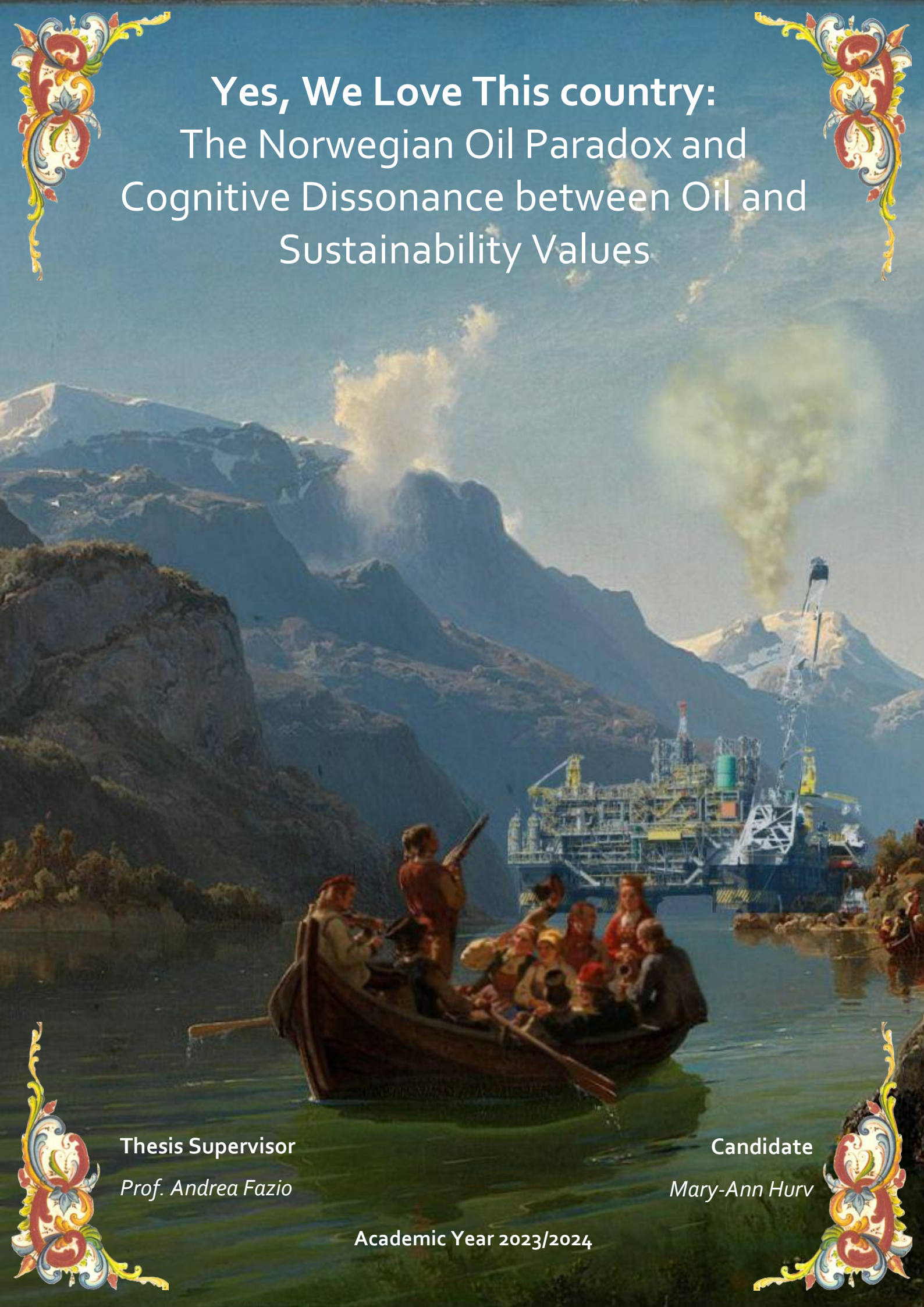
Yes, We Love This country:
The Norwegian Oil Paradox and Cognitive Dissonance between Oil and Sustainability Values



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Summary

This thesis delved examines cognitive dissonance within the Norwegian oil paradox, aiming to understand how Norwegians reconcile their beliefs and utilize common justifications to reduce potential dissonances. Contrary to expectations, participants did avoid contrary information, but engaged with it, leading to stronger reports of opposition or conflict. The level of cognitive dissonance varied based on the questions framing, and if they were in accordance with the participants' stance. Stronger oil or sustainability stances correlated with lower levels of dissonance in confidence levels. Justification methods such as separation of themes in oil and sustainability themes and justifying sustainability efforts were associated with decreased cognitive dissonance. Overall, the level of conflict between sustainability and oil values was consistent amongst all groups. Higher levels of cognitive dissonance would be reported between when the framing of the question would either resonate or contradict the participants' stance in the oil debate.

Table of Contents

1.0 Introduction

1.1 Phenomenon

"I was born dying."

- **Edvard Munch** on the despair he experienced in working-class Oslo. (1939)

For many years, the belief in finding oil and gas in the North Sea was insubstantial considering the dry deposits. Nevertheless, the enthusiasm grew with the discovery of petroleum in the Groningen gas field in the Netherlands in 1959 (Ministry of Energy and the Norwegian Offshore. Directorate, 2024). It was the day before Christmas in 1969 that Philips Petroleum Company discovered oil in the Ekofisk field and would transition Norway from an economically modest agriculture to one of the wealthiest nations in the world (Norwegian Goverment, 2021). This extreme wealth carried significant uncertainty due to its scarcity and in 1990, the Norwegian Parliament consequently created The Government Pension Fund Global. The objective was to invest the surplus from the oil revenue to sustain the Norwegian economy for both present and future generations, acknowledging the depletion potential. As of March 2024, the fund's market value is approximately 17 trillion Norwegian Kroner, and the North Sea remains a forcible petroleum mine that continues to make Norway wealthier (Norges Bank Investement Managment, 2019).

Over recent years, the future of oil extraction has been subject to ethical and practical considerations as a source of the Norwegian economy. The common vindication is its immense contribution to the welfare state, where its social-democratic model ensures equal opportunity and social security for all citizens (Royal Norwegian Ministry of Labour and Social Inclusion, 2006). Accordingly, Norwegian oil companies and politicians are providing reassurances through various rationales and explanations, prominently emphasizing extracting the greenest oil in the world. Moreover, the imperativeness of maintaining a reliable energy supply to 170 million people (Equinor, 2024) and around 25% of the EU and The United Kingdom (Norsk Petroleum, 2024). Additionally, the prolongation of oil extraction is deemed a financial muscle to the energy transition of oil companies.

The primary debate is the detrimental effects of oil and gas pollution, particularly its disruption of marine ecosystems through oil leaks and emissions of carbon dioxide during operations (WWF, 2024). Paradoxically, Norway is recognized as a pioneer in renewable energy, green technologies and sustainable resource handling, with the carbon emissions of oil being the fortification of ranking highest (International Trade Administration, 2024). Through government nudges and incentives, sustainable behaviour is also deeply engraved within Norwegian values. For instance, implementing mandatory household waste recycling and creating a bottle deposit return scheme that refunds consumers in exchange for bottles (Tomra, 2022). As of 2024, Norway ranked 7th amongst the UN Member States in their progress toward achieving 17 Sustainable Development Goals (Sustainable Development Report, 2023).

The paradox between environmental sustainability and economic prosperity may present a potential *cognitive dissonance* challenge amongst Norwegian citizens, where there is a psychological conflict of contrary beliefs and attitudes (Merriam-Webster, 2024). This was particularly evident when the cost of living surged in Norway and Europe following the Russia-Ukraine conflict (European Council, 2024). Ukraine served as a vital transit route for natural gases, and its supply disruption affected heating, electricity and gas prices. This created a 0.2% increase in support from the oil fund to the state budget to fund housing subsidies, welfare and energy support (Johnsen, 2022). The predicament has created constraints on Norwegians to maintain or transition to sustainable living as they naturally prioritize more important living expenses (Brand, 2023). For instance, the exorbitant gas prices create a bigger gap to invest in electric vehicles as the transition to sustainable products is perceived as costly. In January 2024, 92.1% of private vehicles sold in Norway were electric (Wollaston, 2024), illustrating a disproportionate representation of demographics with distinct priorities and greater purchasing power in the energy transition.

With the oil fund and high tax impositions, the Norwegian welfare system provides a comprehensive security net, including universal healthcare and tuition-free education often perceived as standard entitlements. It is plausible to assume that in a specific socio-economic context like Norway, the true complexities of oil drilling are tacit knowledge. Continuous with a focus on sustainability, it represents a paradigm, especially for generations born after the fund's establishment. Presumably, the strong financial wealth from the oil revenues has facilitated Norway’s commitment to sustainability. Prominently, the recent rise in the cost of

living has naturally shifted the priority away from sustainability with a heightened dependency on the welfare state. The interest of the study therefore aims to understand the cognitive dissonance of the integrated aspiration for sustainability, while navigating and relying on a conflicting implicit unsustainable welfare state. The research question therefore states:

"Do Norwegians suffer from cognitive dissonance in the conflict between their oil and sustainability values?"

Explained by the complex nature of the Norwegian paradox, it might be hard to replicate or apply the findings in other situations, especially in managerial implications. Nonetheless, this thesis aims to add a theoretical contribution to understanding how cognitive dissonance might operate in situations where the cognitions are deeply rooted, and strong opposing values exist cohesively.

2.0 Background

The purpose of this passage is to create a foundational understanding of how dominant the Norwegian Oil Welfare state is and how integrated it is in the Norwegian culture to create a hypothesis on how they might rationalize their cognitive dissonance in their pre-beliefs. This is also to create an understanding that the cognitive dissonance is more than superficial and has deeper roots in how the welfare state was made and will therefore be in a lot of the justifications.

2.1 The Norwegian Oil Welfare State

"No one will get cake until everyone has had bread."

