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A Climate Election? Communicating Environmental Issues in Election Campaigning

A quantitative content analysis of the Norwegian parties' posts Facebook and Instagram during the 2021 election campaign

Masteroppgave i Medier, kommunikasjon og informasjonsteknologi
Veileder: Melanie Magin

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Abstract

Climate change is discussed as the greatest challenge of our time, and it is progressively more required of politicians take action to save the planet. With the increasing number of publications of new reports warning of a “code red” for humanity, Norway’s 2021 election were widely referred to as a climate election. When the environmentally focused parties did not make it into the government, there was doubt that it the election in fact was a climate election. This master’s thesis studies the ten parliament parties’ communication on environmental and energy policy on Facebook and Instagram during the 2021 Norwegian election campaign. Through a quantitative content analysis of the parties and their top candidates’ posts on social media, the parties’ engaging in communication on environmental issues are investigated. Theoretical concepts in strategic political communication on social media, as well as communication and visualization of climate, provide a good framework for uncovering politicians’ strategies on social media. The analysis shows that the parties whose main focus is environmental policy are also most involved communication about the topic on their social media platforms. However, the parties are not as clear in their communication about what actions they want to introduce to solve the problem. In addition, the results show that politicians are cautious about presenting climate change as frightening and serious problem, and something that voters must take responsibility for. The results of the analysis are important contributions to a field of research that is largely focused on traditional media as well as climate stakeholders other than politicians.

Sammendrag

Klimaendringer omtales som vår tids største utfordring, og det kreves stadig mer av politikerne for å redde kloden. Med stadig flere publiseringer av nye rapporter som roper «kode rød» for menneskeheten, ble Norges stortingsvalg 2021 mye omtalt som et klimavalg. Da de miljøfokusede partiene ikke kom i regjering sådde dette derimot tvil hos mange om valget faktisk endte som nettopp et klimavalg. Denne masteroppgaven studerer de ti stortingspartienes kommunikasjon om miljø- og energipolitikk på Facebook og Instagram under den norske valgkampen i 2021. Gjennom en kvantitativ innholdsanalyse av partiene og deres partilederes poster på sosiale medier, undersøkes partienes deltakelse i kommunikasjon om miljø- og energipolitikk og utformingen av deres miljørelaterte budskap. Teoretiske konsepter innen strategisk politisk kommunikasjon på sosiale medier, samt kommunikasjon og visualisering av klima legger et godt rammeverk for å avdekke politikernes strategier på sosiale medier. Analysen viser at partier som har miljø som hovedfokus engasjerer seg mest i slik kommunikasjon på sine sosiale medier. Likevel er ikke partiene like tydelige i sin kommunikasjon om hvilke tiltak de ønsker å innføre. Samtidig viser resultatene at politikerne er forsiktige med å fremstille klimasaken som et skremmende og alvorlig problem, og noe som potensielle stemmegivere må ta ansvar for. Disse resultatene er et viktig tilskudd til et forskningsfelt som i stor grad har fokusert på tradisjonelle medier samt andre klimainteressenter enn politikere.

Preface

This master's thesis marks the final chapter of my education in media, communication, and information technology. The past two years have taught me much more than just media logic and web technology. Although these are great skills to have going into a new job, my biggest takeaway is the confidence I have gained in myself and in my competence. I owe the biggest thank you to my supervisor, Melanie Magin, who have guided and motivated me, and quickly rescued me when I have been lost in endless amounts of data material. I also want to thank my classmates. Never have I met a warmer and more inclusive group of people than you. I am truly proud of being part of such a wonderful and fun group, and I am looking forward to continuing the madness in Oslo. Lastly, I want to thank my family and friends their immense love and support.

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1 Introduction

Climate change as a result of human actions is often described as the greatest challenge of our time. The consequences of climate change have been described as dramatic. Extreme weather could affect the living conditions of millions of people and drive them to flee. Climate change can lead to increased competition for drinking water and other natural resources, and thereby contribute to increased levels of tension in many parts of the world.

1.1 The climate election of 2021

The Norwegian 2021 election campaign take-off was abruptly interrupted by the release of The Intergovernmental Panel on Climate Change (IPCC)'s new report calling for "code red" for humanity. "The alarm bells are deafening, and the evidence is indisputable. Climate emissions from the burning of fossil fuels and deforestation are suffocating our planet and pose an immediate threat to millions of people", said the UN Secretary General António Guterres (FN-sambandet 2021). The report showed that global average temperature had already risen by 1.1 degree Celsius since pre-industrial time. It argued that if we do not initiate immediate, rapid, and powerful climate measures, a limitation of global warming to 1.5 or even 2 degrees Celsius will be out of reach (FN-sambandet 2021). This marked the beginning of what was called Norway's "climate election" of 2021. And so, the climate debate begun. MDG wanted to cut emissions by 80 percent the next decade, R and SV proposed a cut of 70 percent, and Ap, V, and KrF a cut of 55 and 50 percent. H said that Norway should be a "low-emission country" within 30 years. Sp referred to the Paris Agreement. FrP claimed that we must view the world's emissions in its entirety and oppose climate taxes that only applies to Norway (NRK 2022a). They also accused MDG and the left-wing parties of using scaring tactics, and for practicing symbolic climate politics that only spends money (Aftenposten 2021). Another central part of the climate problem is Norway's petroleum industry. Debates often revolved around the question of whether the country had to stop searching and producing oil. FrP argued that we must pump more oil than before. H, Sp and AP wanted to reorganize and further develop the oil industry, and not wind it up. MDG and V on the other hand, claimed that Norway had to stop the oil industry, while SV, KrF and R argued that we need to reduce the amount of oil pumping (NRK 2022b). Election researchers believed that the report might give a positive effect on the election campaign for the parties that have the largest focus on climate policies. Norway's green party, Miljøpartiet de Grønne (MDG), gained over 500 new members the day after the report was released (TV2 2021). For weeks prior to the election, it was predicted that this election would be a "climate election". MDG was expected to get over the threshold of 4 percent and create a "political earthquake". Sosialistisk Venstreparti (SV) and Venstre (V) were expected to accomplish great triumphs, as their party program had a strong focus on

environmental topics. However, as the votes were counted on the election night of September 13th, the green sprout began to wither. MDG did not cross the threshold. SV did worse than the recent polls suggested. V came well above the threshold, however 4.6 percent is not an election landslide. Fremskrittspartiet (FrP) received well over twice as many votes, 11.6 percent, on their anti-climate campaign (Dagsavisen 2021). However, the left-wing parties, led by Ap, did receive the majority of the votes, and Ap's Jonas Gahr Støre became prime minister. Ap and Sp joined together in government, while SV decided that they would achieve greater results in opposition rather than if they joined the government (Kinden 2021). Ap did not want to include MDG and R, and so they stayed in opposition as well. None of the environmental focused parties made it into government, thus can one speculate as to whether or not the election actually was a climate election.

1.2 Norway as a “climate nation”

Norway has had an official climate policy for nearly 30 years (Hessen 2020, p. 235). During this period, we have become less of a climate friendly country in nearly every way possible. In 2012, the politicians in Norway, with the exception of FrP, agreed that Norway will be carbon neutral in 2050. By 2020, we should have cut our emissions by 30 percent, with 1990 as a reference point (Hessen 2020, p. 235). Yet, Norwegian climate emissions have increased by approximately 1.1 percent between 1990 and 2018. We have exported billions of tons of CO₂ in oil and gas and increased our material consumption significantly. We eat more meat, and we fly across the world and within our own country whenever it suits us. In the same period, our neighboring countries Sweden and Denmark have reduced their emissions by roughly 26 percent. Between 1990 and 2016, the collective climate emissions within the EU were reduced by 22.6 percent. All European countries except Norway and Bulgaria have reduced their climate emissions severely in the time period 2000-2015 (Trædal 2020, p. 9).

There is still a significant distance between political rhetoric and political actions (Hessen 2020, p. 237). Norway's actions do not correspond with their promises to cut their emissions. Climate activists claim that Norway's climate policy is based on “three lies”; 1) Norwegian oil and gas is good for the climate, and there is no correlation between Norwegian oil and gas extraction and Norwegian or international climate politics, 2) technological development will compensate for the absence of an active climate policy, and 3) it is cheapest and smartest to reduce climate emissions in other places than Norway, and we should “help the climate where it is”. These “life lies” help protect the petroleum industry, which is a very important economic factor for the Norwegian welfare, while also justifying Norwegians' lack of environmentally friendly changes in their lifestyle (Trædal 2020, p. 22).

In order to turn around, substantial measures in politics must be taken. A democracy can be viewed as a tank ship. It is meant for steady course or for only slow course adjustments. It is undoubtedly the best form of governmental reign we have, but the achilles' heel of democracy is that it rewards short-termism and political strategies that aim to secure elections and re-election every four years. Such a political system is not as suitable for really big course changes, since there are so many who want their hand on the wheel, and who at the same time see themselves benefited from continuing to operate their politics as before. Significant course changes, such as a fundamental change of climate policy, therefore become difficult, until we suddenly wake up and find ourselves in an even scarier reality (Hessen 2020, p. 239). It is also important to keep in mind that Norway has a particularly special position in international climate policy, as a producer and exporter of oil. The country's wealth and welfare are built on the industry that is also the country's biggest source of emissions (SSB 2021). To turn the ship around, severe measures must be taken, and several of the political parties do not seem to be ready for such significant events.

1.3 Overarching research questions

As the Norwegian election campaign of 2021 evolved into becoming a "climate election", the parties were expected to express their stance on the relevant issues. All parties were to some degree "forced" to discuss issues regarding environment and energy policy, whether or not this was a political issue they worked towards, and they took that opportunity in various ways. This thesis aims to create a better understanding of how, and how much, the parties and their top candidates communicated about environmental and energy topics. For this, I have formulated two overarching research questions:

RQ1: Which parties engaged how much in environmental and energy as topics on social media during the 2021 Norwegian election campaign?

RQ2: How did the parties and their top candidates discuss environmental issues on social media during the 2021 Norwegian election campaign?

To answer the overarching research questions, I will conduct a quantitative content analysis of the parties' and their top candidates' posts on Facebook and Instagram during the four weeks prior to the election on September 13th, 2021, also known as the official election campaign period. The parties included in the analysis are Arbeiderpartiet (Ap), Fremskrittspartiet (FrP), Høyre (H), Kristelig Folkeparti (KrF), Miljøpartiet de Grønne (MDG), Rødt (R), Senterpartiet (Sp), Sosialistisk Venstreparti (SV), Venstre (V) and Pasientfokus (Pf). This list consists of all parties that have representatives in the national parliament, Stortinget.

1.4 Choice of topic

As climate change has become the largest challenge the world is facing, it is important to look into how the national political parties communicate these challenges to the public. This thesis is therefore a valuable contribution towards understanding the communicative strategies political parties use in this regard.

The climate election of 2021 gives a great opportunity to investigate the strategic political communication the parties use in relation to environmental topics. Research shows that political parties increasingly use social media as a way to strategically communicate their politics to voters (Rogstad 2016). Also, as the younger generations have a special interest in climate related issues (Brobakk 2017), one can believe that the parties particularly use the platforms in which the youth is to be found, to communicate about these topics. An analysis of the parties' and their top candidates' social media posts can therefore give a good insight to how, and how much, the parties discuss and prioritize these topics.

1.5 Structure of the thesis

This thesis is structured as follows: chapter 2 will provide an introduction to the conceptual framework used to analyze these topics and answer my research questions. This chapter will take you through theoretical concepts and former research regarding political communication on social media, and the use of social media during an election campaign. It will present different relevant concepts to explain strategic political campaigning, such as agenda setting and agenda building, issue ownership and issue management, priming, framing, personalization, and visualization. Chapter 3 will explain the methodological choices made in the research. It takes you through the process of data selection and collection, the measuring instrument, and the coding procedure, and discusses the quality of the research. Chapter 4 presents the results of the analysis. Chapter 5 will discuss these results in relation to my derived research questions and hypotheses, as well as the concepts introduced in chapter two. Lastly I will draw conclusions in chapter 6.

2 Conceptual framework

To answer my research question and derive hypotheses, I use several theoretical concepts regarding politics and political communication. In this chapter I will firstly present and discuss different perspectives, theories and previous research related to political communication in election campaigns and the role of social media in this regard. Secondly, I will present concepts that are directly associated with political influence and communication. These concepts are used in my analysis to explain *which* issues the political parties are discussing in their election campaigning, and to explain *how* they are discussing these issues.

2.1 Aims of strategic political communication

Political processes and decisions presuppose political communication. Both attitude, knowledge and behavior are affected by this type of communication by politicians, representatives of organizations or citizens. Political communication an important factor of power in politics, as it promotes certain interests and values above others (Ihlen et al. 2015, p. 11). How is it, for example, that we as a society agree on what is good environmental policy or what is an acceptable level of climate emission? Studies of strategic communication and PR look further into the role that different organizations play in this context.

To give a precise definition of political communication is challenging, as the literature covers a number of different sides and angles of the concept. Brian McNair (2011) defines political communication as “purposeful communication about politics between different actors”, which includes three factors: 1) communication initiated by politicians and other political actors with the intention of achieving political goals; 2) communications directed at these actors by non-politicians, such as voters, political commentators or activists; and 3) communication about these actors in news, commentary, editorials ad other forms of media discourse on politics. His definition is based in strategic communication and includes all forms of political discourse, and thus also visual communication such as logo design, appearance, clothing, and hairstyles (Rogstad 2016, p. 20).

Ihlen et al. (2015) outlines four central aspects of political communication; forms, sharing, actors and intention. The classic *form* of political communication is the political speech, however, in modern times the speeches reach their largest audience through various media. In this way, political communication can largely be described as mediated. *Sharing* is considered an important aspect of political communication. The communication is viewed as a way of sharing messages with others, while it also involves a level of reciprocity. This approach is a contrast to the classical mechanical perspective of communication where

information is considered to be delivered from a sender to a receiver. Traditionally, research on political communication has largely discussed political *actors* like parties and their candidates, with a special focus on the attention they receive during election campaigns. Semetko and Scammell (2012) argue that all actors that attempt to influence political decision making are engaging in political communication. Actors may therefore include parties, media, interest organizations, voters, etc. *Intention* is discussed as an essential part of political communication. Where McNair's definition emphasizes the purposeful goal of political communication, it can be argued that it might be relevant to include how political communication also involves unintended influence on knowledge, attitude and behavior related to political issues. Some argue that strategic activities of political communication should be called political public relations (Ihlen et al. 2015, p. 12-13). These four aspects refer to how all the use of symbols and attempts to influence in connection with political affairs, such as the management of society, cooperation and conflict, values and interests, takes place within political communication.

McNair (2011) also uses the term "public relations", first and foremost regarding efforts of gaining beneficial publicity. Strömback and Kioussis (2011, p. 8) argue that political public relations is an area that gathers inspiration from political communication, political science and political marketing. They define it as follows: "Political public relations is the management process by which an organization or individual actor for political purposes, through purposeful communication and action, seeks to influence and establish, build, and maintain beneficial relationships and reputations with its key publics to help support its mission and achieve its goals". They argue that political communication and PR are concentrated around relations shaped through communication; that both fields are dependent on relations and reputation, and that the media plays a central role in this context. This argument goes beyond election campaigning periods, as it includes all actors that have political goals (Ihlen et al. 2015, p. 69).

