. In another dimension, Cody et al. (2015) found that responses to climate change news on Twitter were predominantly from climate change activists. This could further explain the strong positive sentiment observed in our analysis. It is, however, critical to remain cautious when interpreting these findings and drawing broader conclusions about the general population's stance.

7.3 Implications and Intersections

7.3.1 The Interplay of Public Opinion and Social Media

Twitter, as underscored by this study, serves as a significant indicator of public sentiment. It not only mirrors societal views but actively shapes them, fostering dialogue, debate, and information dissemination. As highlighted by Greijdanus et al. (2020), the literature on online activism reveals that social media platforms possess unique characteristics that enable them to both reflect and mold public sentiment. These platforms serve as dynamic spaces where individuals express their views, connect with like-minded communities, and engage in collective causes. Moreover, the influence of online activism on offline actions remains a topic of debate, as seen in the inconclusive findings in the literature. This raises intriguing questions about whether Twitter discussions on climate change, for example, can translate into tangible changes in public sentiment, a theme explored further in subsequent sections. Twitter's distinctive features, as discussed by Veltri and Atanasova (2017), significantly contribute to its role in shaping public discourse. The platform's curated and audience-targeted information dissemination fosters conversations that are influenced by

users' preferences and connections. This characteristic aligns with Moe et al. (2023), who found that Twitter plays a significant role in shaping public perceptions and discourse, especially regarding pressing issues such as climate change in Norway. While platforms such as Twitter reflect overarching public attitudes, they simultaneously mold and intensify particular narratives, impacting public sentiment in turn.

Cody et al.'s (2015) study on Twitter's responses to climate change news adds another layer to understanding. Their findings emphasize the presence of climate change activists on Twitter, suggesting that the platform amplifies the voices of those advocating for action. While it's crucial to acknowledge the study's limitations, it underscores Twitter's potential to influence public sentiment by highlighting climate change concerns. In Norway, where environmental awareness is particularly high, the interplay between public opinion and social media is of paramount importance in shaping discussions around climate change. As seen in the literature, the dynamic nature of Twitter allows for the rapid emergence of fresh perspectives and narratives. This has the potential to alter widespread sentiment or spotlight neglected concerns. However, it's essential to keep in mind that the demographics of Twitter users may not always represent the broader populace, potentially introducing biases in the representation of public opinion. In conclusion, the relationship between public opinion and social media, especially Twitter, is a complex and reciprocal one. These platforms both reflect and influence public sentiment, with studies highlighting the potential for Twitter to shape climate change discourse in Norway by amplifying the voices of activists and providing a platform for diverse perspectives to emerge. As we proceed, the implications of this dynamic interplay for public perception, activism, and awareness in the context of Norway's climate policy landscape will be explored further.

7.3.2 Policy, Activism, and Public Discourse

Tweets focusing on the government's role in climate change reveal the public's expectations from policymakers, with significant implications for climate change activism, policy-making, and public discourse in Norway. Within the realm of climate change activism, the predominantly positive sentiment found on Twitter suggests a favorable environment for mobilizing support, increasing awareness, and fostering grassroots initiatives. As highlighted by Cody et al. (2015), Twitter discussions predominantly involve climate change activists, underscoring the platform's potential to amplify advocacy messages. Additionally, Pearce et al.'s (2014) findings emphasize that Twitter discourse effectively captures public sentiment and willingness to engage in climate policy debates.

This positive sentiment provides a platform for activists to mobilize public support, rally for specific causes, and hold policymakers accountable. Greijdanus et al. (2020) acknowledge that social media platforms, including Twitter, serve as vital tools for nurturing online communities and facilitating collective action. This is particularly relevant to climate change activism, where individuals can unite to raise awareness, organize events, and advocate for climate action. In the sphere of policy-making, the nuanced and sometimes polarized opinions surrounding climate policy and justice underscore the challenges faced. While there is an evident call for action, the specifics of these actions, encompassing strategies, policies, and resource allocation, remain subjects of contention. Policymakers confront the task of navigating these complexities, ensuring policies align with both environmental objectives and societal expectations.

The research by Moe et al. (2023) offers insight into the intricacies of climate policy debates in Norway, highlighting diverse perspectives and nuances that policymakers must

navigate. It is imperative that climate policies harmonize environmental objectives with societal expectations. The active participation on Twitter suggests a demand for transparent, inclusive, and consultative policy-making processes. Kirilenko and Stepchenkova's (2014) study illuminates how Twitter discussions can impact public perceptions and policy deliberations, particularly during pivotal moments. The dynamic nature of Twitter discussions, often coinciding with significant climate-related events, underscores the platform's potential to shape public discourse and influence policy decisions.