- **Einar Gerhardsen** and the Labour Party's welfare policy message on how the benefits should be distributed fairly. (1962)

In the academic literature on the Norwegian Welfare state, the country is exemplary in the case of escaping the 'Resource Curse[1]' "Paradox of Plenty" and 'Dutch Disease[2]' (Engen, Langhelle, & Bratvold, 2012) (Juan & Wirth, 2016) (Bhopal, 2023) (Larsen, 2005). In response to the petroleum discoveries on Norwegian territory and heightened foreign interest, Prime Minister Einar Gerhardsen declared jurisdiction over the Norwegian continental shelf (Norges Bank Investement Managment, 2019), strategically pursuing public ownership despite initial constraints in exploiting these discoveries (Øvald, Tranøy, & Raknes, 2019). This establishment formed the foundation of a robust oil policy, where strong state control from 'Stortinget' (Norwegian Parliament) would guarantee responsible and sustainable management of their oil and gas resources.

The formulation of the 'Ten Oil Commandments' accentuates the government's commitment to serve the collective interest of the Norwegian population as a new coming oil-nation (Bhopal, 2023) (Holden, 2013) (Øvald, Tranøy, & Raknes, 2019). A fundamental policy was

[1] **Resource Curse:** *"Paradoxical situation in which a country underperforms economically, despite being home to valuable natural resources"* (Fernando, 2022).
[2] **Dutch Disease:** *"The negative consequences that can arise from a spike in the value of a nation's currency"* (Chen, 2021).

the creation of a state-owned oil company called Statoil (translated as ´State Oil´) with the principle being that it would hold a 50 percent ownership stake in each production license (Norsk Petroleum, 2024). Profits generated by Statoil along with those of subsequent oil companies, are channeled back into the welfare state, ultimately benefiting the Norwegian society (Ryggvik, 2010) (Juan & Wirth, 2016) (Austvik, 2014).

Subsequently, in White Paper[3] No.25, "The Role of Petroleum Activity in Norwegian Society (1973-1974), the government outlined objectives for utilizing petroleum revenues to serve the Norwegian society (Øvald, Tranøy, & Raknes, 2019) (Storting, 2010), stating:

"The petroleum finds in the North Sea means that as a nation we shall become richer. (…) The guidelines which are decided for the petroleum activities and for the use of the revenues must, therefore, be a part of a planned restructuration of Norwegian society. (….) The economic possibilities must be used to create greater equality in the standard of living (…) prevent social problems (…). The welfare society must be further developed (…) investment in the social welfare sector, education and communications (…) job opportunities must be created (..) Norway must show responsibility for the poorer countries of the world. (…..) The petroleum operations are expected to employ about 15,000 persons in 1974."

The Government Pension Fund Global was founded in 1990 to safeguard and stimulate the economy while financing the welfare state simultaneously (Øvald, Tranøy, & Raknes, 2019, s. 245) (Austvik, 2014). The fund's establishment also ensured that annual public budgets were no longer directly influenced by fluctuations in oil and gas revenues (Austvik, 2014). (write more)

Norway is, in essence, a part of the 'Nordic' welfare model where the principle is universal social rights, equality and a strong government role, despite which social class one is a part of (Kildal & Kuhnle, 2005) (Pedersen & Kuhnle, 2017). The Norwegian Oil and Gas Association praised:

[3] **White paper:** *«An informational document issued by a company or not-for-profit organisation to promote or highlight the features of a solution, product, or service that it offers or plans to offer"* (Hayes, 2023).

"It is not just oil and gas that are extracted from the Norwegian seabed. It is health care, education, pensions, childcare and jobs. One-fifth of the government's revenue comes from oil and gas. What are the consequences for society and us as individuals if we don't continue to exploit these resources?" (NOROG, 2017) (Ihlen, 2009).

Radical libertarians have argued that the social security system that the Norwegian welfare system provides for their citizens might threaten their self-esteem by removing an individual's responsibility for their own lives (Lange, 2020).

2.2 The Paradox of being a sustainable leader

"The money in the bank won't matter if the Gulf Stream changes direction."

- **Thorbjørn Bernsten,** *Use the oil fund for climate measures*, Halden Arbeiderblad (21.12.1995).

The Norwegian oil fund operates on two premises: that the oil wealth should benefit future generations and that investments made should avoid unethical or harmful social and environmental practices (Richardson, 2011). This approach aligns with the 4th policy in the 'Ten Oil Commandments' which state *"The development of an oil industry must be founded on necessary considerations for (...) nature conservation and environmental protection"* (Equinor, 2024).

Previous research on the Norwegian oil paradox has primarily involved secondary data analysis, focusing on the framing and policies contributing to this dilemma. Commonly studied is how Norway aims to maintain its status as a world leader in environmental politics but is experiencing tension between climate change targets, biodiversity concerns and petroleum production (Engen, Langhelle, & Bratvold, 2012). This tension was defined by (LeMenager, 2014) as "Petro-melancholia", explaining the state of the unresolved grieving of a life beyond oil and gas (Grau, 2023). Philosophers Arne Johan Vetlesen and theologian Jan-Olav Henriksen quote:

"*Norwegian identity and self-image are strongly linked to and formed by the oil and gas industry. This narrative is used to its maximum potential by the supporters of the oil and gas industry in politics and commerce. Thus to propose and push for a swift transition away from Norwegian fossil fuel production is portrayed as biting the hand that feeds you, and disrespecting the sacrifices and work of those who have been pioneers and created the great wealth young people and environmentalists take for granted*" (Vetlesen & Henriksen, 2015, s. 136) (Grau, 2023).

The debate encompasses that the oil and environmental debate should not be addressed separately but in cohesion (Lahn, 2019) (Hopwood, Mellor, & O'Brien, 2005). In essence, the EU's market-based climate policies and regulatory frameworks have enabled Norway to maintain its petroleum activities while adhering to climate commitments, leading to a separation of discussion around petroleum and climate policies in Norwegian politics (Bang & Lahn, 2019) (Eckersley, 2015).

(Eckersley, 2015) found that the term 'pioneer' is repeatedly used when addressing Norway as a climate leader. Often referenced is the word 'dugnad', which means working together for the common good. However, the Norwegian Exceptionalism discourse is more dominant. (Lahn, 2019) found that Norwegian political parties build their position on oil using three common aspects: welfare from oil, territorial emissions, and clean oil. Commonly when addressing the oil wealth fund, agents use adjectives like 'future' or 'future generations' (Bhopal, 2023). The author argues that the government's definition of the future lies in financial security rather than focusing on the nation's health in terms of sustainability. In the discourse of debating the future of oil, it either formulated the importance of oil to Norway's economic welfare or societal well-being, or, again, Norwegian 'exceptionalism' in managing their oil wealth (Lund, 2022) (Krange, Kaltenbord, & Hultman, 2018) found that when addressing the problem of sustainability in Norwegian newspapers, it would be in combination with a technical solution to the oil discourse.

Other literature on the Norwegian Paradox has been what the definition of being sustainable in a contradictory sector can be (Schoyen & Takle, 2022). (Sæther, 2017) suggests that the clean oil narrative might come from the Norwegian petroleum industry's tactic to position itself as environmentally responsible in line with the concerns of the future of oil and gas. (Ihlen, 2009) conversely argued that the Norwegian petroleum industry uses four rhetorical

operations to resolve the paradox: cutting emissions, long-term management, energy demand and clean oil.

(Rabbi, 2023) found that in Aker Solutions and Norsk Hydros' sustainability claims, clean oil would be a common justification. They further argue that Norwegian oil companies approach sustainability with the status quo and minor adjustments to the current situation. (Crichton, et al., 2024) found that when analyzing the employees within Equinor, they were driven by the notion of a cultural commitment to the environment. This is following (Ihlen, 2009) the argument that the certainty of transparent answers might not be high due to company ethos. However, Norway has a strong national culture of sustainability, which might still be enforced in these answers and therefore better embracement of the paradox (Crichton, et al., 2024).

While employees in oil companies offer valuable insights into the paradox, the respective study does not address the thesis theme of cognitive dissonance, but rather the company's operational framework towards sustainability. This accentuates a research gap in understanding the paradox within their personal values oil and sustainability values. Furthermore, it is fair to believe that those working in an oil company, in a sense, have 'chosen' a side, potentially leading to weaker signs of conflicting thought. Their responses might also be influenced by situational factors and a higher level of education in the debate. Therefore, this thesis aims to delve into a more nuanced sample that aims to understand how individuals reconcile their beliefs and actions in the oil and sustainability paradox.

3.0 Conceptual framework

The purpose of this passage is to understand what literature has already been done on the common themes of the master thesis topic. In this way, the hypothesis can be linked to the background information on the Norwegian culture and prior research on sustainability in Norway and cognitive dissonance in sustainability to create a comprehensive understanding.

3.1 Sustainability in Norway

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

- **Gro Harlem Brundtland**, *Our Common Future* (1987)

Various assessments have been conducted on the environmental attitudes in Norway, historically in conjunction with the oil industry aforementioned. Notably, the reconciliation of sustainability and oil is a common voluntary response in these studies, reflecting the unique socio-political landscape of Norway and the highly relevant 'oil debate'[4]. While this body of literature provides a foundational theoretical framework for potential justifications for the reconciliation of their values, there remains a gap in understanding the psychological aspect of cognitive dissonance when these values are challenged, which is what this thesis wishes to address.

(Gullberg & Aardal, 2018) argued that the fact that Norwegians might not be able to take in the realities of climate change is because of the conflict between oil and sustainability. (Norgaard, 2006) specifically emphasized the significant fact that in Norway, economic prosperity is tied to oil, leading to a conflict of interest between economic growth and environmental concerns. Despite reflections on this issue, an explicit study has not yet tested these conditions. (Witoszek, 2017) further illustrated this conflict by showing the political discourse in Norway with a focus on environmental protection and climate change, while

4

social fairness and economic welfare are less in the news, despite their importance to consumers.

(PERITIA, 2022) found that 1 in 4 Norwegians believed that human activities are not linked to climate change which is reflective of (Aasen, Klemetsen, & Vatn, 2022) finding that 8 out of 10 Norwegians believe that climate change is happening. (Skarstein, 2020) found that there was stronger climate skepticism in pre-service science teachers with strong ties to the petroleum industry. In a broader context, (Skauge, Kunst, Power, & Haugestad, 2021) found that 42% of their respondent were against Norwegians reducing oil production. (Gullberg & Aardal, 2018) suggested that Norwegians' environmental values and attitudes are strongly correlated to the food and waste domain, while the correlation is weaker towards energy and transport. Peculiarly, they found that these efforts are motivated by a preference to conform to the Norwegian legal, social and moral norms. (Norgaard, 2006) specifically mentions how despite Norwegians being well-informed, the cultural norms and narratives that downplay the urgency of climate change because of economic prosperity tied to oil.