Studies of elections are however a central part of both political communication research and research on strategic political communication. In democracies, it is important to discuss election campaigning, as it is the period where parties and their candidates present their political platform to their voters and is being held responsible for the policies they have pursued in the previous election period. It is also the period which decides who is in power over the upcoming years (Ihlen et al. 2015, p. 207). Today, there are many more voters than before who change the party they are voting for from election to election (SSB n.d.). Voter affiliations have with certain parties, become weaker, and then, short-term influences such as topic or the candidates become more important (Ihlen et al. 2015). Social media is the perfect tool for focusing on topics and candidates as short-term influences. Enjolras et al. (2013, p. 158)

revealed in their research that especially young people follow politicians on social media to help them decide if they want to support them. People also often wait until way into the election campaign to decide (Aardal 2011). In Norway, it is common to talk about the election campaign as the last four weeks prior to the election day, which is always on the second Monday in September (Ihlen et. al. 2015, p. 207).

2.2 The role of social media in strategic communication in election campaigns

Social media has in the past decade made a great impact on the public discourse and communication in society, while also changing some of the traditional principles for spreading information. As social media includes a number of publishing platforms, such as discussion forums, web blogs and social networking services, it can in many ways be considered a vague concept. It is therefore relevant to specify how social media is understood in this thesis. This study's application of the term social media mainly refers to social networking services (SNS). boyd and Ellison (2013) describe social networking services as online communication services, which must meet three criterias; 1) each user has his/her own profile, consisting of content created by either the users him/herself, by other users and/or by the system; 2) the user can create a list of relationships on the service, which is also visible to other users of the service; and 3) the user may consume, produce and/or interact with news feeds of user-generated content from their links on the service.

Strategic political communication on social media differs from political communication on other media platforms in several central areas. The communication is often informal, ad hoc and happens quickly. This creates blurred lines between public and private communication, as well as an area for entertainment and pastime (Rogstad 2016). Therefore, political communication on social media might not be as thought through as the literature defines strategic political communication in a general sense. However, in the case of strategic actors such as political parties, the communication is often carefully thought through even when it appears as if it was not.

Social media allows politicians to communicate directly with voters without having the mass media interfering as gatekeepers. This gives them more freedom to shape their political messages and their own image (Rogstad 2016), and to communicate to users selected issues that parties consider advantageous for themselves (Haßler et al. 2021). Social media platforms like Facebook and Instagram create opportunities to establish direct personal connections to non-institutionalized mass audiences and raise attention for unfiltered campaign messages (Engesser et al. 2017).

2.2.1 Functions of social media in political communication

Research has identified five typical functions for social media in political communication (Lilleker et al. 2011): informing, communicating, marketing, mobilizing, and setting the agenda. Concerning the *information function*, a common finding is that political actors use social media to inform and broadcast their own message rather than to engage in dialogue with voters. Enjolras et al. (2013, p. 158) have done research on political communication on Facebook between Norwegian political actors and their voters, where its results showed that most of the communication goes from the party/politicians to the voters. Social media also functions as an area to *communicate* and create engagement around politics. However, the communication becomes asymmetric whenever the politicians create engagement but fail to respond and interact when voters address them (Ihlen et al. 2015). From a *marketing* perspective, politicians consider social media to be a useful tool as they can choose for themselves what material to post. Platforms like Facebook give opportunities to use tools like algorithms to target the right audience (Ihlen et al. 2015). Social media has a *mobilizing function* whereas individual actions can create and influence collective actions, such as mobilization for a street demonstration or for voting in an election (Ihlen et al. 2015). Lastly, political actors attempt through social media to influence the media's *agenda*. Studies have shown that there is a close connection between political actors and media actors on social media in Norway, Denmark and Sweden (Moe & Larsson 2013). Politicians use social media as a way of getting media attention, and both Norwegian and international studies have shown that media actors primarily use social media to keep up with news and to promote their own journalistic work (Rogstad 2013).

2.2.2 Election campaigning on social media

How the election campaigns have been fought, has always been closely linked with what communication channels the parties and their candidates have had to spread their message. To answer my overarching research questions, it is important to investigate how social media platforms can be useful and amplify the effects of an election campaign. The functions of social media that I previously discussed are just as relevant in election campaigns. In addition, social media also have other valuable campaigning functions.

As previously mentioned, *informing* is a central function of political communication on social media. This also applies for election campaigns. Enjolras et al. (2013, p. 158) revealed in their research that 63 percent of their respondents agreed that access to information was an important reason for them to follow politicians on Facebook. During an election campaign, political actors also use social media to *communicate* with their audience. The communication is then often oriented around creating exposure around own issues and informing about them. The political messages that have always been put on flyers and buttons are now also posted

on social media (Aalen 2016, p. 203). Using social media as a *marketing* opportunity is often used by politicians. Some argue that social media has made it easier to analyze public opinion (Aalen 2016, p. 200). However, it is important to mention that opinions raised on social media are not representative for the population in its entirety. Research from the Norwegian election campaign of 2009 revealed that only 7 percent of voters followed a politician or a party on social media (Karlsen 2011). Election campaigns have also become more consumer oriented. Ihlen et al. (2015) claim that parties now seem to focus more on offering voters “political products” that are somewhat adapted to their needs and wishes, rather than sticking to the party’s holistic ideology. The *mobilizing* function of social media is very useful in an election campaign. Social media provide several tools that make it easier mobilize by engaging the grassroots movement, for example through local events or collecting donations. Political actors ask voters to do certain actions, like to share the post, to participate in volunteer campaigning or to go vote for the party (Aalen 2016, p. 207). Previous research shows that especially on Facebook, the smaller parties like Rødt and Miljøpartiet de Grønne use direct mobilization (Larsson 2014a).

In addition to using social media for informing, communicating, marketing, mobilizing, and setting the agenda, Aalen (2016, p. 203) claims that during an election campaign, political parties also use it for personalization of their candidates, criticism of other actors and discussion of the election in general. Parties also spend money on social media advertisements.

Social media contributes to further focus on the politician as an ordinary person. Maybe a wish for more response is a reason for the increasing *personalization* of the election. Politicians get far more response on personal updates and the increasing amount of that type of content is a natural outcome (Aalen 2016, p. 203). I discuss the concept of personalization further in the thesis. A way to get attention is to use social media to *criticize* the press or the political opponents. This is a form of negative campaigning. In Norway, it rarely happens that politicians make direct attacks, however, when they do, it often gets large amounts of attention (Aalen 2016, p. 207; Larsson 2014b). With climate politics as an example, it is not unusual that the politicians criticize each other’s handling of such an urgent crisis. While MDG criticizes FrP for wanting to continue Norway’s petroleum production, FrP criticizes MDG for pursuing symbolic climate policy. This will be further investigated in my analysis. Many posts often *discuss the election campaign* in general rather than political issues. These updates focus on events like public opinion polls, meeting voters and handing out flyers, or visiting places like eldercare centers or schools (Aalen 2016, p. 207; Larsson 2014b).

To understand the parties' election campaigning on social media, it is important to be aware of the differences between them. There are differences in size and popularity, as well as their time of establishment. These are factors that play a part when investigating the parties' strategies and the outcomes of them. Previous studies have shown that smaller parties, such as Miljøpartiet de Grønne and Rødt, have been particularly active on Twitter and Facebook. They also get more response on social media than the election polls would indicate (Larsson & Moe 2014; Larsson 2014a). Aalen (2016) links this finding with the fact that most of the smaller parties have been formed in recent decades and have less established election campaign traditions, which make it easier to innovate the election campaign. Also, they often have younger voters whom they can better reach on social media than via traditional news media. Enjolras et al. (2013) find in their study that younger generations participate in political communication on social media more than older generations. Previous research also argues that parties that are far to the left, or far to the right, would like to think they are marginalized or misrepresented in the editorial media, and their voters may share that opinion (Larsson & Moe 2014; Larsson 2014a). Small and marginalized parties seem to have greater motivation to use social media than the large parties have. The large parties have greater resources and can therefore use both editorial and social media. This is proven, as the large parties still get the most attention on social media if pure numbers are measured (Larsson & Moe 2014). Managing social media requires time and expertise to formulate messages and answer questions from the voters. There seems to be no clear connection between how many followers the parties and politicians have, and how much response and spread they get on their content. The largest parties get the most visibility, but the marginalized and smaller parties seem to have better conditions for reaching out on social media than in editorial media (Aalen 2016).

It can be assumed that political actors communicate consciously and strategically about certain issues on social media in election campaigns. This concerns both which topics they address and how they communicate about these topics, as addressed in my research questions. Theoretical concepts which help to explain and understand the choice of topics are agenda building, issue ownership and issue management, and priming. Well-suited theoretical concepts in the context of how they communicate about environment and energy are framing, personalization and visualization. I will discuss these theoretical concepts below and make clear how they relate to my study.

2.3 Climate and environmental communication

In order to investigate the Norwegian parties use of climate communication, it is relevant to dive into previous research on the topic. This subchapter discusses the forces that has influenced climate communication in the past decade, the key elements in the communication process, the channels that climate communication often occurs, and how climate communication has adapted to the society's engagement.

2.3.1 The landscape of climate and environmental communication

The landscape of climate and environmental communication is shaped by influential forces, which can be grouped into six categories (Moser 2016, p. 346-347). First, the climate itself gives regular opportunities to talk about climate disruption and climate change. Closely related is the second category, made up of regular incremental scientific advances, notable discoveries, as well as landmark climate change assessments. In example, IPCC have now released their working group 3 contribution of their sixth Assessment Report (IPCC, 2022). Thirdly, climate actions and policies have exerted and demanded their own influence on climate communications. This is visible in the increasing amount of coordinated events created as a call for change. These events gave occasions to practice the fourth category of influences: using different frames, venues and tools, the increasing use of social media rather than traditional media, as well as directing the attention towards different audiences in order to influence public opinion. The fifth defining force in the landscape is climate communication as a multidisciplinary branch of academic research in its own right. The sixth and final category of influential factors on climate and environmental communication comprises the things often considered as contextual, foundational, often unrelated or distracting. Some are uniquely related to the past few years while others are enduring. These factors can include a nations political culture, electoral turnover, and political destabilizations such as terrorism fears, pandemics, or a refugee crisis (Moser 2016, p. 346-347).

2.3.2 Key elements in climate communication processes

One of the most prominent occupations of climate communication research is the role of values, beliefs, worldviews, identity and making of meaning has had in communicating environmental issues. Some takeaways from this body of research are that we all hear, perceive, make sense of, and judge incoming information through filters of culturally transmitted values. Also, our values affect not only our perceptions and interpretations of the environment and climate, as well as our acceptability of climate science, but also our acceptability of proposed behavioral changes, technological solutions, or climate policies. Communication of climate issues meets both acceptance and resistance, and by approaching the different audiences though value frames, the messages can be made more resonant

(Moser 2016, p. 350). Visualizations and the use of imagery also plays an important part as a key element of the communication process of climate. I will discuss the concept of visualization further in chapter 2.5.3.

2.3.3 Communication channels

Research on climate communication also shows that the traditional media is losing their dependable impact on public audiences, because of the more fragmented and diverse set of communication channels available. Climate change as a scientifically, politically, socioeconomically, and culturally complex phenomenon often requires expert communication and interpretation, as well as a media landscape that is made up of variably educated, motivated and ideologically leaning people (Moser 2016, p. 351). New media allows climate stakeholders to challenge dominant narratives of mainstream media. Both media attention and mobilization around climate change are now often manifested via social media (Hopke and Hestres 2018, p. 3).

2.3.4 Mitigation and adaptation

There exists a significant need for explaining and educating, however, research has shown that knowledge itself is insufficiently motivating to take action, and that it is unclear even to the most motivated people what actions actually need to be taken (Gifford et al. 2011). Therefore, there is now a shift toward enabling and empowering action, as it is now recognized that actions and practical support must be a central part of all climate communication. Options must be discussed, and the audiences must feel empowered to choose viable options (Moser 2016, p. 351). These recognitions have resulted in an increased focus on how to best communicate mitigation and adaptation of climate solutions.

2.4 Influencing what issues citizens consider important

My first research question seeks to investigate *which parties engaged how much in environmental and energy as topics on social media during the Norwegian election campaign of 2021?* A handful of concepts related to political communication, such as agenda setting and building, issue ownership and management as well as priming, can be used to investigate the parties' climate communication and answer the research question.

2.4.1 Agenda setting and agenda building

As mentioned, agenda setting is one of five typical functions of social media. Both agenda setting and agenda building are goals of political actors when using social media. Their agenda strategy can include both addressing and not addressing environmental issues.

The agenda setting hypothesis says that media influence or shape the public agenda. Most people are more concerned with issues that have a prominent place on the public and media agenda than the issues that are neglected. Supporters of specific issues get an advantage when these issues are salient in the media, preferably in media with great reach and credibility. The prioritization of specific issues can affect public opinion in two ways. First, it can have an impact on people's intrapersonal agenda, the issues one knows about, perceives as important and that shapes their view of society. For example, people who are concerned about environmental issues have a different view of society than people who emphasize industrial development. Second, people's interpersonal agenda is also impacted, that is the issues they discuss with family, friends, and colleagues (Ihlen et al. 2015, p. 42)

Agenda building looks at questions related to external sources influencing the media agenda (Strömback & Kioussis 2011, p. 79), which is a main goal of strategic political communication. Scholars define agenda building as the process of influence sources have over the media agenda or the "overall process of creating mass media agendas" (Berkowits & Adams 1990, p. 723). Agenda building has also been described in relation to PR as a process of "sources'" interactions with gatekeepers, and give-and-take process in which sources seek to get their information published and the press seeks to get that information from independent sources" (Strömback & Kioussis 2011, p. 79).

The concept of agenda building looks at how coverage is influenced with regard to objects like issues and political candidates, foreign countries and corporate reputations. Agenda building occurs on two levels. First-level agenda building happens when one persuades journalists to cover issues and other objects that otherwise might have been ignored. At this level, researchers examine linkages between salience of objects on the part of media coverage and those attempting to influence journalists. At the second level, agenda building refers to journalists being influenced to use certain attributes to portray objects. Second-level agenda building focuses on attribute salience links between coverage and influencers, with the salience often being examined in terms of substantive and affective dimensions. Substantive attributes, such as conflict and human interest, provide structure to topics, while affective attributes include the positive, negative, or neutral tone being used (Parmelee 2013, p. 435-436).

While the majority of the research on agenda building explores the sources of the media agenda, Strömback and Kioussis (2011) also argue that the Internet has enabled organizations to bypass the media and directly communicate with the public. Previous research on agenda building in political tweets have shown that “the tweets that act as a tip sheet to spark a story idea are influencing object salience in coverage regarding issues and candidates, which is the basis of first-level agenda building” (Parmelee 2013, p. 446). Parmelee (2013) also reports occurrences of second-level agenda building as results of political leaders’ tweets. Quotes and poll data from political leaders’ tweets that are used by journalists can potentially influence the attributes in media stories that portray issues, candidates, or other objects. To use information subsidies to shape the affective tone or substantive dimension of attributes in stories is central in second-level agenda building (Parmelee 2013, p. 446).

2.4.2 Issue ownership, issue management, and priming

The parties issue ownership, issue management, and the way they use priming to focus their election campaigning efforts on certain issues, are relevant factors that can help determine their strategic communication about environment and energy.