In the context of public discourse in Norway, the findings underscore the evolving nature of climate change conversations. The discourse has moved beyond questioning the existence of climate change, transitioning into discussions on solutions, responsibilities, and the societal implications of a changing climate. This evolution reflects heightened awareness and education on the subject, but also highlights the challenges as the nation grapples with the multifaceted dimensions of climate change. In conclusion, the interplay between public opinion, social media, and the broader implications of Twitter discourse paints a complex yet optimistic picture. It portrays a nation that is engaged, informed, and prepared to take action while navigating the complexities of a global crisis. The diversity of opinions expressed in tweets underscores the importance of public discourse in shaping policy decisions. Tweets that critique government policy or propose alternative approaches emphasize the role of public opinion in holding leaders accountable and influencing policy reforms. Simultaneously, the considerable support for youth activism and climate action on Twitter underscores the impact of grassroots movements on public sentiment. These nuanced discussions, as illuminated by the studies, emphasize the importance of policymakers considering a range of perspectives as they formulate climate policies to steer Norway's future.

Chapter 8: Conclusion

The 2019 Norwegian school strike for climate, as reflected in Twitter discourse, offers a unique lens through which to understand the broader Norwegian attitudes on climate change. Utilizing the Climate Discourse Alignment Theory (CDAT), which combines the principles of Agenda Setting, Framing, Social Movement and Echo Chamber theories, this thesis explored the intricate layers of the public discourse. Addressing the primary research question RQ1, the Twitter discourse surrounding the school strike revealed several dominant narratives and sentiments. These narratives, framed in terms of urgency, critique, and activism, showcased the multifaceted nature of public opinion on climate change, aligning with the Framing component of CDAT. Key themes that emerged highlighted the urgency of the climate crisis, the role of youth in climate activism, and the need for systemic change. In response to RQ2, it is evident that the views expressed on Twitter during the school strike were not isolated sentiments but rather echoed the larger concerns and perspectives of the Norwegian populace, as highlighted by the agenda-setting component of CDAT. Through a comprehensive analysis of CICERO's survey, the findings indicated that the predominant attitudes toward climate change in Norway in 2019 were largely in favor of action to combat the crisis. The majority of Norwegians recognized the severity of the issue and expressed support for measures to mitigate its impact. The school strike Twitter discourse, in many ways, served as a manifestation of these broader societal concerns, resonating with the Social Movement component of CDAT.

While this thesis presents an opportunity to explore Twitter conversations during Norway's largest climate demonstration, it is important to recognize the limitations of this study. These limitations, further described below, include the generalizability, sample

representativeness of Twitter users, bias and limitation of content analysis, temporal limitations, ethical considerations, and financial constraints in obtaining Twitter data. The generalizability of the findings in this research is limited due to several factors. Firstly, the specific contextual factors of the Norwegian socio-cultural, political, and environmental landscape may influence the effectiveness and dynamics of Twitter as a platform for climate-related mobilization and activism. Therefore, the conclusions drawn from this study may not be directly applicable to other countries or regions with different contextual characteristics. Furthermore, the focus on a specific youth climate protest in Norway means that the findings may not be generalizable to other types of climate protests or activist movements. Additionally, the characteristics of Twitter users who engage in climate-related discussions and activism may not represent the broader population, leading to potential limitations in generalizing the findings to the wider public. Technological and temporal factors also contribute to limited generalizability, as the role of SMPs in mobilization and activism is continually evolving. As such, the findings may be specific to the time period and technological context of the research, making it challenging to apply the results to different timeframes or technological landscapes.