Several studies have stressed the demographic differences in sustainability beliefs in Norway. In the Norwegian qualifications' framework for lifelong learning, children should gain an early understanding of sustainable development and nature conservation (Melis, Wold, Bjørgen, & Moe, 2020). In the same study, they found that the most common issues Norwegian kindergarten kids were aware of were recycling and the negative consequences of car pollution and deforestation. (Witoszek, 2017) found that in Norwegian textbooks, environmental challenges are promoted, but they do not seriously problem-frame the Norwegian oil-based wealth.; hypothesizing that there is a cognitive dualism between at-home sustainable values of nature and outdoor life and accepting the basis of Norway's success in their oil adventure.

(Rødeseike, 2017) (Aasen, Klemetsen, & Vatn, 2022) found that the younger demographic tends to be against oil and more for the environment. Paradoxically in a study done by (Skauge, Kunst, Power, & Haugestad, 2021), they hypothesize that younger people tended to 'scapegoat' their inaction by blaming the generation before them, the politicians and the capitalistic system instead of blaming individuals for environmental concerns. In line with this thesis, we can see signs of cognitive dissonance where the participants felt responsible

for climate change because they reaped the benefits of living in a society that took part in causing the crisis (Skauge, Kunst, Power, & Haugestad, 2021).

Women show higher concerns for environmental issues and express a stronger belief in individual moral obligations (Skarstein, 2020). (Skauge, Kunst, Power, & Haugestad, 2021) specifically found that it was liberal females with a high socio-economic background. (Skarstein, 2020) found that even if individuals were highly educated, but were involved in the industry, were less convinced about the role of humans in causing climate change. White conservative males are more likely to refute anthropogenic climate change (Krange, Kaltenbord, & Hultman, 2018). The author expressed them as 'cool dudes' with a certain attitude complex in resistance to pro-environmental behaviour. (Gullberg & Aardal, 2018) found that environmentalists have leftist and libertarian values, while voters favouring economic growth have rightist and authoritarian values.

(Krange, Kaltenbord, & Hultman, 2018) means that this can come from the two ideas presented in Norwegian society: protection of the oil industry by issuing new rights to drill and the rise of right-wing nationalism – simultaneously promising to continue drilling for oil and gas as the economic basis for welfare and to ensure a strict immigration policy Norwegian parties oil. (Norgaard, 2006) argued that nonresponse to climate change is a deliberate choice influenced by short-term economic benefits and a desire to avoid emotional psychological discomfort associated with acknowledging one's contribution to environmental problems. This is in line with what the definition of cognitive dissonance is, and what this thesis will delve deeper into.

3.2 Cognitive dissonance in sustainability

"Wisdom is tolerance of cognitive dissonance."

- **Robert Thurman**

A similar analysis has been conducted on the topic of this thesis, analyzing Norway's environmental policies and discourse to portray the nation as a cognitive dissonance leader (Boasson & Lahn, 2017). However, there is a gap in the literature regarding a study on the

consumers' perspective and the effectiveness of these policies in addressing psychological aspects of cognitive dissonance among individuals.

Studies have been done on important actors in sustainability and the cognitive dissonance they experience in governing environmental issues. (Sullivan, 2018) explored how researchers might experience cognitive dissonance when their ideology is contradictory to sustainability solutions, suggesting that if presented with contradictory evidence, one might suppress this information. (Meuleman, 2012) further studied politicians governing sustainability policies, arguing that these policies might be normative to the time of the establishment or aligned with the politicians' own beliefs and therefore inheriting contradictions in practicing sustainability. (Marhold, 2018) even argued that the EU's strategy climate strategy for reducing carbon emissions by 2030 creates cognitive dissonance due to the heavy dependency on fossil fuels in Europe. These findings underscore the nuanced challenges even key stakeholders face in navigating cognitive dissonance in sustainability efforts.

(Gaspar, et al., 2016) and (Edenbrandt, Lagerkvist, & Nordström , 2021) found that information avoidance is the common tactic individuals use when met with contradictory sustainable facts of their beliefs and attitudes. Even when exposed to information they usually avoid, they do not fully absorb or process it in depth due to tending their cognitive dissonance. (Rothgerber, 2020) argued that this is likely because individuals tend to avoid thinking about the moral complexity of their inaction in sustainability to avoid cognitive dissonance. When encountering situations that trigger their morals, individuals will engage in motivated reasoning to align their perceptions with their preexisting beliefs and attitudes (Tanford & Montgomery, 2015) (Rothgerber, 2020) (Seyr, Gachter, Mohr, Georgi, & Lu, 2023) (Huijts, Vries, & Molin, 2019). (Voisin, et al., 2020) specifically found that when their environmental attitudes were challenged, denial of responsibility was common in reducing their cognitive dissonance. (Thøgersen, 2004) argued that when an individual perceives a higher control over a sustainability decision, their self-concept feels endangered, leading to higher levels of cognitive dissonance. Moreover, individuals with a higher self-affirmation were less likely to deny their responsibility due to confidence in their choice, so-called 'hypocrites' (Taylor, Lamm, & Lundy, 2017).

(McDonald, Oates, Thyne, Timmis, & Carlile, 2015) found that denial of responsibility in flying behaviour is other rationalised by social norms, supressing their denial of control. (Upham & Schrems, 2020) furthermore studied scientist in sustainability and the consequences on air travel, arguing that despite having more knowledge of the true consequences, they experience cognitive dissonacne due to conflicting beliefs and the social expecations within academia. (Bouwman, Bilderdijk, Onwezen, & Taufik, 2022) (Edenbrandt, Lagerkvist, & Nordström , 2021) and (Séré de Lanauze & Siadou-Martin, 2019) discovered that when exposed to contradictory information, it stimulated moral feelings and psychological discomfort, motivating behaviour change. (Dowsett, Semmler, Bray, Ankeny, & Chur-Hansen, 2018) (Gosnell, 2018) in contrast found that there is a reluctance to change sustainable behaviours, even when challenges as morally questionable. Simultaneously, even if there was a behaviour change, it did not necessarily come from harming the animal.

4.0 Hypothesis

The hypothesis section aims to translate the insights from the theoretical framework and literature review. As elucidated earlier, the inception of Norwegian environmental attitudes has been studied and the central theme of this thesis has been discussed briefly.

Drawing on the findings of studies such as (Gullberg & Aardal, 2018), (Norgaard, 2006), (Skarstein, 2020) (Rødeseike, 2017) (Skauge, Kunst, Power, & Haugestad, 2021) (Aasen, Klemetsen, & Vatn, 2022) (Boasson & Lahn, 2017) which briefly touch upon the challenge between oil and sustainability values in Norwegians. Suggestive is that the oil and sustainability debate in Norway is not dominantly in cohesion (Lahn, 2019) (Hopwood, Mellor, & O'Brien, 2005), suggesting that these values are not necessarily challenged against each other. This study explicitly explores the psychological conflict of cognitive dissonance when these values are pitted against each other. Thus, the research question is formulated as follows:

RQ_1: *"Do Norwegians suffer from cognitive dissonance in the conflict between their oil and sustainability values?"*

Proceeding on (Skauge, Kunst, Power, & Haugestad, 2021) study on motivations for climate activism in young Norwegians, the latter respondents were oil protestors with candidly strong

sustainability values. Interestingly, the participants felt conflicted in opposing oil as they reaped the benefits of the oil welfare state. Alternatively, (Rabbi, 2023) (Crichton, et al., 2024) study on sustainability in oil companies showed status quo and personal sustainability values. Conforming to (Upham & Schrems, 2020), despite individuals knowing the consequences of oil drilling, they might experience cognitive dissonance, suggesting that if presented with contradictory evidence one might suppress this information (Sullivan, 2018) (Bouwman, Bilderdijk, Onwezen, & Taufik, 2022) (Edenbrandt, Lagerkvist, & Nordström , 2021) (Séré de Lanauze & Siadou-Martin, 2019), due to their conflicting sustainability beliefs and social expectations within their field. This will most likely apply to a broader context, as showed in (Skauge, Kunst, Power, & Haugestad, 2021) found that 42% of their respondent were against Norwegians reducing oil production. Moreover, definite is the fact on how important the oil welfare state is to Norwegians, more well defined (Vetlesen & Henriksen, 2015) as "(…) biting the hands that feed you", suggesting that holding conflicting sustainability values challenges this . Suggestive is also that one might experience cognitive dissonance in Norway due to the tension by (LeMenager, 2014) as "Petro-melancholia", explaining the state of the unresolved grieving of a life beyond oil and gas (Grau, 2023). The hypothesis is as follows:

H1: *Individuals who engage in cognitive dissonance reduction strategies, such as information avoidance or motivated reasoning, will exhibit lower levels of psychological discomfort when faced with conflicting information about oil and sustainability values.*

Based on this, the theoretical framework reads:

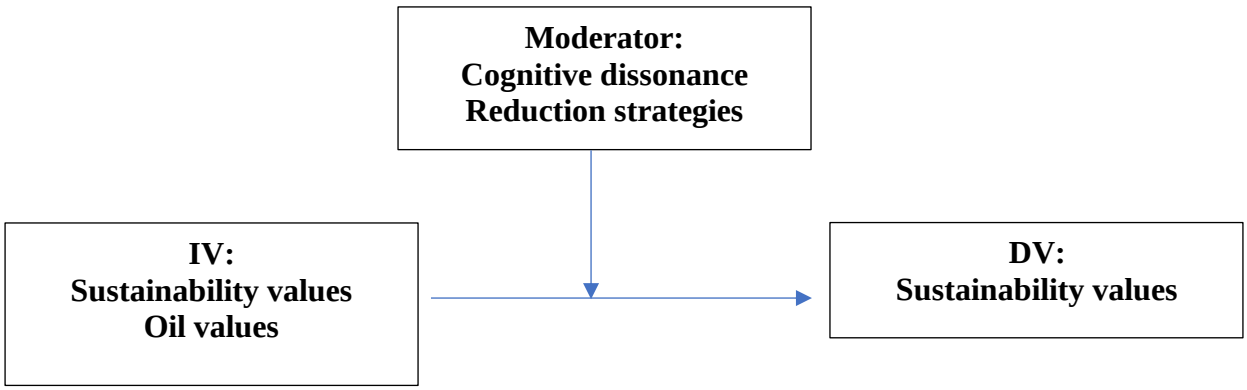

Figure 1: Conceptual framework

5.0 Methodology

The problem with measuring cognitive dissonance in study designs is the bias towards socially desirable responses (Eßer, Flörchinger, Frondel, & Sommer, 2024). Optimistically, it should be manageable to measure cognitive dissonance to some extent through an anonymous survey in this thesis. It is pertinent to note that there is no 'template' for measuring cognitive dissonance accurately and that there is still work needed in this field (Edenbrandt, Lagerkvist, & Nordström , 2021). Furthermore, (Thøgersen, 2004) argues that when measuring cognitive dissonance, other personal moderators, such as the individual's perceivance of certain behaviors and personal circumstances, might cause errors in measurement. Therefore, it is important to note that the survey applied to this thesis might not accurately measure cognitive dissonance but will strive diligently to apply prior knowledge to come close to an analytic conclusion.