The theory of issue ownership describes a campaign effect in which a candidate or political party successfully frames the vote choice as a decision to be made in terms of problems facing the country that the party or candidate is better able to handle than their opponents. Issue ownership is “produced by a [party’s] history of attention, initiative, and innovation towards these problems” (Petrocik 1996, p. 826). This leads voters to believe that one party is more sincere and committed to do something about problems that they find concerning, than the competitors. It gives a sense that the parties “own” certain issues (Ihlen et al. 2015, p. 216). Parties use their campaigns to increase the visibility of certain issues, and thus cause voters to use their perception of the parties’ ability to handle issues to choose between them in an election (Petrocik 1996). In research literature, it is often claimed that political parties’ focus on disseminating issues has become more important at the expense of the focus of the parties’ holistic politics. In a pure marketing perspective, it is almost a coincidence which issues the parties are prioritizing. The most important thing seems to be adjusting their politics to the voter groups they wish to convince. Still, research shows that parties wish to receive attention on issues that benefit themselves, and these issues are not disseminated coincidentally (Ihlen et al. 2015, p. 102).

Political parties use their social media platforms for issue management. This concept is described as “the process of strategically planned observations and analysis, selection, coordination and alignment as well as control of communication to assert their issues in the

public debate” (Haßler et al. 2021). Issue management is used to strategically emphasize issues, rather than just reactively address the issues of other parties or the media (Stokes 2008, p. 383), with the goal of influencing voter preferences, a process called priming (Ansolabehere and Iyengar 1994, p. 335).

Priming is discussed in relation to the hypothesis of issue ownership, where it is expected that the parties focus their campaign efforts on issues that they are identified with and that the voters consider them as competent on (Haßler et al. 2021; Petrocik 1996). It is about strategically creating attention around the topics that they themselves are identified with, rather than discussing issues brought up by other parties or the media (Stokes 2008). With priming, one can activate certain thought processes in the audience, making some mental patterns in their consciousness become more accessible than others. This establishes standards for the public’s assessments of issues and persons. Priming is done to influence what issues the citizens base their opinions on when dealing with central questions. It is also used to influence what criterias the citizens consider when they are evaluating key actors’, like political candidates, efforts in society (Ihlen et al. 2015, p. 43).

One can understand an election campaign as a competition to influence what issues a voter considers when they vote. Parties and candidates can (try to) achieve this by influencing which issues are discussed publicly during the campaigning and how the issues are discussed. By raising attention towards issues the parties themselves are trusted on and making sure these issues are part of the media’s agenda, they can collect votes (Haßler et al. 2021).

2.4.3 Political ideology and issue ownership in Norway

The Norwegian party system is often discussed in relation to a left-to-right axis. Here, we find three parties dominating the left: R, SV and Ap, five center parties: MDG, V, KrF, Pf and Sp, and two parties dominating the right: H and FrP. MDG marks themselves as independent, while Pf only ran for election in Finnmark in Northern Norway. The parties in the center can cooperate with parties on both the left and right wing, dependent on who they agree the most with on certain issues (Stortinget 2022).

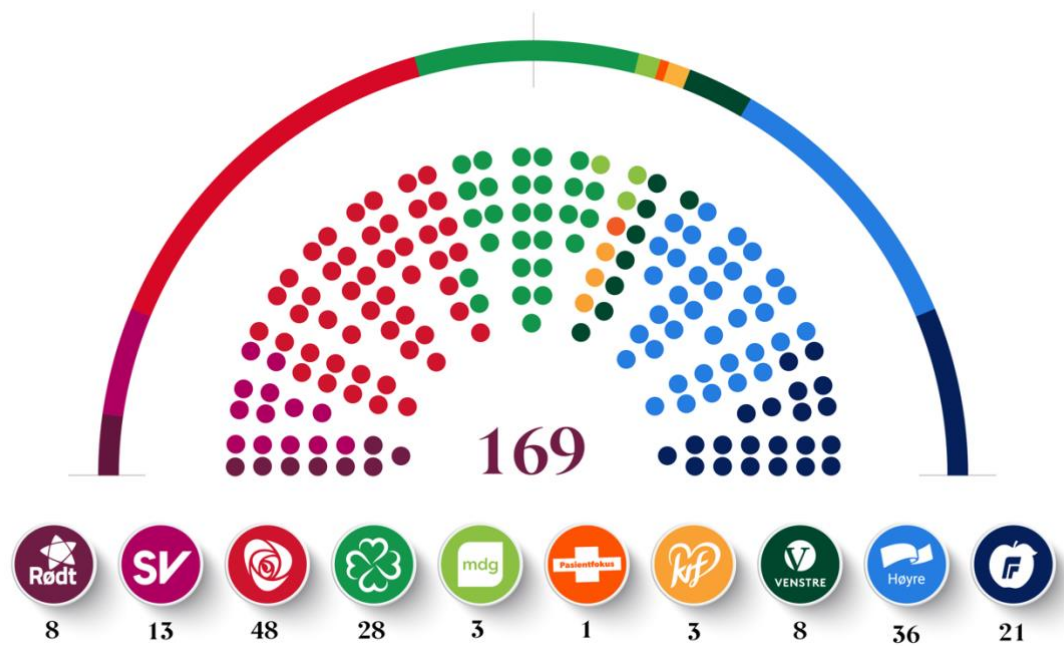


Figure 1 Party size and left-right axis in the 2021-25 Norwegian parliament (Stortinget)

V and H were the two first formed parties in Norway and breached out from the territorial and cultural contradictions between the center and the periphery. V defines themselves as a social liberal party, while H has always balanced between being value conservative and the business liberal. Ap is based on the labor movement and has been central to the development of the welfare state. They are particularly associated with the defense of welfare schemes and social equalization. KrF marks themselves as a Christian-democratic party. Sp was formed under the name Bondepartiet and has especially defended business and district interests in Norwegian politics. SV was formed as a result of a disagreement in Ap concerning a NATO membership and has since focused on marking themselves as Norway's environmental party. They also strongly focus on social equalization. FrP was formed based on a protest movement against high taxes and fees and is now also profiled as a party against immigration (Ihlen 2015, p. 93-94). MDG is affiliated with a larger European party family consisting of green parties (The European Greens, Global Greens). This party family is characterized by ecological thinking, feminism, hum, grassroots democracy and cultural diversity. As a green party, MDG prioritize protecting nature over further economic growth (SNL 2022). Pasientfokus is not registered as a party, but as an organization who ran for election in Finnmark to fight against centralization of hospitals in the northern parts of Norway (Stortinget 2022).

Although we often say that parties belong to the left, the center, or the right, we face challenges when discussing certain topics, such as environmental policy. There are parties both on the left and right side that highly prioritizes environmental and energy topics (Stortinget 2022).

In a Norwegian context, the hypothesis of issue ownership is strong. Statistisk Sentralbyrå (SSB) ran an election survey during the 2021 election asking voters which parties they think have the best policy on different issues. The results can be used to investigate what issues the different parties are trusted with and have “ownership” of. They are as following: R is primarily associated with tax policy and health policy. SV is trusted in environmental policy, as well as educational policy. Ap is trusted in labor policy, policy for elder citizens, and taxes. MDG is trusted with environmental policy. V is mainly associated with environmental policy and educational policy. KrF is associated with policies for family and children. Sp is trusted with district policy. H is most trusted in school and educational policy, and taxes. FrP is associated with immigration policy and transport policy (Aardal, n.d.). Pasientfokus as an organization focus on rural policy and health policy (Stortinget 2022).

Based on the fact that MDG is mainly associated with climate and environmental policy, I derive following hypotheses:

H1.1: MDG has the highest number of environmental posts

H1.2: MDG addresses environment and energy more often in their own posts than the other parties do in their posts.

The hypothesis of issue ownership is strong in Norway, and there is good reason to believe that the parties’ ideology and the issues they claim influences which topics they communicate about on social media. I further hypothesize:

H1.3: A party’s ideology influences which topics they address the most often.

Right-wing parties are in Norway often more supportive of keeping the oil industry going, as it benefits the economy. Therefore, I further hypothesize:

H1.4: Right-wing parties focus more strongly on energy policy than environmental policy.

2.5 Influencing the perspectives citizens take on the issue

Important in election campaigns is, however, not only what issues are emphasized, but also how these issues are presented. All issues can be presented in several ways, and framing, personalization and visualization are three of them. In relation to my second overarching research question, I discuss how these concepts can be used for issue presentation and derive underlying research questions.

2.5.1 Framing

Different approaches on how to communicate issues are gathered under the umbrella term “frames” (Ihlen et al. 2015, p. 43). In the literature, framing is defined in various ways by a number of theorists and researchers, and it is therefore challenging to conclude with one definition. Stephen Reese (2001, p. 11) has defined frames as follows: “Frames are *organizing principles* that are socially *shared* and *persistent* over time, that work *symbolically* to meaningfully structure the social world.” In order to be meaningful, frames need to represent a context that we can perceive and share with others (Allern 2018, p. 220). Entman’s (1993, p. 52) definition of framing, consisting of four elements, is widely accepted in the literature: “To frame is to select some aspects of a perceived reality and make them more salient in a communicating context, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described”. Framing is used to shape and alter audience members’ interpretations and preferences through priming. That is, frames introduce or raise the salience or apparent importance of certain ideas, activating schemas that encourage target audiences to think, feel, and decide in a particular way (Entman 2007). Increased salience makes pieces of information more noticeable, meaningful, or memorable to the audience. This enhances the probability that the receivers will perceive the information, discern meaning and process it, and store it in their memory (Entman 1993, p. 53).

Entman’s (1993, p. 52) definition is based on four frame elements that together constitute a frame: 1) a *problem definition* that determines what a causal agent is doing with what costs and benefits, usually measured in terms of common cultural values; 2) a *causal interpretation*, that identifies the forces creating the problem; 3) a *moral evaluation* of causal agents and their effects; and 4) a *treatment recommendation* that offers and justifies treatments or the problems and predict their likely effects. One strand of framing research using content analysis understands these elements as variables, arguing that a single sentence may include more than one of these four framing functions, while many other sentences might not include any of them. Matthes & Kohring (2008, p. 264) suggests that a problem definition can consist of an issue and relevant actors that discuss the problem. A causal interpretation is an attribution of failure or success regarding a specific outcome. An evaluation can be positive, negative, or neutral and can refer to different objects. A treatment recommendation can include a call for or against a certain action.

A frame can determine whether most people notice a problem and how they understand and remember it, as well as how they evaluate the problem and choose to act in its regard. It

creates attention to particular aspects of the reality that is described, while simultaneously direct attention away from other aspects: “Most frames are defined by what they omit as well as include, and the omissions of potential problem definitions, explanations, evaluations, and recommendations may be as critical as the inclusions in guiding the audience” (Entman 1993, p. 54).

Framing also has important implications for political communication. While frames call for attention to certain versions of reality while also obscuring other versions, it might result in different reactions from the audience. Politicians seeking support are therefore compelled to compete with each other over news frames. In this way, framing is a central part of the exertion of political power, where the frame acts like an imprint of power (Entman 1999, p. 55). During an election campaign, political actors frame their messages in ways that they align with their communication strategies. While they choose to communicate about some topics, they might choose not to communicate about others. In order to investigate how they frame the issue of environmental and energy policy, I derive the following under arching research question:

RQ 2.1: Which parties highlight which problem definitions, causal interpretations, moral evaluations, and treatment recommendations in their environmental posts?

2.5.2 Personalization

Personalization in political communication is described in the literature as comprising two dimensions: First there is a stronger focus on politicians rather than parties. Second, there is change in the criteria of how politicians are evaluated, from a focus on political competence to a focus on non-political personality traits (Kriesi 2012). Personalization as a phenomenon has received particular attention in studies of national election campaigns, which often emphasizes the central position of the party leader in the coverage of politics and election campaigns (Ihlen et al. 2015; Kriesi 2012).

In the literature, there are ongoing controversies whether political communication is becoming increasingly personalized or not (Rogstad 2016, p. 58). In social media, the distinction between the personal and the private sphere is becoming less and less clear, and a significant question is therefore whether these new media platforms contribute to further personalized politics. However, social media strongly focuses on individuals, as they are built around persons as users, and it is therefore fair to consider that as a contributing factor of personalization of digital political communication (Rogstad 2016, p. 58). As mentioned previously, the posts containing personal updates seem to get more response on social media than the ones discussing political topics (Aalen 2016, p. 203). This might create an incentive to keep posting personal updates to gain attention, and therefore increase the level of personalization in politics on

social media. The thought behind personalization is that the voters get to know the politicians on a personal level and then starts to feel like they are ordinary people similar to themselves. This gains the voters' trust and could result in them voting for the politician's party (Aalen 2016, p. 205). Increased personalization makes the image of politicians more important. To build impressions that show, for example, how politicians are ordinary people who the voters can identify with, helps create a personal image. A well-known personality can be very effective when marketing political alternatives. Party leaders are often portrayed as the very personification of the parties (Rogstad 2016). The increased attention around politicians has been explained for various reasons. First, voters have less trust in parties, which has made political parties weaker and individual politicians more important. Secondly, the increased personal focus has been explained by the emergence of new media. Modern journalism favors individuals over abstract issues and interests, and television in particular has helped to break down the distinction between news and entertainment (Rogstad 2016).

Personalization research focus on political communication, particularly campaign communication. The research is often conducted on general political communication, without differentiating between different topics. However, it is possible that there are differences in the use of persons in the context of different issues. I find it interesting to examine how much the parties use the strategy of personalization in their environmental posts and compare the findings to use of personalization in the non-environmental posts. I derive the following research question:

RQ2.2: How far does the parties differ in the use of personalization in their environmental posts and their non-environmental posts?

2.5.3 Visualization

When analyzing content on Facebook and Instagram, it is important to also pay attention to the visual elements of the posts. Especially since Instagram in particular is an image-based platform where users post images as the primarily focus, and adding a text is optional. Hopke and Hestres (2018) refers to Rose (2012, p. 2) when explaining the functions of visual content in social media: "Visuals found in social media do not function independently of the textual material they often accompany, nor of the technological suggestions of the applications through which the visual content are distributed and consumed. Together, in this way, visuals *interpret the world.*"

Li and Xie (2020) have done research on image content and social media engagement. Here, they propose three effects of image content: "mere presence effect", "image characteristics effect" and "image-text fit effect". Using image content for mere presence effects in social

media posts helps the post stand out from the media clutter when most online content is textual. For an image characteristics effect, the image content in a post may provide, informational, aesthetic, or self-enhancement value that is independent of the textual content. This may increase the total appeal of the posts, however, an image with uninteresting content or low quality may lead to lower engagement. An image-text fit effect occurs when both imagery and text content in a social media post is created by the author to express a particular viewpoint. Irrelevant pictures might create extra difficulty for readers to comprehend the main message (Li and Xie 2020, p. 2). Their findings confirm that the presence of an image helps a post to receive more attention. Also, the characteristics of the image affects user engagement – their analysis show that image sources and the quality of the image give consistent effects on the posts. High-quality pictures lead to more engagement (Li and Xie 2020, p. 17).

In political communication, visuals have always played an important role. However, they have become more important with technological advances, from printed press and TV to the Internet. Politicians are now more visible than ever because of the proliferation of mobile cameras. Also, visuals on social media have become part of political actors' strategic tools that are used to influence voters (Farkas and Bene 2021, p. 21).