In conclusion, the 2019 Norwegian school strike for climate and the accompanying Twitter discourse provide valuable insights into the nation's collective consciousness regarding climate change. The alignment between the sentiments expressed on Twitter and broader Norwegian attitudes, as explored through the CDAT framework, underscores the importance of social media as a reflection of societal values and concerns. However, there remain several avenues for further exploration and research. Future research should consider a longitudinal analysis of Twitter sentiments on climate change in Norway to discern evolving trends. A comparative study with other countries could elucidate cultural or political

nuances in climate activism discourse. The evident climate skepticism within the dataset suggests a need for a focused study on its origins and narratives. Additionally, the influence of key figures on the discourse, potential disparities between online and offline sentiments, and the role of visual media on Twitter warrant in-depth investigation. A random sampling of advanced sentiment analysis techniques of users discussing climate change over the course of months could refine our understanding of subtle thematic shifts. Lastly, expanding the scope to include other SMPs and assessing the direct policy impacts of digital activism in Norway would provide a holistic view of the climate change dialogue. The intricate interplay between Twitter and societal discourses on climate change underscores the platform's dual role in shaping and reflecting public opinion. This study, grounded in the CDAT framework, emphasizes the importance of recognizing these dynamics when determining the impact of digital discourse on real-world attitudes and beliefs.

Appendix A: Translation of climate-related terms:

Translations of climate-related terms from Norwegian to English on Twitter facilitate understanding across languages and cultures:

Norwegian term	*English Translation*	*Definition*
Bærekraft	Sustainability	"Bærekraft" translates to "sustainability" in English. It refers to the ability to meet the needs of the present generation without compromising the ability of future generations to meet their own needs, considering social, economic, and environmental factors.
Klima	Climate	The term "klima" simply means "climate" in English. It refers to the long-term weather patterns and conditions of a particular region or the Earth as a whole.
Klimaaksjon	Climate Action	A "klimaaksjon" translates to “climate action” and is a term used to describe collective efforts or activities taken to address climate change. It can involve various actions such as reducing emissions, promoting renewable energy, advocating for policy changes, or raising awareness.
Klima-demonstrasjon	Climate Demonstration	The term “klimademonstrasjon” translates to “a climate demonstration” is a public gathering or event where people come together to express their support for action on climate change. It typically involves speeches, signs, marches, or other forms of peaceful protest to raise awareness.
Klimaendringer	Climate Change	"Klimaendringer" means "climate change" in English. It refers to the long-term alterations in temperature, precipitation patterns, wind patterns, and other aspects of the Earth's climate system.
Klimapolitikk	Climate Policy	"Klimapolitikk" translates to "climate policy" in English. It refers to the actions, regulations, and measures implemented by governments or organizations to address and mitigate climate change.
Miljø	Environment	"Miljø" translates to "environment" in English. It encompasses the natural surroundings, including air, water, land, ecosystems, and the interplay between living organisms and their environment.
Miljøaktivisme	Environmental Activism	Miljøaktivisme" translates to "environmental activism" in English. It refers to efforts and actions undertaken by individuals or groups to protect and preserve the natural environment and promote sustainable practices.
Natur	Nature	"Natur" simply means "nature" in English. It encompasses all living and non-living things occurring naturally, including plants, animals, landscapes, and the physical elements of the Earth.
Naturvern	Conservation	"Naturvern" means "conservation" in English. It refers to the protection and preservation of natural resources, ecosystems, and biodiversity through sustainable practices and the prevention of environmental degradation.
Parisavtalen	Paris Agreement	"Parisavtalen" translates to "Paris Agreement" in English. It refers to an international treaty adopted in 2015, aiming to combat climate change by limiting global warming and enhancing countries' efforts to adapt to its impacts.
Protestmarsj	Protest March	A "protestmarsj" is a march or procession organized as an act of protest or dissent. It involves a group of individuals walking together in public spaces to express their grievances, demands, or opposition to a particular issue or policy.
Skole	School	The term "skole" simply means "school" in English. It refers to an educational institution where students receive formal instruction and acquire knowledge and skills under the guidance of teachers.
Streik	Strike	"Streik" translates to "strike" in English. It refers to a collective action where workers refuse to work as a form of protest against unfair labor conditions, wages, or other grievances they may have with their employers.

Appendix B: Twitter Defined

Term	Definition
@ (Mention)	Used to mention or reply to someone on Twitter.
# (Hashtag)	A keyword or phrase preceded by the # symbol, used to categorize tweets.
Follow	To subscribe to someone's updates on Twitter.
Follower	Someone who subscribes to receive your updates.
Following	The people whose updates you have subscribed to.
Like	To show appreciation for a tweet. It is marked by a heart icon.
List	A curated group of Twitter accounts that one can create or follow.
MT (Modified Tweet)	Used to indicate that a retweet has been altered from the original.
Profile	The page that displays information about a user and their tweets.
Quote Tweet	A way to share another person's tweet with added commentary.
RT (Retweet)	To share another user's tweet to your followers.
Tweet	A message posted on Twitter containing up to 280 characters.

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