The study method chosen was a mixed approach of qualitative and quantitative. This approach was chosen due to the design of the study and the ability to collect the greatest number of respondents. Furthermore, the survey was conducted in Norwegian to limit the sample to Norwegians and to create a more understandable survey that would yield more comprehensive answers. The sample consisted of n= 63 Norwegian participants recruited through social media and word of mouth. It consisted of 32 men and 28 females. The survey flow consisted of Block 1 with Q1, Q2 and Q3 indicating the initial positioning in their values, followed by Block 2 with a randomized statement that was either in defense or offence to the continuation of the oil welfare state. Following was Block 3 with Q4 and Q5 with the first measure of cognitive dissonance, followed by other measures alongside general questions. Lastly was demographics.

Before starting any analysis I cleaned the data set to clearly define how the variables would be measured to set some limits and take away any complications. Initially, the mean of Q1, Q2, and Q3 was considered to be a "Oil Score", where it would signify how the respondents fell in a scale of 5. This approach seemed the most feasible to measure against other variables. This had to be reconsidered because the score wouldn't be representative in where they would fall in the debate which Q1 addressed, simoultanesly, for instance respondents that support the oil industry can also have high sustainability values due to the context of Norway. Furthermore, since it's a nominal variable, dummy variables were created for easier

interpretation in the tables (I am unsure and I don't have an opinion were merged due to low frequency and similarity, and were also chosen as a reference category in the regression). Although some questions directly adressed the reconciliation between values, interaction terms were made additionally to see how their stance in the oil debate and sustainability value might affirmly affect the cognitive dissonance. The interaction terms were coded with the dummy variables accordingly: (I support the oil industry * sustainability values), (I support sustainability * importance of oil to the welfare state), (I support a balanced approach *sustainability value* importance of oil to the welfare state)

Consistent with the "oil score", a cognitive dissonance score was not created. Statistically, the Cronbach alpha was not significant which was expected because the questions don't measure the same (see Appendix 2). Furthermore, the cognitive dissonance indicators didn't necessarily capture the same scale because they are different variations of how cognitive dissonance can appear. Therefore, the cognitive dissonance questions (Q4, Q5, Q7, Q11, Q12) were reverse recoded to where the answer options that fit respectively to a cognitive dissonance indicator would get the highest value of 5 and 1 for lower significance.

Q4 and Q5 were analyzed in a separate analysis of a One-Way ANOVA explained by the questions directly addressing the statement provided. To make the analysis easier, two separate spreadsheets were created by a filter based on the provided randomized statement.

Q7, Q11 and Q12 were then analyzed as a dependent variable with the respondents stance as a dummy variable in Q1 and the interaction terms as independent variables. Furthermore, Q6, Q8 and Q13 was also added to the regression analysis to see how affected lower cognitive dissonance scores. It is noticeable that with a limited sample the results may not be feasible, but was the most significtant way to test these interactions. Therefore an ANOVA analysis was done in the same manner without the interaction terms too read the mean and analyse it alongside the regression analysis.

6.0 Results

6.1: One-Way ANOVA results on Q4 and Q5

See Appendix 2.0

Defensive statement

For the agreement of the statement (5 = Totally Agree, 1 = Totally disagree), the significance level was *0.035 < 0.05*, indicating a significant difference between the groups' agreement with the respective statement. The mean overall was *3.9* whilst the descending score was 4.5 = oil supporters, 3.52 = balanced approach, 3.5 = sustainability supporters, and 3.0 = no opinion. In conflict with the respective theme (5 = Always, 1= Never), the significance level was 0.059 > 0.05, indicating no significant difference between the groups' conflict with the respective statement. The mean overall was 2.9 whilst the descending score was 3.5 = balanced approach, 3.0 = sustainability supporters, no opinion and 2.5 = oil supporters.

Offence statement

For the agreement of the statement (5 = Totally Agree, 1 = Totally disagree), the significance level was 0.018 < 0.05, indicating a significant difference between the groups' agreement with the respective agreement. The mean overall was 3.2 whilst the descending score was 4.25 (sustainability supporters), 4.0 (no opinion), 3.2 (balanced approach) and 2.5 (oil supporters). In conflict with the respective statement (5 = Always, 1 = Never), the significance level was 0.450 > 0.05, indicating no significant difference between the group's conflict with the respective statement. The mean overall was 3.3 whilst the descending score was 3.75 (oil supporters), 3.43 (balanced approach) and 3.0 (no opinion, sustainability supporters)

6.2 One-Way ANOVA and Linear Regression results on Q7, Q11 and Q12

See Appendix 3.2

Q7: Confidence in oil and environmental values

(5 = Totally disagree - 1 = Totally Agree)

In the ANOVA model, the significance level was 0.001 > 0.05, showing a significant difference in CD between the groups. The mean score in the group was 3.15. Furthermore,

the CD descending was 3.5 (no opinion), 3.0 (balanced approach), 2.0 (sustainability supporters) and 1.35 (oil supporters).

The linear regression model showed a mediocre R-squared value of 0.468. The model suggests that a stronger stance on oil (b = -1.681) is associated with higher confidence in opinion and therefore lower CD, but not statistically significant where sig = 0.069 > 0.05, equal is having a strong sustainable stance (b = -0.237) on lower CD but is also not statistically significant (0.927 > 0.05). The interaction terms despite level, showed no significant impact on beliefs, indicating that the participant's initial stance might be stronger and therefore diffusing CD. If the participants believed that oil and sustainability should be separate debates in Q6, it was associated with higher confidence and therefore lower CD (b = - 0.161), although not statistically significant (sig. = 0.270 > 0.05). Agreeing with Q8 that the participant's contradictory views do not reflect the other value is associated with lower confidence and, therefore higher cognitive dissonance (b = 0.111), although not statistically significant (sig. = 0.352 > 0.05). If the participants believed their sustainability efforts justified their support for the oil welfare state (Q13), it is associated with higher confidence and therefore lower cognitive dissonance (b = 0.076), although not statistically significant (sig. = 0.648)

Q11: Confliction in oil and environmental values

(5 = Always - 1 = Never)

In the ANOVA model, the significance level was 0.433 > 0.05, showing that there is no significant difference in CD between the groups. The CD descending was 3.25 (no opinion), 3.24 (balanced approach), 3.2 (oil supporters) and 2.5 (sustainability supporters).

The linear regression model showed a low R-squared value of 0.200. The model suggests that a stronger stance on oil (b = -1.981) is associated with experiencing conflictions in opinion and therefore a higher CD, which was statistically significant (sig. = 0.038 < 0.05), equal is having a strong sustainable stance (b = -4.078) on higher CD but is not statistically significant (0.131 > 0.05). Supporting a balanced approach did not significantly impact the CD (b = -0.260, sig. = 0.766). With the interaction terms, having a strong oil stance and high sustainability values increase the CD (b= 0.479, sig. = 0.032 < 0.05). Accordingly, is having a strong sustainability stance (b = 0.792), although not statistically significant (sig. 0.187 >

0.05). Having a balanced approach stance showed no significant impact on the strength of their CD (b = - 0.004, sig. = 0.922). If the participants believed that oil and sustainability should be separate debates in Q6, it was associated with higher confliction and therefore higher CD (b = 0.293), although not statistically significant (sig. = 0.055 > 0.05). Agreeing with Q8 that the participant's contradictory views do not reflect the other value is associated with feeling confliction and, therefore higher cognitive dissonance (b = 0.132), although not statistically significant (sig. = 0.285 > 0.05). If the participants believed their sustainability efforts justified their support for the oil welfare state (Q13), it is associated with lower confliction and therefore lower CD (b = -0.325), although not statistically significant (sig. = 0.063)

Q12: Support for sustainability with support from the welfare state

(5 = Very challenging – 1 = Not Challenging)

In the ANOVA model, the significance level was 0.155 > 0.05, showing that there is no significant difference in CD between the groups. The CD descending was 3.03 (balanced approach), 3.0 (no opinion), 2.35 (oil supporters) and 2.3 (sustainability supporters).

The linear regression model showed a low R-squared value of 0.277. The model suggests that a stronger stance on oil (b = -1.362) is lower conflict in supporting both in opinion and therefore a lower CD, although not statistically significant (sig. = 0.184 > 0.05). Having a strong stance on sustainability is associated with perceiving it as more challenging to support sustainability while supporting the oil welfare state, (b = -7.805) which was statistically significant (sig. = 0.009 < 0.05). Having a balanced approach stance did not statistically show an impact on CD (b = 0.025, sig. = 0.979). Furthermore, having strong oil values while simultaneously holding strong oil values does not significantly impact the CD (b = 0.1, sig = 0.672 > 0.05). Furthermore, having a strong sustainability value while holding strong oil welfare state values increased the CD (b = 1.664, sig = 0.012 < 0.05), whilst the balanced approach stance had no signification interaction effect (b = -0.028, sig. = 0.556 > 0.05).
If the participants believed that oil and sustainability should be separate debates in Q6, it was associated with higher confliction and therefore higher CD (b = 0.406), which was statistically significant (sig. = 0.015 < 0.05). Agreeing with Q8 that the participant's contradictory views do not reflect the other value it did not show any statistical agreement to showing support for both values (b = 0.139, sig. = 0.335 > 0.05). If the participants believed

their sustainability efforts justified their support for the oil welfare state (Q13), it is associated with it being less challenging to support both values CD (b = -0.514), which was statistically significant (sig. = 0.008 < 0.05).