Visualization in climate communication

Research on how imagery is used in climate communication is important because visuals hold great communicative power. Images engage audiences by evoking emotions, facilitating memory, and transmitting cultural meaning. Research on visual climate communication is minimal compared to research on verbal and written climate communication (Hopke and Hestres 2018, p. 3). Mediators of climate change have examined how feelings of fear, guilt, helplessness, and vulnerability are evoked in verbal communication and how it can lead to engagement, but also steer people away. Researchers have then become more interested in images of climate change, however, it has been studied to a lesser extent in relation to certain emotion (Nerlich and Jaspal 2014, p. 253).

There exists some research on visualizations of climate change that are relevant for my analysis. Research shows that the typical iconography of climate change includes polar bears and other animals, melting ice and glaciers, extreme weather, globes and politicians (Wang et al. 2018, p. 1). Impacts of climate change are visually prominent compared to the causes or solutions (Wang et al. 2018; Grittmann 2014; Metag et al. 2016). Consequences of climate change on physical environments are often depicted, and often also figuratively in graphs rather than photographs (Grittmann 2014). In contrast, climate change causes tend to be depicted using photographs, usually of fossil fuels industry, such as smokestacks, as well as

mass transport and deforestation (Leon & Erviti 2013). Images of climate solutions include adaptive technologies such as electric cars and renewable energy (Metag et al. 2016). Also, visuals tend not to show the impact of climate change on humans, and when humans are pictured, politicians are the dominant image, followed by public figures, protesters, and scientists. Then ordinary people are pictured, they are often visible in the background, or as victims of climate change in distant geographic regions (Wang et al. 2018, p. 2). This absence of human stories can create a potentially problematic feature of climate imagery (Corner et al. 2015).

Nerlich and Jaspal (2014) have examined visual representations of extreme weather and the emotionally charged messages that can be associated with them. In the past, images of extreme weather have been used to convince people of the reality and threat of climate change. These images were, to some extent, more symbolic than real. Now we see pictures of extreme weather far more often in the media around the world. They are no longer only symbols of the possible dangers of climate change, but rather used as evidence of the reality of the dangers. The images provide concrete evidence that strengthens the argument that climate change is a result of human actions. However, they are still used as symbolism in that they create emotions that extend beyond just the content of the image and can affect how people think and talk about climate change (Nerlich and Jaspal 2014, p. 254).

It is also relevant to discuss the possibility that the politicians use specific visualizations to attract, or avoid, certain engagement and reactions. Chapman et al. (2016) found in their research on public perceptions of climate images that most respondents reacted positively to authentic-seeming images, while reacting negatively to images of protest and demonstrations. Respondents had positive views on images that depicted climate solutions, such as electric cars and renewable energy (Metag et al. 2016), however they were not motivated by the images to take action regarding climate change (Chapman et al. 2016).

There are different ways of visualizing environmental content. The different types of visuals that are used also tells us something about the perspectives that parties take on issues, and what elements they find important. It is therefore relevant for my thesis to investigate which visualizations are used by the political parties and their candidates in their environmental communication on social media. I derive the following research question:

RQ:2.3 Which visualizations does the different parties use in their environmental posts?

2.6 Research questions and hypotheses

This subchapter aims to create a better overview as to how the research is structured by its overarching research questions, and its hypotheses and more specific research questions. My research consists of two overarching research questions. Within the first overarching research question, I have through the conceptual framework derived three hypotheses to give further answers. Within my second overarching research question, I have derived three underlying research questions that can give more detail.

RQ1: Which parties engaged how much in environmental and energy as topics on social media during the 2021 Norwegian election campaign?

H1.1: MDG has the highest number of environmental posts

H1.2: MDG addresses environment and energy more often in their own posts than the other parties do in their posts.

H1.3: A party's ideology influences which topics they address the most often.

H1.4: Right-wing parties focus more strongly on energy policy than environmental policy.

RQ2: How did the parties and their top candidates discuss environmental issues on social media during the 2021 Norwegian election campaign?

RQ2.1: Which parties highlight which problem definitions, causal interpretations, moral evaluations, and treatment recommendations in their environmental posts?

RQ2.2: How far does the parties differ in the use of personalization in their environmental posts and their non-environmental posts?

RQ2.3 Which visualizations do the different parties use in their environmental posts?

3 Method

This chapter describes the methodological choices and procedures of the research project. It explains the choice of method, the selection, and the data collection, and gives insight into the measure instruments and procedures of the analytical work. It also discusses the quality and ethical aspects of the research.

3.1 Choice of method

The research question is answered by means of a quantitative content analysis of Norwegian parties' and their top politicians' posts on Facebook and Instagram during the election campaign, a four-week period prior to the Norwegian election of 2021, on September 13th. The country's ten largest parties are chosen for this analysis: Arbeiderpartiet, Fremskrittspartiet, Høyre, Miljøpartiet De Grønne, Senterpartiet, Sosialistisk Venstreparti, Rødt, Venstre and Pasientfokus (although Pasientfokus is not registered as a political party, I will in this thesis refer to them as one of ten parties). These are all parties that made it into the Norwegian parliament, Stortinget. To include these parties and their respective leaders ensures a good overall picture of their election campaigning on social media.

The data material is provided through DigiWorld, an international project with researchers from 17 countries that aims at international comparisons of election campaign strategies in digital communication channels. The data collection takes place in the individual countries, based on a common coding scheme. I was one of three student coders collecting the data in Norway. My thesis therefore bases on the data collected from the Norwegian project.

This material consists of 1682 Facebook and Instagram posts and gives an opportunity to further analyze the posts that in the DigiWorld research project were coded with the topics I am interested in: environmental policy and energy policy. The total number of environmental and energy related posts were 526. I have developed and coded some extra categories in addition to the ones used in the international project, for which I developed a separate codebook.

By conducting a quantitative content analysis, I am able to study factors that may have influenced the content of the posts (Ringdal 2020, p. 261). It also gives the opportunity to better understand and describe the political campaigning communication in terms of patterns and positions, by looking at the occurrence of certain keywords, key phrases, the political actors etc.

3.2 Selection and data collection

The selected research material consists of all posts on Facebook and Instagram posted by the largest Norwegian parties' and their top candidates' accounts during the election campaign of 2021, specifically the last four weeks prior to the election. Political communication intensifies during an election (Rogstad 2016, p. 59), which makes analyzing this time period well suited for my study. I analyzed the data material in a time period between March and April 2022.

My main focus for this research were the posts for which it was coded in the larger project that they addressed environmental policy and energy policy as a topic, although I have also looked at how the parties have communicated about those topics compared to other political topics. By selecting the material addressing mentions of environmental and energy policies, it allowed me to conduct a content analysis that further researched the parties' and the top candidates' communication concerning these topics. The variable overview on the next page provides an overview of which variables I have used from the larger data set and which variables are used in my external coding. This to better visualize how the variables from the main coding and my specific coding is related. In parts of my analysis, the topics from the DigiWorld coding is recoded into more general categories of different topics. The variables included in these categories are presented under the category names.

External codebook		bp. kappa	DigiWorld codebook	bp. kappa	
Visualization			Top candidates		
visual_nature	Green nature	.82	actor01	Jonas Gahr Støre (Ap)	.962
visual_pollution	Polluted nature	1	actor02	Sylvi Listhaug (FrP)	.981
visual_weather	Extreme weather	1	actor03	Erna Solberg (H)	.924
visual_animal	Animals	1	actor04	Kjell Ingolf Ropstad (KrF)	1
visual_industry	Industry and emission	.98	actor05	Une Bastholm (MDG)	.971
visual_activism	Climate activism	1	actor06	Bjørnar Moxnes (R)	.886
visual_other	Other	.88	actor07	Trygve Slagsvold Vedum (Sp)	.981
Subtopics			actor08	Audun Lysbakken (SV)	.981
subtopic_climate	Climate and climate change	.94	actor09	Guri Melby (V)	.971
subtopic_research	Climate research	1	actor10	Irene Ojala (Pf)	.981
subtopic_green	Green politics	.96	Topics		
subtopic_nature	Preserving nature	.98	topic100	Polity: Institutional and normative aspects of politics	.743
subtopic_animal	Animal rights	1	topic300	Other topical aspects of politics	.99
subtopic_sustainability	Sustainability	.92	topic998	Other political topic	.943
subtopic_oil_gas	Stopping oil and gas	.96	topic999	Non-political topic	.848
Assigning responsibility			topic350	Transport and infrastructure	.886
responsibility_people	The responsibility lies with the people	.96	topic380	Defense policy	.99
responsibility_gov	The responsibility lies with the national government and the politicians	.92	topic440	Media policy and digitalization	.943
responsibility_other_pol	The responsibility lies with other political parties/party representatives	.96	topic450	Agricultural policy	.971
responsibility_party	Responsibility: Party name	NA	Labor and social issues		
responsibility_other_country	The responsibility lies with other countries	1	topic320	Labor and social issues	.867
responsibility_international	The responsibility lies with international actors/institutions	1	topic321	Health	.829
responsibility_industry	The responsibility lies with industries/companies	1	topic322	COVID-19 related issues	.952
responsibility_everyone	The responsibility lies with «everyone»	1	topic323	Economic inequality	.743
Assigning blame			topic324	Employment	.8
blame_people	The people are to blame	1	topic325	Policy for families and children	.943
blame_gov	The government and the politicians is to blame	.92	topic326	Eldercare	.952
blame_other_polparty	Other political parties/party representatives are to blame	.94	topic327	Housing policy	.981
blame_party	Blame: Party name	NA	Environment and energy		
blame_other_country	Other countries are to blame	1	topic361	Environmental policy	.8
blame_international	International institutions/actors are to blame	1	topic362	Energy policy	.962
blame_industry	Industries/companies are to blame	1	Economy and finance		
blame_everyone	«Everyone» is to blame	1	topic310	Economy and finance	.81
Consequence and urgency			topic311	Taxes	.886
consequence	Mentions of consequence	.98	topic313	Left-right economic issues	.838
urgency	Mentions of urgency	.96	topic315	Rural policy	.876
Actions and/or plans			Domestic policy		
actions_plans	Mentions of actions and/or plans	.8	topic330	Domestic policy in general	.981
			topic331	Criminality	.981
			topic332	Political radicalism	.99
			topic333	Corruption	NA
			Immigration and integration		
			topic340	Immigration and integration	.971
			topic341	Crimes of asylum seekers, refugees	NA
			Cultural policy		
			topic370	Cultural policy	.981
			topic371	Education and research	.905
			topic372	Sport policy	.99
			Civil rights		
			topic470	Civil rights	.981
			topic471	Gender policy	.99
			topic472	LGBTQ+ policy	.99
			Foreign policy		
			topic400	Foreign policy, international relations	.962
			topic420	EU/EEA	.962
			topic460	Developmental policy	.971

Figure 2 Variable overview

3.3 Measuring instruments

Some of the data used in my analysis is provided through a larger dataset. I have used two categories of variables: topics and the parties' top candidates, and the use of these variables were coded manually with guidance of a codebook. The external material is, as mentioned, also coded manually based on of a codebook constructed for this particular analysis. In this codebook, I have developed eight categories aiming to analyze certain aspects of the climate communication used in the social media posts. The categories apply to the visual and the textual elements of the posts. It is specified in each category what elements of the post are to be coded. The codebooks in their entirety are included in the appendix.

Visualization of environmental topics

This category considers only the visual element (image or video) of a post. This category aims to define what environmental topic is visualized, such as climate changes, extreme weather, and climate activism. All visual elements are coded separately as either present (= 1) or not present (= 0) in the respective post.

Sub-topics of environmental policy and energy policy

All other categories apply to the posts in their entirety. The first of these aims to define what environmental subtopic is discussed in the post. Here, the codebook differentiates between a number of subtopics, such as climate and environment, research, animals, preserving nature and oil and gas. I decided to include mentions of climate and environment in the same subtopic, as I realized while coding that the politicians use these terms interchangeably, even though the terms technically have different meanings. These variables are coded based on whether the statements are 0 = not mentioning the subtopic, 1 = supporting the subtopic, 2 = opposing the subtopic or 3 = mentioning the subtopic without taking a supporting or opposing stance.

Responsibility and blaming

Two categories are created with similar goals of picking up whether a post assigns responsibility for solving climate issues, or blame for creating climate issues, to other actors. Both categories use the same variables which define actors ranging from national political actors, international political actors and societal actors. The categories are coded separately as either present (= 1) or not present (= 0) in the respective post.

Consequence and urgency

There are also three categories made with the intention of picking up on certain types of statements. The category "consequence" is used for mentions of actual consequences of

climate issues. The category “urgency” is used for mentions of urgency of taking action against climate changes.

Environmental actions and plans

The final category aims to analyze whether the politicians are communicating actual actions or plans to fight climate issues and better the environment. It differentiates between mentions of actual plans and/or actions (coded as 2), vague mentions of plans and/or actions (coded as 1), or no mentions of plans and/or actions (coded as 0).

3.4 Coding procedure

For the topic-specific coding, I analyzed the data by taking all posts that were coded with environmental and/or energy policy (526 posts) in the main dataset into a separate dataset. For data processing, I used the software SPSS. In my new separate dataset, I added the 33 variables I developed for the topic-specific coding, focusing on environment/energy. I then coded all 526 posts again, directly in the SPSS dataset, by the topic-specific. Like in the coding of the main dataset, I coded the data, guided by my research questions and hypotheses.

With my complete dataset, I was able to do comparative and descriptive analyses in order to answer my research questions. I mainly used the dataset including 526 environmental posts in my analysis. However, in comparing the amount of environmental topics with other political topics, I used the main DigiWorld dataset of 1682 posts. I did not face any substantial obstacles or challenges while analyzing the data.

3.5 Quality of research

In order to maintain transparency, it is important to discuss the quality of the research. I will in this subchapter discuss my research in relation to reliability, validity, and generalizability, as well as its limitations.

Reliability

An important part of a research project is its degree of reliability. A high level of reliability means that repeated measurements with the same measuring instruments will give the same result (Ringdal 2020, p. 103). Reliability in a content analysis is ensured through a thorough coding scheme with clear instructions for how the variables are to be coded (Ringdal 2020, p. 267). This research is conducted through manual coding, which often comes with problems related to subjectivity and human error. Although the coding is based on a codebook with a specific set of categories and variables, they might be interpreted differently by all individuals. With a topic like political communication comes a consequence that own political views, and own

interpretation of the parties and their candidates, can create a difficulty of maintaining objectivity. To test the reliability of the categories I developed myself, I did an intra-coder reliability test. I coded an amount of 50 posts (approximately ten percent of the whole data material consisting of environmental and energy posts) twice and compared the results of agreement. The categories from the main coding, in the DigiWorld project, was tested with an inter-rater method, where all coders coded the same material, and the results of agreement were compared. Almost all categories achieved sufficient levels of reliability. The categories for positive and negative content in the DigiWorld project did not receive sufficient levels of reliability, which gave consequences for my analysis on framing moral evaluation. Reliability coefficients are mentioned in the overview of all variables used from both my own codebook and the DigiWorld codebook.

Validity

A high level of validity means that one is actually measuring what one wants to measure (Ringdal 2020, p. 103). The categories of the codebooks are designed to target specific elements of the parties climate communication that is relevant to measure in order to answer my research question and test my hypotheses. My analysis looks at how the parties and politicians frame their communication. A frame is a fairly abstract variable that is hard to identify and code in a content analysis. As a result, "it is extremely difficult to neutralize the impact of the researcher in framing research" (Van Gorp 2005, p. 503). Maher (2001, p. 84) claims that framing "has proved to be an elusive concept to measure." The DigiWorld codebook is constructed to reveal several contexts within political communication. I have to the best of my ability tried to formulate an external codebook that is clear and well explained, as well as maintaining an objective outlook while coding the material. In discussion with my supervisor, we agreed that these categories would measure what they should measure.

Generalizability

Generalizability is understood by the degree to which the findings are transferable to other instances. This term is connected to the quality of interpretations, the insight of the research, and whether it is supported by other researches (Ringdal 2020, p. 247). The current study is based on a full survey including all posts that were published on Facebook and Instagram by the selected top ten Norwegian parties and their party leaders during the 2021 election campaign. This means that the results show exactly how the parties communicated about environmental topics during this election. However, although my study is generalizable for the 2021 Norwegian election, the results may be difficult to transfer to other elections in Norway (e.g., at other points in time, at other political levels), other countries, or other social media.

3.6 Research ethics

The ethical risks associated with this study are very low to non-existent since this study only deals with public communication that was published by the parties and party leaders consciously. Concerning data protection, it is worth mentioning that the raw materials might contain some limited information about individuals (e.g., individual voters shown in individual posts), but the risk for them is low and the data were only stored on NTNU's internal servers and will be anonymized before the project ends. The overall project was approved by the Norwegian Center for Research Data (NSD), and my additional analysis does not include information on individuals and thus does not bring along any challenges concerning personal data of any individuals. Therefore, I did not have to send in an extra application to NSD.

4 Results

In this chapter, I will present the results of the content analysis to answer my overarching research questions: RQ1) *which parties engaged how much in environmental and energy as topics on social media during the 2021 Norwegian election campaign?* RQ2) *how did the parties and their top candidates discuss environmental issues on social media during the 2021 Norwegian election campaign?* The chapter is divided into two subchapters to answer both research questions.

4.1 Influencing what issues citizens consider important

My first research question asks *which parties engage how much in environmental and energy as topics on social media during the Norwegian election campaign of 2021?*

This part of the analysis aims to give answer to the RQ1, as well as H1.1, H1.2, H1.3, and H1.4. The subchapter gives insight into the parties' focus on environment and energy topics and how they prioritize these compared to other political topics.

I have decided not to differ and compare the posts between Facebook and Instagram, as I realized while coding that they use widely the same content for both social platforms. Moreover, I do not differentiate between parties and their top candidates. This is because the number of posts are few, and the material did not differ much from the party profile and the candidate profile. I ran a comparative analysis for both the platforms and parties vs top candidates, which confirmed that the data did in fact differ only slightly. It is apparent that the political parties run broadly the same campaigns on both platforms, and also on both the party and the candidate profiles, at least concerning the aspects covered by the categories my analysis bases on.

4.1.1 Focus on environment and energy by different parties

Overall, 1682 posts were published by the ten investigated parties and their top candidates during the period under investigation. Out of these 1682 posts, 526 mentioned environmental and/or energy policies (31% of all posts). Table 1 shows that SV was the party who published the most about these topics with 27 percent (141 posts) of the 526 posts, while Pf posted the least on environmental/energy policy with 1 percent of all posts on this topic (2 posts). MDG and R published the exact same number of posts of 92, which makes up roughly 18 percent each. Also V made up 15 percent (77 posts) of the environmental posts. It becomes clear that most of the left-wing parties focused more strongly on discussing environmental issues than the right-wing parties. However, FrP takes up 10 percent (50 posts) of the environmental posts, while Ap only accounts for 5 percent (27 posts). This might be a result of FrP being strongly

focused on one particular topic. This will be revealed in the next subchapter, where I analyze the mentions of subtopics of environmental and energy policies.

Table 1 Top-to-bottom posters of environmental and energy policy	% of environmental posts n=526	% of parties' total amount of social media posts n=1682	Parties' amount of environmental posts	Parties' total amount of social media posts
Sosialistisk Venstreparti	27	45	141	312
Miljøpartiet de Grønne	18	72	92	128
Rødt	18	26	92	359
Venstre	15	54	77	143
Fremskrittspartiet	10	30	50	169
Arbeiderpartiet	5	15	27	175
Høyre	4	13	23	184
Senterpartiet	3	19	13	68
Kristelig Folkeparti	2	13	9	68
Pasientfokus	1	3	2	76
Total	100	31	526	1682

Table 1 Top-to-bottom posters of environmental and energy policy

When it comes to the focus on environment/energy as measured by the share of the parties' posts focusing on this topic (Table 1, right column), we see that MDG has by far the strongest focus on this topic with 72 percent of all their posts. MDG is followed by V (54%) and SV (45%), FrP (30%) and R (26%). The lowest focus on environment and energy within their own social media posts show H (13%), KrF (13%) and PF (3%).

In relation to H1.4, *right-wing parties focus more strongly on energy policy than environmental policy*, table 2 compares how strongly the parties focus on environment on the one hand and energy on the other hand within the 526 posts addressing environment and energy. Several topics could be coded for each post, and in many posts, bot environment and energy were addressed at the same time. The percentages are for the most part high in regard to environmental policy, meaning that the posts discussing energy policy also often includes mentions of environmental issues. Only FrP and Sp discuss energy policy (FrP: 80%, Sp: 54%)

more than they discuss environmental policy (FrP: 44%, Sp: 46%). Ap, KrF and Pf discuss environmental policy in 100 percent of their environmental posts, while having a substantially low percentage of energy policy mentions (Ap and KrF: 11%, PF: 0%). SV (15% energy; 97% environment), MDG (24% energy; 99% environment) and V (26% energy; 97% environment) also fall below the average percentage of energy policy mentions of 29 percent. The table then shows that R (29%), H (39%), Sp (54%) and FrP (80%) are the parties that discuss energy policy the most. These parties are at the same time the ones that discuss environmental policy the least, and below the average of 90 percent, are FrP (44%), Sp (46%) and R (89%).

Table 2 Share between parties' mentions of environmental and energy policy

	Ap n=27	FrP n=50	H n=23	KrF n=9	MDG n=92	R n=92	Sp n=13	SV n=141	V n=77	Pf n=2	Average % n=526
Environmental policy %	100	44	97	100	99	89	46	97	97	100	90
Energy policy %	11	80	39	11	24	29	54	15	26		29

Table 2 Share between parties' mentions of environmental and energy policy
Note: n=526 posts addressing environment and energy. **Cramer's V:** environmental policy = .558, energy policy = .415

4.1.2 Top topics of parties

H1.3 hypothesizes that a party's ideology influences which topics they address the most often. The hypothesis takes the concept of issue ownership into consideration and revolves around how much the parties prioritized environmental and energy topics compared to other political topics. Table 3 presents the parties top five most communicated topics on their Facebook and Instagram. Here, it must be mentioned that particularly the category "Labor and social issues" involves a range of different policies. Please consult with the variable overview presented in chapter 3 for full insight into the different topics that are included into these general topic categories.

Table 3 shows that MDG and V had "environment and energy" as their number one communicated topic during the election campaign. SV and Sp had these topics as their second most communicated topic. FrP and R as their third most communicated topic, and Ap, H, KrF and Pf as their fifth most communicated topic. Seven out of ten parties had "labor and social issues" as their most discussed topic, while MDG and V had it as their second, and Sp as their third most discussed topic. "Economy and finance" were also a highly discussed topic and placed first with Sp and second with Ap, FrP, H, R and Pf. Also "cultural policy" was prioritized by most parties, with KrF placing the topic in second place, and Ap, H, and V placing it in third place. "Polity", which involves institutional and normative aspects of politics such as structures

and laws, were highly discussed by KrF, SV and PF (third place), Ap, MDG and R (fourth place) and Sp (fifth place). Only FrP had “immigration” as one of their top five most communicated topics, while both them and MDG discuss the topic of “transport and infrastructure”.

Interestingly, the political rivals, Ap and H have an almost identical top five ranking, indicating that they communicate about the same political topics.

Table 3
Parties' top 5 topics

	Ap n=175	FrP n=169	H n=184	KrF n=68	MDG n=128	R n=359	Sp n=68	SV n=312	V n=143	Pf n=76
1	Labor and social issues	Labor and social issues	Labor and social issues	Labor and social issues	Env. and energy	Labor and social issues	Economy and finance	Labor and social issues	Env. and energy	Labor and social issues
2	Economy and finance	Economy and finance	Economy and finance	Cultural policy	Labor and social issues	Economy and finance	Env. and energy	Env. and energy	Labor and social issues	Economy and finance
3	Cultural policy	Env. and energy	Cultural policy	Polity	Transport	Env. and energy	Labor and social issues	Polity	Cultural policy	Polity
4	Polity	Immigration	Non-political topics	Civil rights	Polity	Polity	Defense policy Transport	Economy and finance	Foreign policy	Other political topics
5	Env. and energy	Transport	Env. and energy	Economy and finance Env. and energy	Civil rights	Foreign policy	Polity Cultural policy	Cultural policy	Economy and finance	Env. and energy Media policy

Table 3 Parties' top 5 topics
Note: n=1682 posts. **Cramer's V:** labor and social issues = .267, environment and energy = .393, culture = .253, polity = .143, economy and finance = .259, immigration = .299, transport = .258, non-political topics = .194, other political topics = .133, civil rights = .178, foreign policy = .172, defense policy = .193, media policy = .096

4.2 Influencing the perspective citizens take on issues

My second overarching research question asks *how environmental and energy topics are discussed by the parties*. Here, it is interesting to look at how the politicians present their communication based on the four elements of framing. This includes data revolving subtopics of environment and energy policy (which can be interpreted as problem definitions), focus on consequences of environmental problems and urgency to solve them, addressing of blame and responsibility towards actors, and mentions of actions and plans towards resolving environmental problems. Further, the subchapter investigates how the parties used personalization as part of their communication strategy in regard to environmental and energy

policy compared to other topical policies. Lastly, an insight in how they visualize the issue is presented.

4.2.1 Framing

The four elements of frames can be used as categories for content analysis. I will present results in connection with these elements in order to answer RQ2.1: *which parties highlight which problem definitions, causal interpretations, moral evaluations, and treatment recommendations in their environmental posts?*

Problem definition

A problem can be defined by looking at how the parties have different perspectives on certain aspects of topics. What parts of a problem do the parties focus on? To uncover what perspectives are addressed within environmental and energy topics, I categorized different subtopics mentioned in the posts. This way, the subtopics can be interpreted as problem definition.

Table 4 presents the subtopics and addresses whether the parties support the topic, oppose the topic or only mention the topic without taking a stance towards it. Here, I differ between “climate and environment”, “climate research”, “green politics”, “preserving nature”, “animal rights”, “sustainability” and “stopping oil and gas”. The category “climate and environment” includes both mentions of climate and climate change, and the environment. This category is mentioned most often, and the Cramer’s V of .398 indicates that the relationship between the subtopic and the parties is relatively strong compared to some of the other topics. “Stopping oil and gas” is also a frequently discussed topic (16% supports topic, 8% opposes topic, 2% mentions topic without taking a stance). “Preserving nature” is addressed on an average of 19 percent, while the subtopic of “sustainability” is placed right behind with 14 percent. “Green politics”, which includes topics like developing green technology or green jobs, is addressed on an average of 12 percent. “Animal rights” is mentioned in an average of 9 percent of the environmental posts. This subtopic has a low Cramer’s V score of .192, which shows that there is not a strong relationship between addressing the topic and the parties. The category “climate research” aims at covering if the parties refer to actual research when discussing environmental topics and is the least addressed subtopic with an average of 7 percent.

Table 4 Addressing subtopics

	Ap n=27	FrP n=50	H n=23	KrF n=9	MDG n=92	R n=92	Sp n=13	SV n=141	V n=77	Pf n=2	Average % n=526
Climate and environment %											
1 Supports topic	96	10	57	89	77	74	54	92	72	100	74
2 Opposes topic		14									1
3 Mentions topic		22	9					1			3
Climate research %											
1 Supports topic		4			21	12		4	1		7
Green politics %											
1 Supports topic			22	11	12	1	8	9	39		12
Preserving nature %											
1 Supports topic	7			44	33	27	15	11	25		19
Animal rights %											
1 Supports topic	4	2	4		17	11		6	14		9
Sustainability %											
1 Supports topic	4	2	4	22	33	14	8	3	27		14
Stopping oil and gas %											
1 Supports topic	7				24	22		11	29		16
2 Opposes topic		74	13								8
3 Mentions topic	4	2	13	11	3	2	8	1			2

Table 4 Addressing subtopics

Note: n=526 posts addressing environment and energy. **Cramer's V:** climate and environment = .398, climate research = .280, green politics = .391, preserving nature = .297, animal rights = .192, sustainability = .347, stopping oil and gas = .503

While most subtopics receive exclusively support, “climate and environment” and “stopping oil and gas” have gotten instances of opposition and were also only mentioned sometimes. All parties support the subtopics of “climate and environment” and “sustainability”, while some parties are more supportive than others. MDG, SV, R and V address a relatively large variety of different issues, while the other parties strongly focus on certain aspects. When interpreting the findings, it must be noted that KrF and Pf posted very seldom on environment/energy (KrF: 9 posts, Pf: 2 posts). The resulting high percentages of 89 and 100 of posts discussing environmental and energy policy must therefore be interpreted very carefully. “Green politics”, “animal rights” and “climate research” received minimal attention. “Green politics” was mentioned by seven out of ten parties, with V being the one that addresses the subtopic the most (39%). “Animal rights” was also addressed by seven parties, however only with an average of 9 percent of the environmental posts, with MDG mentioning the subtopic the most often (17%). “Climate research” is the least discussed subtopic, with an average of 7 percent. MDG has mentioned “climate research” in 21 percent of their posts, making them the party that most often refers to research in their communication.

An interesting finding is that FrP is the only party that opposes “climate and environment”, with a percentage of 14 percent of their environmental posts. They also oppose measures to “stop oil and gas” in 74 percent of their environmental posts. Also H is opposing “stopping oil and gas” (13%). The left-wing parties Ap, MDG, R, SV, and V support “stopping oil and gas”, with MDG, R and V being far above the average of 16 percent. The “stopping oil and gas” subtopic also has a Cramer’s V of .503, indicating that the relationship between the topic and the party is relatively strong.

The parties also define problems by addressing the consequences that come with environmental issues, and the urgency there is to fix these problems. Table 5 presents the share of mentions of consequence and urgency between the parties, showing that MDG is the party that most often mentions both problems with 27 percent of consequence mentions and 22 percent of urgency mentions in their environmental posts.

Table 5 Mentions of consequence of climate change and urgency to solve the crisis %

	Ap n=27	FrP n=50	H n=23	KrF n=9	MDG n=92	R n=92	Sp n=13	SV n=141	V n=77	Pf n=2	Average % n=526
Consequence %		2		22	27	15		11	3		11
Urgency %				11	22	9		5	1		7

Table 5 Mentions of consequence and urgency
Note: n=526 posts addressing environment and energy. **Cramer’s V:** consequence = .290, urgency = .291

KrF is the party that mentions consequence (22%) and urgency (11%) the second most, by percentage. Here, we must keep in mind that the party only posted 9 environmental posts and the percentage is taken from these, so overall, this happened very seldom. Third comes Rødt with 15 percent of their environmental posts containing consequence mentions and 9 percent containing urgency mentions. Ap, H, Sp and Pf did not mention any consequences or urgency in their environmental posts, while FrP only mentioned consequences in 2 percent of theirs. The table shows a pattern (with the exception of FrP and the parties not mentioning either consequence or urgency) where the parties that mention consequences of environmental issues also mention urgency, always in a slightly lower frequency.