7.0 Discussion

Contrary to previous studies that have discussed information avoidance as a common strategy to mitigate cognitive dissonance, (Gaspar, et al., 2016) (Edenbrandt, Lagerkvist, & Nordström , 2021) (Rothgerber, 2020), the participants notably articulated disagreement and reported limited conflict with the topic. As anticipated, the participants' initial stance in Q1 would strongly correlate to the statement that resonated with their values. Nevertheless, the reported agreement with the defensive statement was evident across groups. This suggests that oil is a widespread recognition despite values and is strongly linked to the Norwegian identity (Vetlesen & Henriksen, 2015, s. 136) (Grau, 2023). It is observable that the balanced approach group showed higher infliction to the statement, which might indicate that they feel conflicted by the statement being formulated in a singular context without including sustainability as a factor which is also a widespread recognition for Norwegians.

In the case of oil supporters, the heightened conflict observed in response to the offence statement may be attributed to its potentially more emotionally resonant nature for these participants, consequently triggering cognitive dissonance. This aligns with the notion that exposure to contradictory information tends to evoke stronger moral feelings (Edenbrandt, Lagerkvist, & Nordström , 2021) (Séré de Lanauze & Siadou-Martin, 2019). Furthermore, sustainability support did rank conflicting feelings to the offence statement, which might have been triggered by Q3 asking about the importance of oil to the welfare state.

When asked if they were confident in their oil and sustainability values, participants who aligned themselves in Q1, showed lower CD most likely explained by the widespread sustainable and oil identity in Norway. Contrary to participants with no opinion and a balanced approach who reported less confidence and therefore a higher dissonance. This is most likely because these groups don't hold a cognition higher, explained by the insignificance of their interaction term and therefore experience dissonance in their values. Furthermore, if they believed that the debate should be separate, they scored lower on CD which is consistent with (Tanford & Montgomery, 2015) (Rothgerber, 2020) (Seyr, Gachter, Mohr, Georgi, & Lu, 2023) (Huijts, Vries, & Molin, 2019) showing that participants will

engage in moral reasoning to potentially lower cognitive dissonancewhat. Furthermore, if participants reflected that their values did not reflect each other, it showcased lower confidence and therefore higher cognitive dissonance. This is in line with (Taylor, Lamm, & Lundy, 2017) where higher self-affirmation showed less denial of responsibility.

When asked if there was a conflict between their oil and environmental values, the groups showed no significant difference between each other. In common was however that if the participants had aligned themselves initially in the start, they experienced higher CD. Surprisingly, participants with a strong oil value expressed higher conflict most likely because a strong oil value is very contradictory to having a strong sustainability value when comparing the two. This is in line with (Thøgersen, 2004) where if one perceives a high control over a decision, which the framing of the question might have triggered, one's self-concept feels endangered leading to higher levels of cognitive dissonance. Related to this question, all justification measures showed a relationship intending to this conflict. There would be a higher reported CD when participants would separate the debates, simultaneously reporting that their values do not represent each other, whilst also justifying their sustainability measures to their support towards oil, which is in line with (Tanford & Montgomery, 2015) (Rothgerber, 2020) (Seyr, Gachter, Mohr, Georgi, & Lu, 2023) (Huijts, Vries, & Molin, 2019) (Voisin, et al., 2020).

Lastly, the formulations differentiated with the last question, indicating a *'dugnad'* (Midtbo, 2018) towards the hardship in collective support towards sustainability and the oil welfare state. This was especially apparent in the insignificance between the groups' means. Here, we see the oil supporters indicating lower CD. Accordingly, the CD oil supporters experienced the offensive statement, and sustainability supporters reported stronger conflict. Like reports of conflict to the offence statement, the problem might lie more in that their sustainability values conflict with an 'institution' that is more challenging to their self-concept, and therefore experiencing higher CD (Thøgersen, 2004). Participants reported higher CD if they separated the debates, accordingly, showing that there is significant friction when addressing the values cohesively. Moreover, if the respondent meant that their oil values did not reflect their sustainability, it was harder to initiate support for both simultaneously which creates the conflict between prioritizing economic growth and environmental concerns (Norgaard, 2006). Moreover, the CD was lower when their sustainability effort and support for oil was justified, which might indicate that the social norm of being sustainable might be a coherent driver of

the denial of responsibility to tend their CD ((McDonald, Oates, Thyne, Timmis, & Carlile, 2015).

8.0 Limitations and suggestions for future studies

This thesis poses several limitations due to the restricted sample, which was hard to obtain when the participants were not incentivized. Moreover, the participants were informed because of transparency that the survey might arouse feelings which might have been a deviation to participation in the survey. Although measures were put in place to ensure better readability of the data, the insignificant participants in the category sustainability and I don't know/ I had no opinion were not representable compared to the two other categories of sustainability and balanced approach. This resulted in skewed results and little statistical significance which might not represent the findings entirely. Significantly, the oil debate is a sensitive topic amongst individuals and is not highly discussed casually. Therefore, a lot of the participants might have placed themselves in the neutral answer options accordingly. There also might have been a form of self-reporting bias. Therefore, for further research, a bigger sample size that is more representative will be more desirable to make a significant analysis. Demographic and open-ended justification questions were included in this survey but were not included in the analysis due to the complexity of including too many variables. This can therefore be a considerable factor to study as moderators in the context of the Norwegian paradox.

9.0 Conclusions

This master thesis explored the complex relationship between cognitive dissonance and the Norwegian oil paradox. Common justifications and reconciliations were used to test the parameter in this unique context.

The findings challenge the common notion in CD that dissonance leads to information avoidance. Alternatively, in the Norwegian context, the contrary information is deeply processed and potentially creates an emotional arousal which might pose a reconciliation of beliefs. Simultaneously with the dual identity in Norway, it was easier for participants to report conflict and disagreement. Consequently, if the information contradicted their initial stance, the participants were more vocal about opposition.

The majority of the participants aligned themselves with supporting a balanced approach, indicating the adherence to emphasizing one cognition in reducing dissonance. This was evident when asking if the participant had confidence in their opinion, where this stance reported conflict, most likely because the values are regarded in equilibrium and therefore in higher CD. Consequently, participants who strongly aligned themselves in one position showed higher CD when the question was framed contrary to their opinion. Supporting a balanced approach expressed self-consciousness in confidence whilst having a stronger stance expressed higher self-affirmation. Confidence in opinions was lower if participants separated their opinions, indicating that not taking a stance indicates a higher CD.

Indistinguishably, all groups expressed conflict in their oil and sustainability values, indicating that CD arises when the values are directly conflicted with each other. Participants with high oil values would report higher confliction, indicating that Norwegians high sustainability values might influence this discourse. Participants would report a higher CD when they would signify a high value to separating the debate, distinguishing their values, and justifying their sustainability measures. This indicates that these methods are most likely commonly used to reduce the dissonance before it arises

Furthermore, the findings find that the framing of the question correlates to how the groups answer accordingly. Oil supporters found it easier to reconcile their support towards both sustainability and oil and therefore experienced lower CD. In contrast, it was harder for sustainability supporters, which might indicate that ‘dugnad’ discourse emphasizes one value over the other rather than according to each other.

In conclusion, the research has illuminated the complexity of cognitive dissonance in the Norwegian oil paradox. Strong identification with both environmental and oil values creates a common indication of cognitive dissonance across groups. This dissonance intensifies when individuals confront situations that challenge their stance. Before the dissonance arises, justification methods of separation of oil and sustainability values, agreement to separation in debates as well as justifying their sustainable efforts take place. These strategies form the predominant discourse on managing cognitive dissonance in Norway.

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12.0 Appendix

Appendix 1.0: Survey

The translation was carried out by the thesis author and Google Translate.

Norwegian original survey	English translation for thesis
Block 1: Questions in randomized order	
Introductory message	
Velkommen til min spørreundersøkelse for masteroppgaven min som omhandler konflikten mellom olje og miljøverdier. Ved å svare på spørreundersøkelsen sier du deg enig i å bidra med frivillige svar for å hjelpe å forstå holdninger og tro i henhold til temaet. Svarene vil være konfidensielle og vil bare bli brukt til akademiske årsaker. Vær oppmerksom på at spørsmålene tar opp temaer knyttet til oljedebatten, som kan vekke følelser. Tusen takk for ditt bidrag!	Welcome to my survey for my master's thesis which deals with the conflict between oil and environmental values. By answering the survey. you agree to contribute voluntary answers to help understand attitudes and beliefs according to the topic. The responses will be confidential and will only be used for academic purposes. Be aware that the questions bring up subjects regarding the oil debate, which can arouse emotions. Thank you for your contribution!
Q1: (Forced response – Allow one answer)	
Hvilken side lener du mest mot i olje og miljødebatten? o Jeg støtter oljeindustrien o Jeg støtter miljøvern o Jeg støtter en balansert tilnærming o Jeg har ingen mening o Jeg er usikker	**Which side do you lean most towards in the oil and environment debate?** o I support the oil industry o I support environmental protection o I support a balanced approach o I have no opinion o I am unsure
Q2: (Forced response – Allow one answer)	
Hvor viktig er det for deg personlig å leve bærekraftig? o Svært viktig o Ganske viktig o Nøytral o Lite viktig o Ikke viktig	**How important is it for you personally to live sustainably?** o Very important o Quite important o Neutral o Not very important o Not important
Q3: (Forced response – Allow one answer)	
Hvordan vurderer du olje- og gassindustriens betydning for Norges økonomi og velferdsstat? o Svært viktig o Viktig o Nøytral o Lite viktig o Ikke viktig	**How do you assess the importance of the oil and gas industry for Norway's economy and welfare state?** o Very important o Important o Neutral o Not very important o Not important