Attribution of causes/blame

Table 6 shows how much the parties and politicians assigned blame to different actors for damaging the environment to different actors. Here, I differentiate between assigning blame to the people, the government and politicians, other political parties or representatives, other

countries, international actors (EU, UN etc.), industries or companies or to a general “everyone”. An interesting finding is that none of the parties or top candidates assign blame to the groups involving voters - “the people” and “everyone”. Instead, they are in most cases blaming each other. Other political parties and/or representatives are the most blamed actors by the parties. FrP and MDG have the highest percentages of blaming other political parties or representatives, with 12 (FrP) and 11 (MDG) percent. Sp also blames other political parties/representatives above the average percentage, in 8 percent of their environmental posts. The share of blames is divided as follows: FrP blamed H, R, SV, and MDG. H blamed Sp. MDG and Sp both blamed H. SV blamed FrP. V blamed H, Ap, SV and Sp. The other parties, Ap, KrF and Pf did not assign any blame. R assigned blame to political parties and/or representatives without naming a party or candidate. H was in total blamed the most for damaging the environment and climate.

Table 6 Assigned blame for damaging the environment and climate %

	Ap n=27	FrP n=50	H n=23	KrF n=9	MDG n=92	R n=92	Sp n=13	SV n=141	V n=77	Pf n=2	Average % n=526
The people %											
The government and the politicians %					13	10		4			5
Other political parties/representatives %		12	4		11	3	8	4	3		6
Other countries %		8				2					1
International actors %						1	8				.4
Industries/companies %				11							.2
“Everyone” %											

Table 6 Assigned blame for damaging the environment and climate
Note: n=526 posts addressing environment and energy. **Cramer's V:** the government = .227, other parties/representatives = .164, other countries = .223, international actors = .201, industries/companies = .331

Highly interesting is also that MDG, R and SV, who were all in opposition of the last government, are the only parties that assigned blame towards the government. MDG was the party who blamed the government the most with 13 percent of their environmental posts. Other countries and international actors were rarely assigned blame. FrP (8%) and R (2%) assigned blame to other countries, while R also assigned blame to international actors (1%) together with Sp (8%). Only KrF assigned blame towards industries/companies, in 11 percent of their environmental posts. Ap and Pf did not assign any blame towards any actors.

Moral evaluation

My wish was to discuss positive and negative content within the environmental posts in relation to moral evaluation as the third framing element. However, the variables used for positive and negative content did not receive a sufficient degree of reliability according to the reliability test. These variables were therefore taken out of the analysis.

Treatment recommendation

Table 7 shows how much the parties assigned responsibility of fixing the environment to different actors. The actors are grouped the same as in the table for blame. Also here can we see that the government and the politicians get assigned the responsibility the most, like they were assigned blame. MDG assigned responsibility towards the government in 24 percent of their environmental posts. They were also the party that most frequently assigned responsibility to various actors, indicating that they are the party that is most comfortable with assigning responsibility.

Table 7 Assigned responsibility for fixing the environment and climate change %

	Ap n=27	FrP n=50	H n=23	KrF n=9	MDG n=92	R n=92	SP n=13	Sp n=141	V n=77	Pf n=2	Average % n=526
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The people %					5	1					1
The government and the politicians %	4		4		24	7		8	7		9
Other political parties/ representatives %		2			1						.4
Other countries %		8			1				1		1
International actors %											
Industries/ companies %					1						.2
“Everyone” %	4				8	2		1	4		3

Table 7 Assigned responsibility for fixing the environment and climate change
Note: n=526 posts addressing environment and energy. Cramer’s V: the people = .190, the government = .263, other parties/representatives = .108, other countries = .215, industries/companies = .095, “everyone” = .157

The results show that the parties and politicians were more comfortable with assigning responsibility to the people and “everyone”, then they were assigning blame. An interesting finding is also that FrP only assigned the responsibility towards either other countries or other parties (one occasion of assigning responsibility towards Ap), indicating that they themselves take no responsibility to fix the environment. Ap was the only party that was assigned responsibility by other parties, one time by FrP and one time by MDG. International actors

were assigned no responsibility, while industries and/or companies were only assigned responsibility by MDG, and only in 1 percent of their posts.

Table 8 presents to what degree the parties mention actual actions and/or plans towards environmental and energy policy. It categorizes between no mentions of actions and/or plans, vague mentions of actions and/or plans, and mentions of concrete actions and/or plans.

Table 8 Level of mentions of concrete actions and/or plans towards environmental and energy policy %

	Ap n=27	FrP n=50	H n=23	KrF n=9	MDG n=92	R n=92	Sp n=13	SV n=141	V n=77	Pf n=2	Average % n=526
No actions/plans %	59	74	61	77	53	65	54	75	40	100	63
Vague actions/plans %	33	10	22	11	15	7	39	6	27		14
Concrete actions/plans %	7	16	17	11	32	28	8	18	33		23

Table 8 Level of mentions of concrete actions and/or plans
Note: n=526 posts addressing environment and energy. **Cramer's V** = .241

By the average percentage, the table shows that the parties address environmental and energy policy mostly without mentioning any plans or actions (63%). However, if they mention actions or plans, these are more often concrete (23%) rather than only vague (14%). V is the party that most often refers to concrete actions or plans, with a percentage of 33 of their environmental posts. Followed by MDG (32%) and Rødt (28%). These three parties are all above the average percentage of mentioning concrete actual actions and plans. The parties that mainly discuss environmental topics without discussing any actions or plans are KrF (77%), SV (75%), and FrP (74%). Sp and Ap are the parties that most often mention only vague actions and plans (Sp: 39%, Ap: 33%). The party that mentions plans and actions the least often is Pf, who in 100 percent of their posts mention no actions or plans.

4.2.2 Personalization

RQ2.2 seeks to reveal the parties' use of personalization of their top candidates in their environmental posts contra their non-environmental posts. To that aim, I will look at how far different the parties use their top candidates in their environmental posts. Further, I compare how they use personalization in their environmental posts with how they use it in their non-environmental posts.

Table 9

Personalization in environmental posts compared to non-environmental posts %

	Ap n=27 n=175	FrP n=50 n=169	H n=23 n=184	KrF n=9 n=68	MDG n=92 n=128	R n=92 n=359	Sp n=13 n=68	SV n=141 n=312	V n=77 n=143	Pf n=2 n=76
Environmental posts % (n=526)	75	58	31	75	15	32	33	55	50	100
Non-environmental posts % (n=1682)	40	40	39	32	17	44	35	40	27	55

Table 9 Personalization in environmental posts compared to non-environmental posts

Table 9 shows that most parties use personalization more in their environmental posts than in their non-environmental posts. Pf (100%), KrF and Ap (75%) use personalization the most in their environmental posts. Following are FrP (58%), SV (55%) and V (50%). These parties have in common that they all use personalization more in their environmental posts than in their non-environmental posts. The other parties use personalization more in their non-environmental posts. R uses personalization in 44 percent of their non-environmental posts, compared to 32 percent in their environmental posts. H uses personalization in 39 percent of their non-environmental posts. Following comes Sp (35%) and MDG (17%). MDG is the party that uses the least amount of personalization in both their environmental (15%) and non-environmental (17%) posts.

4.2.3 Visualization

An important aspect of climate communication is visualization of issues. It is therefore relevant to analyze the parties' use of visual elements. RQ2.3 asks *which visualizations do the different parties use in their environmental posts?* Table 10 gives insight into how far different topics are visualized and how much the parties use visualization in their campaigning. I differ between 7 different visualizations. Please consult with the external codebook for visual examples. "Green nature" and "industry and emission" were used by almost all parties. KrF only posted visualizations on "other" environmental topics, while Pf only posted visualizations on "green nature" (in one of their total of two environmental posts). "Green nature" was used on average in 18 percent of all environmental posts, which means that MDG, Sp and V (and Pf) used the visualization of green nature above an average amount. FrP used "green nature" in only 4 percent of their posts. In contrast, they used visualization of "industry and emission" in 14 percent of their posts. "Industry and emission" was the second most used visualization with an average of 7 percent. Sp and H used visualization in 31 and 30 percent of their environmental posts, far higher than the average percentage. These findings show that the parties that are the most supportive of keeping the oil industry, FrP, H and Sp (table 4), are also the ones who

use images of oil and gas-related topics the most in their visualizations. That indicates that the text and pictures of posts go mostly hand in hand.

Table 10 Visualization of environmental topics %	Ap n=27	FrP n=50	H n=23	KrF n=9	MDG n=92	R n=92	Sp n=13	SV n=141	V n=77	Pf n=2	Average % n=526
Green nature %	11	4	13		27	17	31	17	22	50	18
Polluted nature %	4		4		1				1		1
Extreme weather %	4				2	1					1
Animals %	4	2			11	4	15	2	5		5
Industry and emission %	4	14	30		1	4	31	7	3		7
Climate activism %					8			5	3		3
Other %		2		11	19	5		1	7		6

Table 10 Visualization of environmental topics
Note: n=526 posts addressing environment and energy. **Cramer's V:** green nature = .189, polluted nature = .136, extreme weather = .124, animals = .173, industry and emission = .292, climate activism = .169, other = .266

MDG is the only party who used all topics of visualization, which indicates that they show a higher variety in visualizing environmental issues than the other parties. Their three most used visualizations are “green nature” (27%), “other” (19%) and animals (11%). In addition to MDG, also Sp has a higher focus on visualization of animals with 15 percent. MDG, SV and V are the only parties who use visualization of climate activism in their environmental posts, with MDG and SV scoring above the average of 3 percent. “Polluted nature” and “extreme weather” are used the least in the parties’ environmental communication, with an average percentage of 1.

5 Discussion

I will in this chapter discuss the most important findings from the results of the content analysis in regard to the overarching research questions, as well as the derived hypotheses and specific research questions. The results will also be discussed in relation to the conceptual framework I presented in chapter 2. Further, I will discuss the limitations of the study as well as the opportunities for future research.

5.1 Important findings

The analysis has resulted in several interesting findings. While some are more significant than others, they contribute to a greater understanding of how much, and how the parties addressed environmental and energy topics in their social media posts.

RQ1 Which parties engaged how much in environmental energy as topics on social media during the 2021 Norwegian election campaign?

Overall, about every third post mentioned environmental and/or energy policies. SV was the party who posted the most amount of environmental and energy related posts. This means what we must reject H1.1: *MDG has the highest number of environmental posts*. SV's high number of environmental posts is however probably a result of the party using the words "for climate" or "for environment" in their slogan. Their slogans are very often mentioned in their social media posts, regardless of the topic they are discussing. The analysis did however confirm H1.2: *MDG addresses environment and energy more often in their own posts than the other parties do in their posts*. Although MDG was not the party that addressed environmental and energy topics the most, they were the party that focused the largest part of their own social media posts on these topics.

The analysis placed SV, MDG, R and V on the top ranking of environmental posters.

In fifth position comes FrP, and in sixth comes Ap. Hypothesis H1.3 states that *a party's ideology influences which topics they address the most often*. It is expected that the parties focus their campaign efforts on creating visibility around issues that they are identified with and that the voters consider them as competent on (Haßler et al. 2021; Petrocik 1996). The analysis shows that this hypothesis is mostly supported. Based on their party program and ideology, SV, MDG, R and V are expected to prioritize environmental issues. The hypothesis is however challenged by the fact that FrP addresses environment and energy more than Ap. Ap did not engage as much in environment and energy topics as they were expected to. Their party program indicated that they would discuss environmental policy much more than the results show. This is an interesting result, as it shows that public communication is by far not

often identical with what the parties write in their party programs. When it comes to topics, Ap seem to have more similarities with H than their fellow left-wing parties. FrP on the other hand, engaged more in environmental and energy topics than they were expected to. This might be a result of them being highly involved in discussions regarding oil and energy policy.

This leads us to the next hypothesis, *H1.4 Right-wing parties focus more strongly on energy policy than environmental policy on Facebook and Instagram*. FrP and Sp had a larger focus on energy policy than environmental policy in their social media posts. While FrP is considered a right-wing party, Sp is considered a center party. However, when it comes to energy policy, the party tend to agree more with the right-winged parties than the left (NRK 2022b). H, on the other hand, focused much more strongly on environment than on energy policy in their posts which addressed these issues. Yet, they are still right behind FrP and Sp on the ranking of most energy policy related posts. In conclusion, *one* of the right-wing parties focus more strongly on energy policy than environmental policy, as well as Sp who were also expected to do so. H1.4 is thus partly confirmed.

RQ2 How did the parties and their top candidates discuss environmental issues on social media during the 2021 Norwegian election campaign?

To answer the second overarching research question, I derived three subquestions. The first question, RQ2.1, asks *which parties highlight which problem definitions, causal interpretations, moral evaluations, and treatment recommendations in their environmental posts?*

A problem definition determines what a causal agent is doing with what costs and benefits (Entman 1993, p. 52). The results show that the parties highlight some problem definitions more than others. Their focus is on “climate and environment” in general, and also measures to “stop oil and gas” and “preserve nature”, as well as facilitating “sustainability”. They define problems in relation to “green politics”, “animal rights” and “climate research” less frequently. We see that the parties that are the most associated and trusted with climate and environmental politics, are also the ones that are the most comfortable with speaking on several subtopics. MDG, SV, V and R mentions all subtopics within the analysis. This might be explained by the potentially larger interest of the target groups of these parties on the issue. When it comes to consequence and urgency, it is clear that these are not problems that are defined very often in the parties’ social media posts. MDG is the party that highlights these problem definitions the most, which correlates with them having the most engaged voters on this topic and thus expect the party to discuss the reality of the problem. Parties like H, Sp and FrP’s have voters that are not as interested in and concerned about climate issues as MDG.

Therefore, they avoid discussing it and thus do not define consequence and urgency as relevant problems.

The causal interpretation identifies the forces creating the problem (Entman 1993, p. 52). A function of social media in election campaigns is to criticize opponents (Aalen 2016). It is therefore relevant to investigate how the parties assigned blame to different actors. None of the parties assigned blame to the people and “everyone”, the two categories involving voters. They avoid putting blame on the people they are trying to persuade, which can be a strategic move towards collecting votes. Instead, they are in most cases blaming each other, which can also be interpreted as a form of negative campaigning. FrP, MDG and Sp blamed other political parties or representatives above an average percentage. A natural result is that MDG, R and SV, who were all in opposition of the last government, are the only parties that assigned blame towards the government. This is expected as they are considered the most disagreeing with the previous government. It also shows that they strongly follow their traditional profile and political ideology.

A treatment recommendation offers and justifies treatments for the problems and predicts their likely effects (Entman 1993, p. 52). A way of understanding treatment recommendation is by looking at how the parties assign responsibility, as well as identifying whether the parties discuss concrete plans and actions to treat the problem. In correlation with being assigned the most blame, the government and the politicians also are assigned the most responsibility. MDG were the party that most frequently assigned responsibility to various actors, indicating that they are the party that is most comfortable with assigning responsibility. This might be because they have high credibility on the topic of environment, and thus feels competent to take lead in assigning responsibility. Industries and/or companies were barely assigned responsibility. Yet, industries are the second largest emitters of greenhouse gasses (SSB 2021). It is apparent that the industry must take responsibility if we want to solve the problems. Why are the parties not assigning any responsibility towards them? This could be considered as an effort of not trying to anger the industry, or maybe criticism towards other parties simply fit better into campaign strategies and what voters expect. The results show that the parties and politicians were more comfortable with assigning responsibility to “the people” and “everyone”, then they were assigning blame. This is in line with how strategies of negative campaigning is not very common in Norway, compared to, e.g., the US (Elmelund-Præstekær 2010). Assigning responsibility to “everyone” can give a sense that “we are all in this together”. This could potentially be a strategy to appeal to people’s sense of unity in the fight against climate change and the detriment of the environment. Another way of researching how the parties offer and justify treatments for the problems related to the environment is to uncover

whether they discuss concrete plans and/or actions towards solutions, or not. Research shows that actions and practical support must be a central part of all climate communication in order to actually motivate and empower the audience to take action (Moser 2016, p. 351). The analysis shows that the parties very often address the issue of environment and/or energy, without providing any solution to the problem. However, if they do mention actions or plans, these are more often concrete rather than only vague. V, MDG and R were the parties that most often referred to concrete actions and plans. This is natural, as they are all parties that are associated with prioritizing environmental policy.

Personalization is a measure often used by politicians to catch attention (Aalen 2016). By investigating the parties' use of personalization in their environmental posts, it can give indications as to how much the parties try to gain more user engagement for this topic. RQ2.2 asks *how far do the parties differ in the use of personalization in their environmental posts and their non-environmental posts?*

The analysis shows that most parties use personalization more in their environmental posts than in their non-environmental posts - Pf, KrF, Ap, FrP, SV and V. Leaving R, H, Sp and MDG, that uses personalization more in their non-environmental posts. As mentioned previously, the posts containing personal updates seem to get more response on social media than the ones discussing political topics (Aalen 2016, p. 203). This might create an incentive to keep posting personal updates to gain attention, and therefore increase the level of personalization in politics on social media. Especially for parties that are not typically associated with environment as an issue, it might be useful to use personalization as a way of creating attention around their perspectives on the topic. This could be a possible reason as to why Pf, KrF, Ap and FrP frequently use personalization in their environmental posts. However, it could be argued that it is wiser for parties that are not considered as competent on environmental topics to avoid creating much attention around them. A possibility is that these parties front their top candidates to distract from the actual policies. MDG is the party that uses the least amount of personalization in both their environmental and non-environmental posts. They have a clear environment and energy policy, and they seem to not rely on personalization to express themselves and gain attention on this topic. They in some way let their policies speak for themselves. One can speculate that MDG's lack of personalization in their posts made them "non-relatable" to the public, and thus affected their electoral outcome.

The presence of an image helps a post to receive more attention (Li and Xie 2020, p. 17). Also, the images help the politicians provide concrete evidence that strengthens their argument that climate change is a result of human actions. (Nerlich and Jaspal 2014, p. 254). The

characteristics and quality of the image is important, as it affects user engagement (Li and Xie 2020, p. 17). One can assume that parties take these preconceptions into consideration when they use visualization in their posts on Facebook and Instagram. Research shows that the typical iconography of climate change includes animals, melting ice and glaciers, extreme weather, globes, and politicians (Wang et al. 2018, p. 1). Since visuals are such an important part of social media, especially on the image-sharing platform like Instagram, I derived the following subquestion: *RQ2.3 Which visualizations do the different parties use in their environmental posts?*

Nerlich and Jaspal (2014, p. 253) highlighted that mediators of climate change have examined how feelings of fear, guilt, helplessness, and vulnerability are evoked in verbal communication and how it can lead to engagement, but also steer people away (Nerlich and Jaspal 2014, p. 253). The parties do not really use these types of visualizations in their environmental communication, and when they do, they often do it carefully. This indicates that the parties are not interested in scaring their voters or focus on more negative aspects of the issues. Chapman et al. (2016) found in their research on public perceptions of climate images that most respondents reacted negatively to images of protest and demonstrations. MDG, SV and V are the only parties who use visualization of climate activism in their posts. Negative reactions to visuals of climate activism might be a reason as to why most parties are reluctant to use this type of visualization. The same goes for other visualizations that remind the audience in a direct manner that there exists an ongoing problem related to the climate and environment. "Polluted nature" and "extreme weather" are considered as visualizations that present consequences and dangers of environmental and climate issues (Nerlich and Jaspal 2014). They more so use visualizations of green nature and generally more "positive" imagery. "Green nature" is the most frequently used visualization and was used by almost all parties. This might be as a result of the parties working towards collecting votes, and therefore avoid "scaring" the public with visualizations that give negative associations. MDG is the only party who used all topics of visualization, which tells us that they show a higher variety in visualizing environmental issues than the other parties. It is not surprising for a green party like MDG to have the most variety in visualizations of this sort. Their image archive most likely consists of more environmental visualizations than the other parties who more often only focus on certain parts of environmental and energy topics, as revealed in RQ2.1.

5.2 Concluding remarks

This thesis cannot determine whether the 2021 Norwegian election was a climate election or not. However, it can conclude that the actualization of the topic is highly visible in the parties' communication on social media. As nearly one of three posts during the election campaign

contained content related to environment or energy, it is safe to say that the climate debate played a central part in the parties' campaigning. However, it is important to keep in mind that the party's communication on social media does not accurately reflect their party programs. This study revealed that Ap is an apparent example for that. Therefore, we cannot expect that the users get a comprehensive picture of environment and energy policy based solely on social media posts. This is something that users should be aware of when being confronted with this topic on social media. It is important to keep in mind that politicians use social media as a campaigning tool, and thus their strategic communication might overshadow their actual stance on certain policies. From my research, politicians can eventually learn that their campaigning has a potential to become more informative. Social media is a great tool for political communication that gives opportunities to reach out to the masses with more than just short messages and slogans.

5.3 Limitations of the study

The most important criticism of quantitative content analysis is based on limitations related to the counting of manifest content, i.e. words and phrases as they appear in the texts. This type of analysis might overlook what words truly mean, and can give distorted results (Ringdal 2020, p. 260), which is also relevant for my study. Nevertheless, my study is useful as a way of indicating, through the content, what communication strategies are actually used by the politicians on social media. A quantitative content analysis is the best method to use in order to answer my research questions aiming to reveal the content in which the politicians produce in order to influence and persuade the public. Another limitation is that due to small numbers of environmental posts, I was not able to run differentiated analyses comparing the platforms as well as politicians and parties. Also, my study is only a case study of Norway, and only of the 2021 election campaign. I only investigate two platforms, and I have not done a differentiated analysis on Facebook and Instagram. These are factors that limits the generalizability of the research. This study also did not include data on user interaction, which could have been interesting, as it might tell something about how much engagement the different topics and strategies created.

5.4 Contributions and further research

A large part of the existing research on climate communication focus on traditional media and news consumption. When climate communication on digital and social media has been research, it is often climate stakeholders such as activists and NGO's that are investigated. There is also far less research done on Facebook and Instagram, and the largest part of existing literature is based on communication on Twitter (Pearce et al. 2019). My study gives

not only insight into political actors' communication about environmental topics, but also how Facebook and Instagram are used in this regard. My measuring instruments can function as a starting point for further similar analyses.

There is a gap in this field that is still yet to be investigated fully. This thesis can inspire further investigations of political communication of environmental topics on social media. As my research only investigates one election in one country, it could be interesting to do comparative analyses on other Norwegian elections campaigns or in other countries. Another interesting study could be how other countries election campaigning on environmental topics compare to Norway's. Something that my study revealed was that the parties' climate communication on social media did not reflect how much they weighted the topic in their party program. In further research, it could be fascinating to investigate how parties' campaigning on social media compares to their actual party program.

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Appendix


External codebook



Oftentimes, posts discuss several topics in addition to environment and oil. In these cases, only the content related to environmental- and oil policies are coded. This means that content is only coded if they are discussed in relation to the relevant topics. For example, actions/plans are only coded if the post refers to actions or plans towards environmental issues.

Visualization of environmental topics (MEDIA)



Many social media posts contain visual elements such as images or videos. This includes photographs, graphics and illustrations, textual images etc., or videos both with or without text, graphics, and illustrations. In this category it is determined what environmental topic the media element visualizes.


This category applies to the visual elements of the post. This includes images (if more than one image, only the first image is coded) or the first minute of a video. The post can include one, more, or none of the categories. Code as many categories as present.

visual_nature	<p>Green nature</p> <p>The image/video gives an idyllic illustration of nature as it is “supposed to be”.</p>	<p>e.g., green forests, fields, clean beaches, etc.</p>	 <p>Ta vare på naturen – ikke ødelegg den</p> <p>SV</p> <p>Landbruk på lag med naturen</p>	0 1
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<p>visual_ pollution</p>	<p>Polluted nature</p> <p>The image/video gives a negative illustration of nature as it is “not supposed to be”.</p>	<p>e.g. plastic in ocean, garbage in the streets, etc.</p>		<p>0 1</p>
<p>visual_ weather</p>	<p>Extreme weather</p> <p>The image/video illustrates extreme weather and its consequences.</p>	<p>e.g., forest fires, rising sea levels, melting ice, drought, hurricanes, floods etc. Including destruction of cities and homes, etc.</p>		<p>0 1</p>

<p>visual_ animal</p>	<p>Animals Animals are pictured.</p>	<p>e.g., farm animals, wild animals (wolves, bears), etc.</p>	 <p>The image contains three news snippets stacked vertically. The top snippet shows a close-up of a pig's face with the text 'LA FLERE GRISER LEVE SOM SCOUT!' in green and pink. The middle snippet shows a wolf in a field with the text 'FLERTALLET VIL BEHOLDE ULV I NORSK NATUR' in white on a black background. The bottom snippet shows a woman in a blue jacket with a dog, with the text 'ALLE LEVENDE SKAPNINGER HAR RETT PÅ ET GODT LIV' in white on a black background.</p>	<p>0 1</p>
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<p>visual_industry</p>	<p>Industry and emissions</p> <p>The image/video contains elements of industry and/or emissions from industry. This category also includes images/videos of politicians visiting industrial sites.</p>	<p>e.g., industrial buildings and facilities, factories etc.</p>		<p>0 1</p>
<p>visual_activism</p>	<p>Climate activism</p>	<p>e.g., “klimabrølet”, etc.</p>		<p>0 1</p>

visual_ other	Other The post includes other visualizations of environmental topics.	e.g., environmental friendly transportation, environmental friendly energy production (e.g. suncell panels), etc.		0 1
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Sub-topics of environmental policy and energy policy

Environmental policies and energy policies include several underlying sub-topics. To better understand which aspects of environmental and energy policy are valued by the politicians, this category differentiates between issues related to the policies, such as climate change, nature, animals etc. Here we code whether the post 0 = does not contain mentions of topic, 1 = supports topic, 2 = opposes topic og 3 = mentions topic but it is unclear if it is supported or opposed. The post can include one, more, or none of the categories. Code as many as present.

This category applies to the entire post (including the first image resp. the first minute of a video).

Examples of 1. “vi må slutte å lete etter olje”, “vi har mer olje enn vi får brukt”,

Examples of 2: «Folk skal ikke straffes for å bruke bilen!», «Man skal ikke ha dårlig samvittighet for å ta et rutefly!», «Oljen bidrar til å sikre velferden vår.», etc.

Examples of 3:

suptopic_ climate	<p>Climate and environment</p> <p>The post deals with issues related to climate change, fighting climate change, the reality of climate change, and environmental issues etc. This category includes both climate and environment, as politicians seem to use these terms interchangeably.</p>	<p>e.g., “Klimagassutslippene går nedover”, “Hetebølgene vil komme oftere”, “Ny dag og nye muligheter for å fikse den klimakrisa”, “På tide å fikse klima”, “Stem SV for miljø og rettferdighet”, “miljøpolitikk”, etc.</p>	0 1 2 3
subtopic_ research	<p>Climate and environmental research</p> <p>This post deals with issues related to climate research and scientific work. E.g., results from scientific studies, numbers, or other data related to climate studies, dialogue with researchers etc.</p>	<p>“FNs klimarapport sier at vi må handle NÅ”, etc.</p>	0 1 2 3
subtopic_ green	<p>Green politics</p> <p>This post deals with issues related to green politics such as green economy, green conversion, etc.</p>	<p>e.g. “omstilling til grønnere økonomi”, “grønn omstilling”, “det grønne skiftet”, “grønn teknologi”, “grønne arbeidsplasser” etc.</p>	
subtopic_ nature	<p>Preserving nature</p> <p>The post deals with issues related to preserving nature, saving forests, endangered species, protected areas of nature, fights against building on preserved land etc.</p>	<p>e.g., “Vi må stanse investeringsfondene som turer fram med vindkraftanlegg som raserer naturen vår. Enig?», «La oss reparere naturen», «Stem for bedre vern av naturen», «Bevar strandsonen», etc.</p>	0 1 2 3
subtopic_ animal	<p>Animal rights</p> <p>The post deals with issues related to animal rights, distinction of animals etc.</p>	<p>e.g., “Venstre tar vare på biene”, “La flere griser leve som Scout”, “Plast skal ikke I magen til hvalen”, “Stopp artsutryddingen!”, etc.</p>	0 1 2 3

subtopic_ sustainability	Sustainability The post deals with issues related to sustainable living, e.g., sustainable food, food waste, sustainable power, reusage, sustainable clothes, sustainable transport etc.	e.g., “Det skal lønne seg å reise miljøvennlig!”, “Mindre motorvei, mer jernbane”,	0 1 2 3
subtopic_ oil_gas	Oil and gas The post deals with issues related to oil and gas. Discussion of the petroleum sector, wanting to keep searching for oil, wanting to stop searching for oil, etc. Here, 1 is coded for supporting measures to stop oil searching, while 2 is coded for opposing measures to stop oil searching.	e.g., “verden trenger norsk olje og gass”, “vi må slutte å lete etter olje”, “vi har mer olje enn vi får brukt”, “FrP er den eneste garantisten for oljearbeideren”, etc.	0 1 2 3

Assigning responsibility

To which actors is the responsibility of solving environmental issues assigned to? In climate communication, the responsibility of environmental issues is often addressed. This category seeks to examine politicians' views on responsibility for solving climate related problems and differentiates between different actors. The post can include one, more, or none of the categories. Code as many as present.

This category applies to the entire post (including the first image resp. the first minute of a video).

responsibility_ people	The responsibility lies with the people	e.g., “Vi jobber for at alle i samfunnet skal løse klimakrisa sammen”, etc.	0 1
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responsibility_ gov	The responsibility lies with the national government and the politicians.	e.g., "Regjeringen må ta større ansvar!", "Regjeringen har slumret lenge nok. På tide å fikse klima.", "Det er politikernes jobb å tørre å ta tøffe valg», «Det kan ikke overlates til markedet alene eller hver enkelt privatperson. Det krever sosialdemokratisk politikk og en mer aktiv stat.», «Hør SV og Venstre forklare hvorfor det er så viktig for klimaparti å ta ansvar i kampen for klima og natur», etc.	0 1
responsibility_ other_pol	The responsibility lies with other political parties/party representatives. Responsibility is assigned from one political party to another.	e.g., "Det er lett å tenke at andre partier kan ta jobben med å fikse klima, men det har de aldri gjort",	0 1
responsibility_ party	Party name If other political parties/party representatives are selected, and the post refers to a party or political actor, write party name.	e.g. "Høyre", "MDG",	String
responsibility_ other_country	The responsibility lies with other countries.	e.g., "Hvorfor skal Norge stoppe oljeletingen når andre land med mindre ren olje fortsetter?"	0 1
responsibility_ international	The responsibility lies with international actors/institutions (such as the EU, the United Nations	e.g,	0 1

	Climate Change conference, etc.).		
responsibility_ industry	The responsibility lies with industries/companies Responsibility is assigned to companies and industries, and their factories. E.g., the clothing industry, the oil industry, etc.	e.g.,	0 1
responsibility_ everyone	The responsibility lies with «everyone» General talk of responsibility relating to climate change. Includes statements saying that “we” have a responsibility.	e.g., “Klimakrisa er her, vi må gjøre noe NÅ!», “De store oppgavene løser vi sammen”, etc.	0 1

Assigning blame

In addition to assigning responsibility for solving climate issues, it was also highly discussed during the election campaign who is to blame for the environmental challenges we are facing today. It is one thing to hold accountable, but another thing to accuse/blame. Blaming goes a step further than assigning responsibility by saying that the environmental challenges are someone’s fault. This category identifies which actors the politicians blame for causing, or neglecting, environmental challenges. Blaming should only be coded if it is completely clear that there is a blame contained in the post, signaled by words such as “fault”. It differentiates between the same actors as the category “responsibility”. The post can include one, more, or none of the categories. Code as many as present.