Defensive or offensive statement about the continuation of oil extraction (Randomized element – Evenly presented elements)	
→ ***Defensive*** statement about the oil welfare state	
Du blir nå presentert med en mal av ett utsagn som ofte blir brukt i forsvar til videre utvinning av olje og gass i Norge: " Vi må fortsette utvinningen av olje og gass. Norge har verdens reneste olje og verden trenger energi. Oljeutvinning fungerer som en finansiell ressurs i overgangen til nye energikilder. Det er ikke bare en naturlig ressurs, men en viktig bidragsyter til en fungerende velferdsstat som skal servere generasjoner til å komme."	You are now presented with a template of a statement often used in defense of continued oil and gas extraction in Norway: "We must continue the extraction of oil and gas. Norway has the world's cleanest oil, and the world needs energy. Oil extraction serves as a financial resource in the transition to new energy sources. It is not just a natural resource but also a significant contributor to a functioning welfare state that will serve generations to come."
→ ***Offence*** statement about the oil welfare state	
Du blir nå presentert med en mal av ett utsagn som ofte blir brukt i defensiv til videre utvinning av olje og gass i Norge: " Vi må stoppe utvinningen av olje og gass. Norge er ute av oljealderen og vi må over til ett grønt skifte for å kutte utslippene. Norge bør prioritere en raskere overgang til fornybare energikilder for å stoppe utslippene og bevare vår posisjon som klimaleder. Fortsettelse av oljeutvinning truer langsiktge bærekraftmål og fremtidige generasjoners velferd"	You are now presented with a template of a statement often used in offence of continued oil and gas extraction in Norway: "We must stop the extraction of oil and gas. Norway is out of the oil age, and we must transition to a green shift to reduce emissions. Norway should prioritize a faster transition to renewable energy sources to halt emission and preserve our position as a climate leader. Continuing oil extractions threatens long-term sustainability goals and the welfare of future generations."
Block 2 – Questions in stated order	
Q4: (Forced Response – Allow one answer)	
Hvor enig er du i utsagnet presentert? ○ Helt enig ○ Delvis enig ○ Nøytral ○ Delvis uenig ○ Helt uenig	**How much do you agree with the statement presented?** ○ Totally agree ○ Partially agree ○ Neutral ○ Partly disagree ○ Totally disagree
Q5: (Forced Response – Allow one answer)	
Har du opplevd noen motstridende tanker eller følelser angående temaet som ble diskutert? ○ Alltid ○ Svært ofte ○ Sjelden ○ Svært sjelden ○ Aldri	**Have you experienced any conflicting thoughts or feelings regarding the topic discussed?** ○ Always ○ Very often ○ Rarely ○ Very rare ○ Never

Q6: (Forced response – Allow one answer)	
Hvor enig er du i at olje og miljø bør behandles som separerte temaer i offentlig debatt? o Helt enig o Delvis enig o Nøyral o Delvis uenig o Helt uenig	**To what extent do you agree that oil and enviroment should be treated as separate topics in public debate?** o Totally agree o Partially agree o Neutral o Partly disagree o Totally disagree
Q7: (Forced response – Allow one answer)	
Hvor enig er du i følgende utsagn: "Jeg er selvsikker i mine meninger om olje- og miljødebatten"? o Helt enig o Delvis enig o Nøytral o Delvis uenig o Helt uenig	**How much do you agree with the following statement: "I am confident in my opinions about the oil and environmental"** o Totally agree o Partially agree o Neutral o Partly disagree o Totally disagree
Q8: (Forced response – Allow one answer)	
Hvor enig er du i følgende utsagn: "Mine syn på olje- og gassindustrien reflekterer ikke mine miljøverdier"? o Helt enig o Delvis enig o Nøytral o Delvis uenig o Helt uenig	**How much do you agree with the following statement: "My views on the oil and gas industry do not reflect my environmental values"?** o Totally agree o Partially agree o Neutral o Partly disagree o Totally disagree
Q11: (Forced Response – Allow one answer)	
Hvor ofte føler du at dine meninger om olje- og gassindustrien og miljøet er i konflikt med hverandre? o Alltid o Svært ofte o Sjelden o Svært sjelden o Aldri	**How often do you feel that your opinions about the oil and gas industry and the environment conflict with each other?** o Always o Very often o Rarely o Very rare o Never
Q12: (Forced Response – Allow one answer)	
Hvor utfordrende synes du det er å balansere din støtte til miljømessig bærekraft med din avhengighet av Norges oljevelferdsstat? o Ikke utfordrende o Lite utfordrende o Noe utfordrerne o Ganske utfordrende o Svært utfordrende	**How challenging do you think it is to balance your support for environmental sustainability with your dependence on Norway's oil welfare state?** o Not challenging o Slightly challenging o Somewhat challenging o Quite challenging

	○ Very challenging
Q13: (Forced Response – Allow one answer)	
I hvilken grad føler du at din personlige miljøinnsats rettferdiggjør din støtte til oljeindustrien? ○ I svært stor grad ○ I stor grad ○ I noen grad ○ I liten grad ○ I svært liten grad	**To what extent do you feel that your personal environmental efforts justify your support for the oil industry?** ○ To a very large extent ○ To a large extent ○ To some extent ○ To a small extent ○ To a very small extent

Appendix 2.0: Analysis

Cronbach alpha of cognitive dissonance measures:

Reliability Statistics

Cronbach's Alpha	N of Items
.212	6

Defensive statement ANOVA:

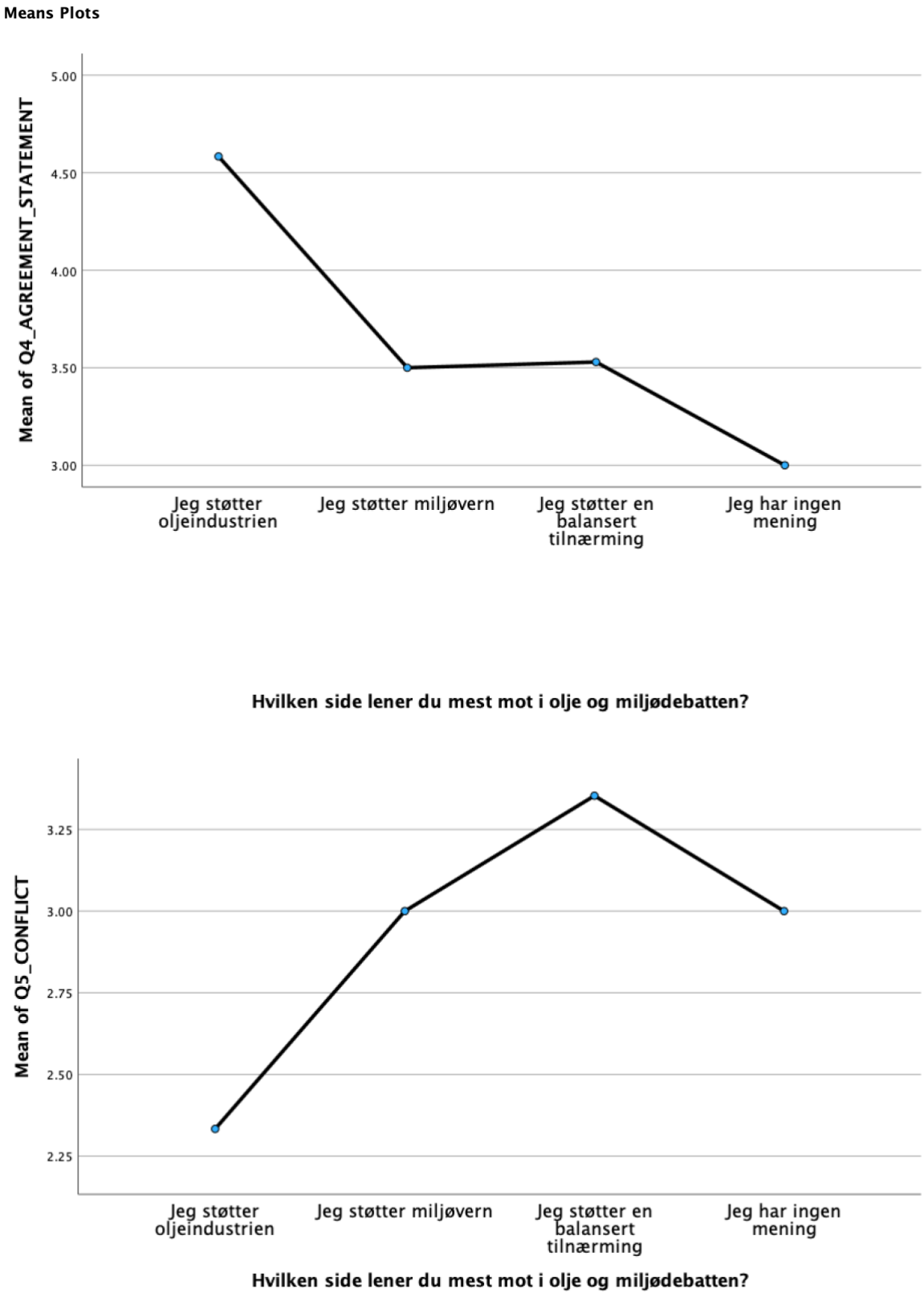
Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Q4_AGREEMENT_STATEMENT	Jeg støtter oljeindustrien	12	4.5833	.90034	.25990	4.0113	5.1554	2.00	5.00
	Jeg støtter miljøvern	2	3.5000	2.12132	1.50000	-15.5593	22.5593	2.00	5.00
	Jeg støtter en balansert tilnærming	17	3.5294	.87447	.21209	3.0798	3.9790	2.00	5.00
	Jeg har ingen mening	1	3.0000	.	.	.	.	3.00	3.00
	Total	32	3.9063	1.05828	.18708	3.5247	4.2878	2.00	5.00
Q5_CONFLICT	Jeg støtter oljeindustrien	12	2.3333	.98473	.28427	1.7077	2.9590	1.00	4.00
	Jeg støtter miljøvern	2	3.0000	1.41421	1.00000	-9.7062	15.7062	2.00	4.00
	Jeg støtter en balansert tilnærming	17	3.3529	.86177	.20901	2.9099	3.7960	2.00	5.00
	Jeg har ingen mening	1	3.0000	.	.	.	.	3.00	3.00
	Total	32	2.9375	1.01401	.17925	2.5719	3.3031	1.00	5.00

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q4_AGREEMENT_STATEMENT	Between Groups	9.067	3	3.022	3.299	.035
	Within Groups	25.652	28	.916		
	Total	34.719	31			
Q5_CONFLICT	Between Groups	7.326	3	2.442	2.785	.059
	Within Groups	24.549	28	.877		
	Total	31.875	31			

Offence statement ANOVA:



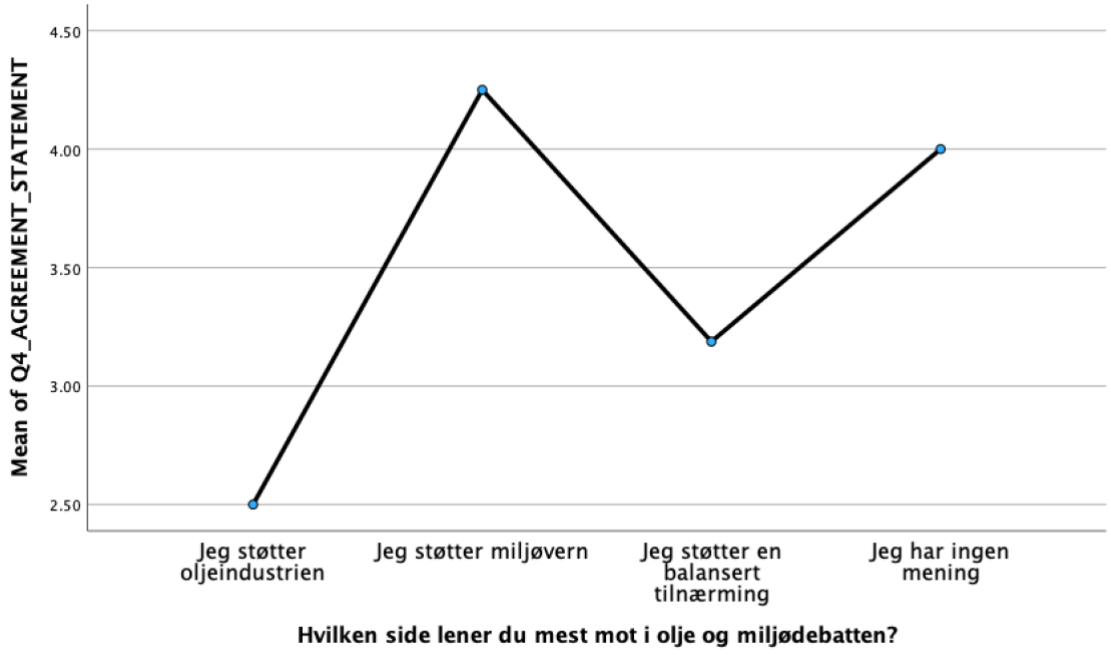
Offence statement ANOVA:

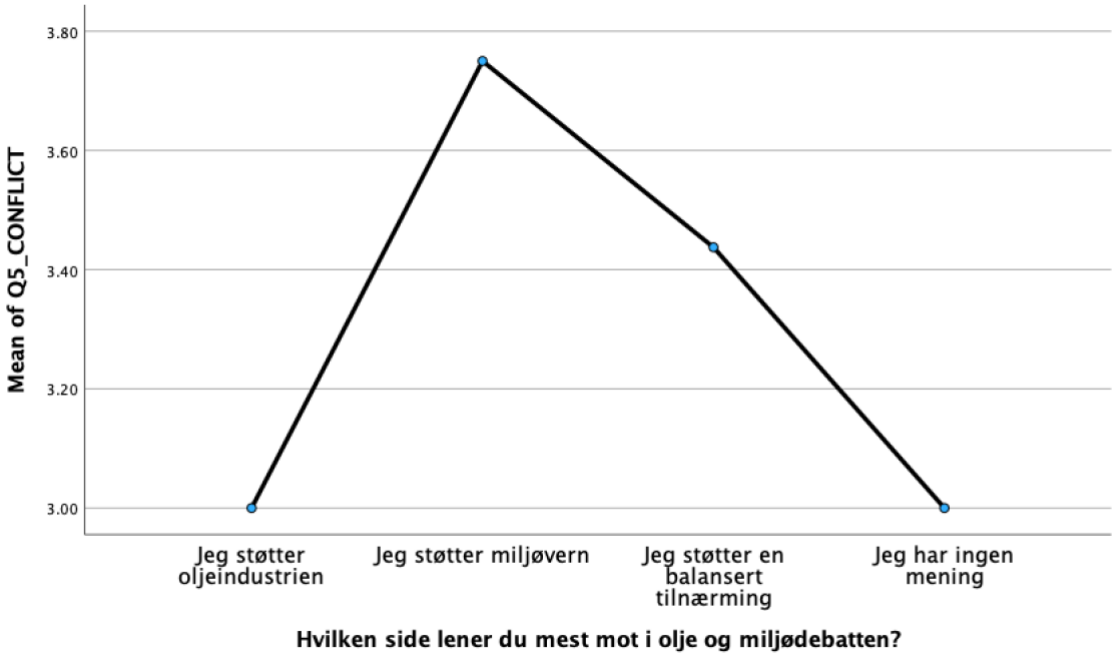
Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Q4_AGREEMENT_STATEMENT	Jeg støtter oljeindustrien	8	2.5000	1.19523	.42258	1.5008	3.4992	1.00	4.00
	Jeg støtter miljøvern	4	4.2500	.95743	.47871	2.7265	5.7735	3.00	5.00
	Jeg støtter en balansert tilnærming	16	3.1875	.75000	.18750	2.7879	3.5871	2.00	4.00
	Jeg har ingen mening	3	4.0000	1.00000	.57735	1.5159	6.4841	3.00	5.00
	Total	31	3.2258	1.05545	.18956	2.8387	3.6129	1.00	5.00
Q5_CONFLICT	Jeg støtter oljeindustrien	8	3.0000	1.06904	.37796	2.1063	3.8937	1.00	4.00
	Jeg støtter miljøvern	4	3.7500	.95743	.47871	2.2265	5.2735	3.00	5.00
	Jeg støtter en balansert tilnærming	16	3.4375	.81394	.20349	3.0038	3.8712	2.00	5.00
	Jeg har ingen mening	3	3.0000	.00000	.00000	3.0000	3.0000	3.00	3.00
	Total	31	3.3226	.87129	.15649	3.0030	3.6422	1.00	5.00

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q4_AGREEMENT_STATEMENT	Between Groups	10.232	3	3.411	3.971	.018
	Within Groups	23.188	27	.859		
	Total	33.419	30			
Q5_CONFLICT	Between Groups	2.087	3	.696	.908	.450
	Within Groups	20.688	27	.766		
	Total	22.774	30			





Q7 ANOVA:

Descriptives

Q7_CONFIDENCE_OPINON

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Jeg støtter oljeindustrien	20	1.3500	.48936	.10942	1.1210	1.5790	1.00	2.00
Jeg støtter miljøvern	6	2.0000	1.26491	.51640	.6726	3.3274	1.00	4.00
Jeg støtter en balansert tilnærming	33	2.9697	1.10354	.19210	2.5784	3.3610	1.00	5.00
Jeg har ingen mening	4	3.5000	.57735	.28868	2.5813	4.4187	3.00	4.00
Total	63	2.3968	1.21203	.15270	2.0916	2.7021	1.00	5.00

ANOVA

Q7_CONFIDENCE_OPINON

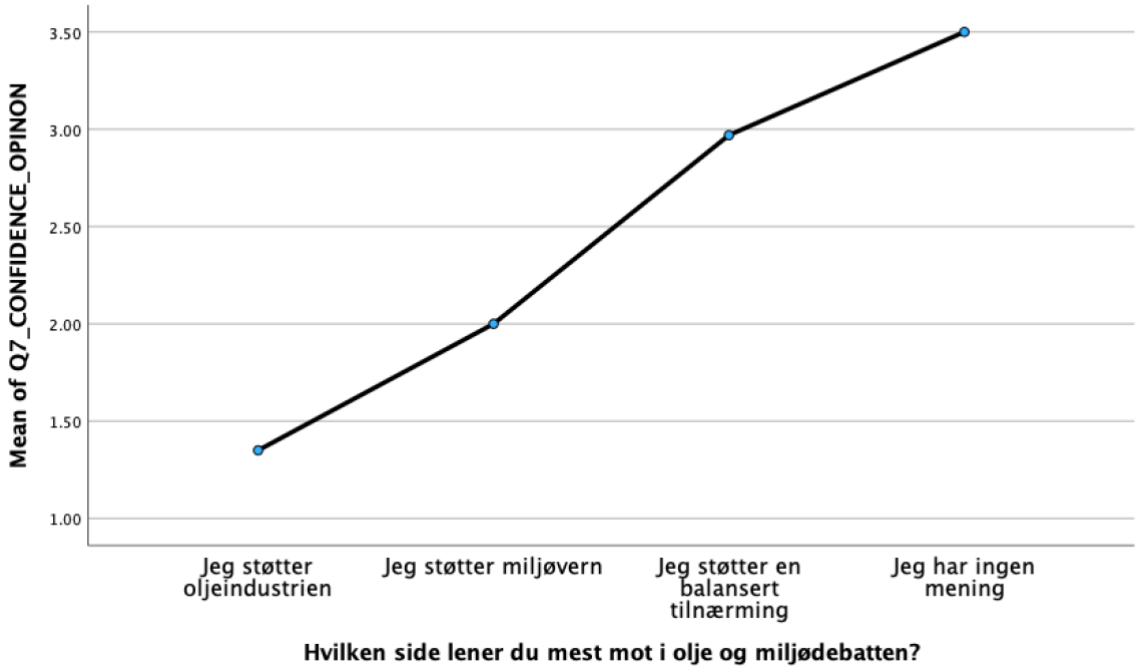
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.560	3	12.853	14.439	<.001
Within Groups	52.520	59	.890		
Total	91.079	62			

ANOVA Effect Sizes[a]

		Point Estimate	95% Confidence Interval Lower	Upper
Q7_CONFIDENCE_OPINON	Eta-squared	.423	.208	.547
	Epsilon-squared	.394	.168	.524
	Omega-squared Fixed-effect	.390	.165	.520
	Omega-squared Random-effect	.176	.062	.265