This category applies to the entire post(including the first image resp. the first minute of a video).

blame_ people	The people are to blame	e.g.,	0 1
blame_ gov	The government and the politicians is to blame	e.g.,	0 1

blame_ other_pol	Other political parties/party representatives are to blame.	e.g.,	0 1
blame_party	Party name If other political parties/party representatives are selected, write party name.	e.g. "MDG"	String
blame_ other_country	Other countries are to blame	e.g., "Kina har over 300 ganger så høye CO2-utslipp som Norge", etc.	0 1
blame_ international	International institutions/actors (EU, UN, etc) are to blame	e.g.,	0 1
blame_ industry	Industries/companies are to blame	e.g.,	0 1
blame_ everyone	«Everyone» is to blame	e.g.,	0 1

Consequence

Climate change was a widely discussed topic during the election, often in the context of how the parties are planning to fight the changes, but how often were actual consequences of climate change mentioned? This category defines mentions of concrete consequences as a result of climate change. Code as 1 if mentions of consequences is present in the post.

This category applies to the entire post (including the first image resp. the first minute of a video).

consequence	Consequence Mentions of consequences of climate change, such as rising sea levels, climate refugees, threats to ecosystems, etc.	e.g.,	0 1
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Urgency of taking action against climate change

The results of climate change are rapidly affecting the environment, and with this, also the political agenda. It is therefore interesting to explore if the parties consider the urgency of climate change and saving the environment. Code as 1 if mentions of urgency are present in the post.

This category applies to the entire post (including the first image resp. the first minute of a video).

urgency	Urgency Mentions of urgency of taking action to save the environment, to stop climate changes, etc.	e.g., "Klimakrisa slumrer ikke", "Kode rød for miljøet", "FNs klimapanel: Klimakrisa er her, vi må gjøre noe NÅ!", "Ikke vent med klimahandling.", etc.	0 1
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Environmental actions and plans

Are the parties talking about fighting climate change/working for the environment on a general level, or are they presenting actual actions they are planning to do? This category measures the degree of vagueness or specificness of the parties or top candidates talk of actions related to their environmental policies. Code this post as 2 if it contains actual plans or actions, 1 if the post mentions vague plans or actions, or 0 if no plans or actions are mentioned.

This category applies to the entire post (including the first image resp. the first minute of a video).

actions_plans	Actions and/or plans Mentions of actual specific plans and actions to fight climate change or to improve the environment.	e.g., "Her er noen av våre viktigste krav til en Støre-regjering: (følgende av punkter)", "Vi vil stoppe oljeletingen", etc.	2
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	<p>Vague actions and/or plans</p> <p>Vague mentions of plans or actions to fulfill environmental goals, without addressing any further.</p>	<p>e.g., “Med våre grep kommer fuglene til å kvitre lykkelig, fiskene komme tilbake i fjorden, og insektene summe fornøyde.”, “For å løse klimakrisa trenger vi næringslivet på laget”, etc.</p>	1
	<p>No mention of actual actions and/or plans</p> <p>Talk of environmental issues and/or goals, without mentions of actual plans or actions.</p>	<p>e.g., “Stem SV for klima og rettferdighet!”, “Vi skal ta vare på naturen”, “Vi vil gjøre det enklere å skape nye, grønne jobber”, etc.</p>	0

DigiWorld codebookⁱ (only used variables)

B 6 Information about politicians and issues

B6.1 Actors

Here, we code which actors are mentioned in the posts – actors explicitly mentioned in the text and/or visible in an image/video. The creator of the post is not coded as an actor except s/he is also mentioned in the text and/or visible in an image/video.

Examples:

- - A party leader posts an image of another politician on her/his official Facebook page. The party leader is not visible on this image. → Only the other person is coded as an actor.
- - A party leader posts an image of her/himself together with another politician on her/his official Facebook page. → Both the party leader and the other politician are coded as actors.

By actors we mean either specific persons, such as politicians; or organized groups of people, such as parties; or terms that refer to a group of people with certain characteristics that distinguish them from others, e.g., journalists or refugees; or state bodies, e.g., the Ministry of Health. An actor is to be coded if he/she/it is mentioned explicitly in the post or visible in an image or video. Actors can be both active (i.e., they do something themselves) and passive (i.e., something happens to them). Each actor present in the post is represented by one code. It is not possible to choose more than one code for one and the same actor.

Examples:

- - If a politician is an actor, s/he should be coded just as politician (e.g., as actor01) and not at the same time also as average citizen (actor27).
- - A top candidate visits a museum. The top candidate is an actor.
- - The top candidate of party A is attacked by party B. Both top candidate of party A and

party B are actors.

Single politicians mentioned in a post — who are not the top candidates — are always coded as representatives of their political parties, even if they fulfill different political functions (e.g., as members of a government). If several actors belong to the same category, this category can only be coded once.

Example:

- Five non-prominent party members of party A are visible on an image. → All five are subsumed under the code “Party A: Other politicians” which is coded with “1”.

We code as many actors as present in the post. Each of the following actors is coded with “1” if present in the post. If not present, the code is “0”.

Category	Description	Examples	Code
actor01	Jonas Gahr Støre (frontrunner of Arbeiderpartiet)		0 1
actor02	Sylvi Listhaug (frontrunner of Fremskrittspartiet)		0 1

actor03	Erna Solberg (frontrunner of Høyre)		0 1
actor04	Kjell Ingolf Ropstad (frontrunner of Kristelig Folkeparti)		0 1
actor05	Une Bastholm (frontrunner of Miljøpartiet De Grønne)		0 1
actor06	Bjørnar Moxnes (frontrunner of Rødt)		0 1
actor07	Trygve Slagsvold Vedum (frontrunner of Senterpartiet)		0 1
actor08	Audun Lysbakken (frontrunner of Sosialistisk Venstreparti)		0 1
actor09	Guri Melby (frontrunner of Venstre)		0 1
actor10	Irene Ojala (frontrunner of Pasientfokus)		0 1

B 6.4 Topics: Substantive policy issues [topic]

This category refers to the entire post, including the first image/the first minute of the first video, the caption, geo tags, hashtags, and links.

Here it is coded whether the post addresses factual political issues and topics such as climate change, public health, pensions, education, etc. These topics can be addressed using text elements (text of the post, slogan, quote) as well as visual elements (photos, graphics). The aim of the post can be to draw attention to problems, to criticize the positions of political opponents, or to present their own positions and solutions for problems. If different topics are mentioned, all of them should be coded. For each category listed below, it has to be determined whether it is included in the post (1) or not (0).

IMPORTANT: Code as exactly as possible but as generally as necessary. This means: In case of doubt, the general categories (e.g., topic330) following after the detailed subcategories (e.g., topic331, topic332, topic333) are to be coded. At the same time, if a more specific code covers the topic of a post better, the more general code should NOT be coded in addition. For example, if a post only addresses criminality, the subcategory topic331 should be coded as present (=1) while the general category topic330 should NOT be coded as present (=0) in addition to also covering criminality. However, if the post addresses criminality (topic331) plus other aspects of domestic policy (topic330), both categories should be coded as present. Subcategories that can be subsumed under general categories are indicated by the bold strokes in the table below which include all related categories.

Category	Description	Examples	Code
topic100	Polity: Institutional and normative aspects of politics (structures, laws, institutions)	political order (constitution, democracy, federalism), electoral system, institutions (legislative, executive, judicial), social order, relationship between state and churches, political order (changes in the state model),	0 1

		constitution, legislative power, judiciary, territorial integrity	
topic200	Politics: Processual aspects of politics	horse race coverage (polls, public opinion, election forecasts), legislative processes, parties' election campaigning, information on current or past poll numbers like popularity ratings for parties and top candidates, or public opinion polls	0 1
topic311	Taxes	e.g., levels of taxation and duties, both on salaries, properties, inheritance and goods such as sugar, alcohol and tobacco	0 1
topic313	Left-right economic issues	e.g., public vs private ownership and control of healthcare, education, social services, industry and businesses (e.g., mentions of "privatisering", "velferdsprofitører", "valgfrihet", "friskoler" etc.), public bureaucracy, use of capital gains from the oil sector	0 1
topic315	Rural policy	e.g., transferring resources and public enterprises to rural areas ("distriktsnorge"), politicians' and bureaucrats' understanding of rural Norway, references to "distriktene", "distriktsnorge", "desentralisering", "sentralisering", e.g. in relation with "kommunesammenslåing" and "fylkessammenslåing"	0 1
topic450	Agricultural policy	e.g., agriculture subsidies, fishing industries, wood industry	0 1
topic310	Economy and finance ATTENTION: (un)employment is coded as topic324.	e.g., the European crisis, austerity measures, trade agreements, protectionism, customs duties, taxes, tax system,	0 1

		national debt, budget, budgetary policy, agriculture and forestry, enterprise policy, consumer protection	
topic321	Health	health insurance, lack of personnel in the care sector, pandemic, the drug policy reform, dental health ATTENTION: COVID-19 related issues are coded under topic322.	0 1
topic322	COVID-19 related issues	e.g., pandemic crisis management, prioritizations of vaccinations, success of the vaccination campaign	0 1
topic323	Economic inequality	e.g., mentions of “sosial utjevning”, “sosial rettferdighet” or “omfordeling” in general or in relation to sickness and disability benefits, salary levels, progressive taxation of salaries, expanding upon public services instead of lowering taxes. Includes formulations such as «nå er det de fattiges tur», «de rikere bør ikke bli rikere», «forskjells- Norge», «forskjellene øker/har økt»	0 1
topic324	Employment	e.g., measures against unemployment, labor policy. Keywords: sykelønn, sykepenger, trygd, dagpenger, sysselsetting, arbeidsledighet, NAV, stønad ATTENTION: Pension related issues are coded under topic326	0 1
topic325	Policy for families and children	e.g., childcare, youth policy, policies such as child-care allowance (including “barnetrygd” and “kontantstøtte”), parental allowance, protection against dismissal for expectant	0 1

		mothers, child-care places, tax incentives for parents	
topic326	Politics for senior citizens, eldercare	e.g., health and welfare services for the elderly, pensions	0 1
topic327	Housing policy	e.g., affordable housing, government interference in the housing market, measures to stimulate development of new residences	0 1
topic320	Labor and social issues Other labor and social issues that are not covered by categories topic321 to topic327	e.g., welfare state in general	0 1
topic331	Criminality/crime rate in general	Other internal security issues such as crime, police operations, video surveillance (of criminal offenses), etc. are addressed. NOT: Crimes of asylum seekers, refugees, or other immigrants. These should be coded under topic341	0 1
topic332	Political radicalism/religious fanaticism	e.g., policy measures against right/left-wing extremism, Islamism, National Socialism, terrorism	0 1
topic333	Corruption	e.g., policy measures against corruption, corruption problem in general *Accusations of corruption against a public authority of the state should be classified into 'Type of attack'.	0 1
topic330	Domestic policy in general	e.g., «Domestic policy in this country has been a disaster in the last eight years.», legal policy	0 1

	Other issues related to domestic policy that are not covered by categories topic331 to topic333		
topic341	Crimes of asylum seekers, refugees, or other immigrants	e.g., criminality rate among migrants, crimes related to cultural background of migrants	0 1
topic340	Immigration and integration policy	e.g., language courses for foreigners, naturalization tests, refugee distribution	0 1
topic350	Transport and infrastructure policy	e.g., infrastructure for public transportation and/or motorways, electrical infrastructure	0 1
topic361	Environmental policy	e.g., climate change, safety to endangered species, policy to save forests, animal rights (including that of wolves and bears)	0 1
topic362	Energy policy	e.g., energy system transformation, electricity prices, mentions of oil and gas, framework conditions for the petroleum sector	0 1
topic371	Education and reseach policy	e.g., curriculum, school system, job training, universities, financial support for students, early childhood education, graduate and professional education, school size, class size, school/university choice, school/university privatization, tracking, teacher selection, teacher pay, teaching methods, curricular content, graduation requirements, school/university/research infrastructure, funding, and the values that schools and universities are expected to uphold and model	0 1
topic372	Sport policy	e.g., politics related to sport and leisure, state support for young athletes, state training programs, state-sponsored building of sports facilities, corona-	0 1

		related measures in sports stadiums	
topic440	Media policy and digitalization	e.g., journalistic values, state of public broadcasting, bias in news reporting, nationwide WiFi, 5G standard, Directive on Copyright in the Digital Single Market (aka EU Copyright Directive), online privacy	0 1
topic370	Cultural policy	e.g., regulations for cultural events in times of the covid pandemic; funding of theatres; public funding of movies	0 1
topic471	Gender policy	e.g., policies to combat gender violence (femicides, rapes, sexual abuse, mistreatment), equal pay, abortion, divorce	0 1
topic472	LGBTQ+ policy	e.g., policies to combat LGBTQ+ phobia and to promote equal rights (same-sex marriages, adoption of children, gender reassignment of transgender persons)	0 1
topic470	Civil rights	e.g., measures to reduce inequalities within a country, children rights (e.g., violence against children and adolescents), minorities/indigenous rights (e.g., protection of the culture, language, rights or identity of minorities and indigenous people)	0 1
topic380	Defence policy	e.g., national security, military, external security, policy of peace, policy of détente ATTENTION: Norway's role in war and military conflicts between other countries should be coded as topic410	0 1
topic410	War and military conflicts between countries	e.g., UN peacekeeping, operations of the national army abroad	0 1
topic420	EU/EEA	e.g., mentions of EU, EEA membership, issues or	0 1

		opportunities within the EEA agreement.	
topic460	Developmental policy	e.g., development aid	0 1
topic400	Foreign policy, international relations	e.g., relations with other states, relations with international organizations (e.g., UN, NATO, but not EU/EEA which should be coded as topic420), arms trades, sanctions, etc. as long as not covered by any of the other topic categories	0 1
topic300	Policy: Other topical aspects of politics/policy fields: Only posts on political topics that cannot be assigned to any of the listed characteristics	Only code if a post contains a topic which is not mentioned below or cannot be categorized in the above categories.	0 1
topic998	Other political topic	e.g., posts containing political information/content which isn't mentioning or referring to any political topic	0 1
topic999	Non-political topic	e.g., posts containing non-political information/content, weather forecast, sports, literature critique about a book, etc.	0 1

¹ DigiWorld project
<https://digidemo.ifkw.lmu.de/digiworld/>