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

Means Plots



Q7 Linear Regression:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684[a]	.468	.378	.95598

a. Predictors: (Constant), Q13_JUSTIFIED, Q8_OIL_EQUALS_SUS, INTERACTION_BALANCED_APPROACH, INTERACTION_SUSTAINABILITY, Q6_SEPARETE_DEBATES, INTERACTION_OIL, Q1_OIL, Q1_BALANCEDAPPROACH, Q1_SUSTAINABILITY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.643	9	4.738	5.185	<.001[b]
	Residual	48.436	53	.914		
	Total	91.079	62			

a. Dependent Variable: Q7_CONFIDENCE_OPINON

b. Predictors: (Constant), Q13_JUSTIFIED, Q8_OIL_EQUALS_SUS, INTERACTION_BALANCED_APPROACH, INTERACTION_SUSTAINABILITY, Q6_SEPARETE_DEBATES, INTERACTION_OIL, Q1_OIL, Q1_BALANCEDAPPROACH, Q1_SUSTAINABILITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.739	.716		5.219	<.001
	Q1_OIL	-1.681	.904	-.651	-1.859	.069
	Q1_SUSTAINABILITY	-.237	2.575	-.058	-.092	.927
	Q1_BALANCEDAPPROACH	-.212	.841	-.088	-.252	.802
	INTERACTION_OIL	-.059	.211	-.082	-.281	.780
	INTERACTION_SUSTAINABILITY	-.260	.574	-.279	-.452	.653
	INTERACTION_BALANCED_APPROACH	-.017	.042	-.117	-.402	.689
	Q6_SEPARETE_DEBATES	-.161	.145	-.167	-1.114	.270
	Q8_OIL_EQUALS_SUS	.111	.119	.105	.939	.352
	Q13_JUSTIFIED	-.076	.166	-.065	-.460	.648

a. Dependent Variable: Q7_CONFIDENCE_OPINON

Q11 Linear Regression:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.447[a]	.200	.064	.98623

a. Predictors: (Constant), Q13_JUSTIFIED, Q8_OIL_EQUALS_SUS, INTERACTION_BALANCED_APPROACH, INTERACTION_SUSTAINABILITY, Q6_SEPARETE_DEBATES, INTERACTION_OIL, Q1_OIL, Q1_BALANCEDAPPROACH, Q1_SUSTAINABILITY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.863	9	1.429	1.469	.184[b]
	Residual	51.550	53	.973		
	Total	64.413	62			

a. Dependent Variable: Q11_OPINION_CONFLICT

b. Predictors: (Constant), Q13_JUSTIFIED, Q8_OIL_EQUALS_SUS, INTERACTION_BALANCED_APPROACH, INTERACTION_SUSTAINABILITY, Q6_SEPARETE_DEBATES, INTERACTION_OIL, Q1_OIL, Q1_BALANCEDAPPROACH, Q1_SUSTAINABILITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.088	.739		4.179	<.001
	Q1_OIL	-1.983	.933	-.913	-2.125	.038
	Q1_SUSTAINABILITY	-4.078	2.657	-1.184	-1.535	.131
	Q1_BALANCEDAPPROACH	-.260	.868	-.128	-.300	.766
	INTERACTION_OIL	.479	.217	.792	2.207	.032
	INTERACTION_SUSTAINABILITY	.792	.593	1.012	1.336	.187
	INTERACTION_BALANCED_APPROACH	-.004	.044	-.035	-.098	.922
	Q6_SEPARETE_DEBATES	.293	.149	.361	1.958	.055
	Q8_OIL_EQUALS_SUS	.132	.122	.148	1.081	.285
	Q13_JUSTIFIED	-.325	.171	-.330	-1.901	.063

a. Dependent Variable: Q11_OPINION_CONFLICT

Q11 ANOVA:

Descriptives

Q11_OPINION_CONFLICT

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Jeg støtter oljeindustrien	20	3.2000	1.15166	.25752	2.6610	3.7390	1.00	5.00
Jeg støtter miljøvern	6	2.5000	1.37840	.56273	1.0535	3.9465	1.00	4.00
Jeg støtter en balansert tilnærming	33	3.2424	.90244	.15709	2.9224	3.5624	1.00	5.00
Jeg har ingen mening	4	3.2500	.50000	.25000	2.4544	4.0456	3.00	4.00
Total	63	3.1587	1.01927	.12842	2.9020	3.4154	1.00	5.00

ANOVA

Q11_OPINION_CONFLICT

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.902	3	.967	.928	.433
Within Groups	61.511	59	1.043		
Total	64.413	62			

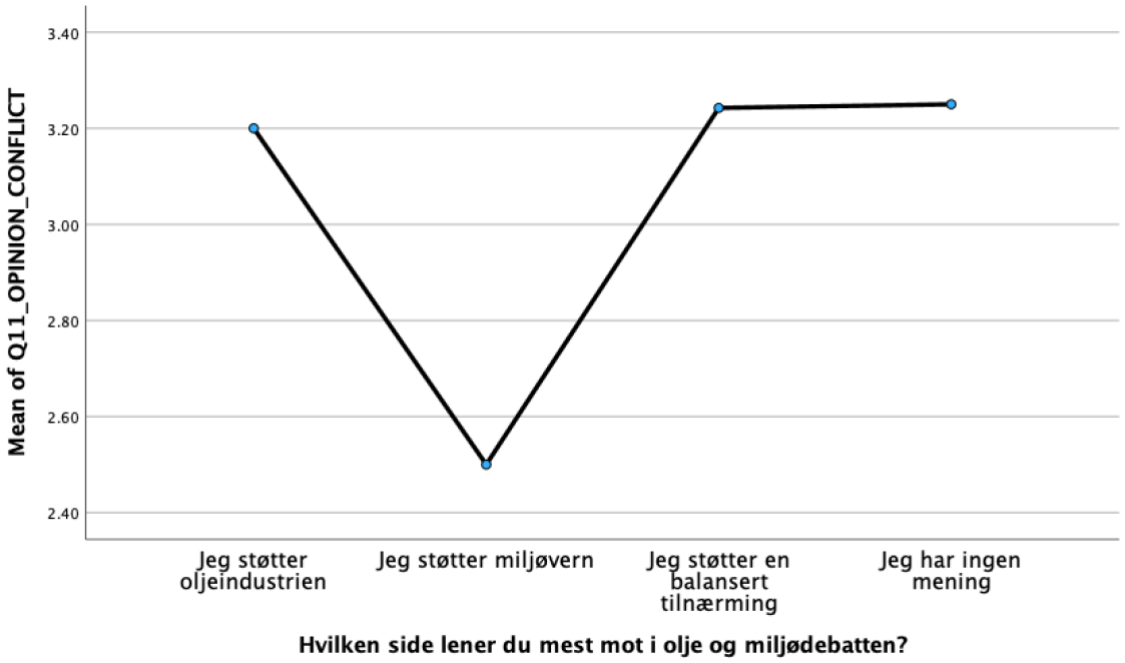
ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval	
			Lower	Upper
Q11_OPINION_CONFLICT	Eta-squared	.045	.000	.140
	Epsilon-squared	-.004	-.051	.097
	Omega-squared Fixed-effect	-.003	-.050	.095
	Omega-squared Random-effect	-.001	-.016	.034

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Means Plots



Q12 Linear Regression:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.527[a]	.277	.155	1.06970

a. Predictors: (Constant), Q13_JUSTIFIED, Q8_OIL_EQUALS_SUS, INTERACTION_BALANCED_APPROACH, INTERACTION_SUSTAINABILITY, Q6_SEPARETE_DEBATES, INTERACTION_OIL, Q1_OIL, Q1_BALANCEDAPPROACH, Q1_SUSTAINABILITY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.291	9	2.588	2.262	.032[b]
	Residual	60.646	53	1.144		
	Total	83.937	62			

a. Dependent Variable: Q12_UTFORDRING

b. Predictors: (Constant), Q13_JUSTIFIED, Q8_OIL_EQUALS_SUS, INTERACTION_BALANCED_APPROACH, INTERACTION_SUSTAINABILITY, Q6_SEPARETE_DEBATES, INTERACTION_OIL, Q1_OIL, Q1_BALANCEDAPPROACH, Q1_SUSTAINABILITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.114	.802		3.885	<.001
	Q1_OIL	-1.362	1.012	-.549	-1.345	.184
	Q1_SUSTAINABILITY	-7.805	2.882	-1.985	-2.708	.009
	Q1_BALANCEDAPPROACH	.025	.941	.011	.027	.979
	INTERACTION_OIL	.100	.236	.145	.426	.672
	INTERACTION_SUSTAINABILITY	1.664	.643	1.864	2.589	.012
	INTERACTION_BALANCED_APPROACH	-.028	.047	-.202	-.593	.556
	Q6_SEPARETE_DEBATES	.406	.162	.438	2.503	.015
	Q8_OIL_EQUALS_SUS	.129	.133	.127	.972	.335
	Q13_JUSTIFIED	-.514	.185	-.458	-2.774	.008

a. Dependent Variable: Q12_UTFORDRING

Q12 ANOVA:

Descriptives

Q12_UTFORDRING

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Jeg støtter oljeindustrien	20	2.3500	1.13671	.25418	1.8180	2.8820	1.00	5.00
Jeg støtter miljøvern	6	2.3333	1.03280	.42164	1.2495	3.4172	1.00	3.00
Jeg støtter en balansert tilnærming	33	3.0303	1.10354	.19210	2.6390	3.4216	1.00	5.00
Jeg har ingen mening	4	3.0000	1.63299	.81650	.4015	5.5985	1.00	5.00
Total	63	2.7460	1.16354	.14659	2.4530	3.0391	1.00	5.00

ANOVA

Q12_UTFORDRING

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.083	3	2.361	1.813	.155
Within Groups	76.853	59	1.303		
Total	83.937	62			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval	
			Lower	Upper
Q12_UTFORDRING	Eta-squared	.084	.000	.203
	Epsilon-squared	.038	-.051	.162
	Omega-squared Fixed-effect	.037	-.050	.160
	Omega-squared Random-effect	.013	-.016	.060

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.