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Master thesis

Navigating Norwegian vaccine hesitancy

An exploration of vaccine barriers and incentives during the era of COVID-19

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Political Communication: Nordic Perspectives
60 ECTS

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Fall 2023

Abstract

Vaccine hesitancy is a global health concern, influencing vaccination rates and public wellbeing. During the COVID-19 pandemic, it became a critical concern due to the profound effect on public health. There have been studies connecting vaccine hesitancy and political ideologies, and vaccine hesitancy and media usage, but as the COVID-19 pandemic and vaccine are still new, there is a gap in existing data due to the lack of in-depth interviews. Using in-depth interviews, individual perceptions of vaccine hesitancy and effecting causes are explored, looking into the complexity of the situation and the decision-making processes of individuals. This study uses the framework of the 3 Cs of vaccine hesitancy - complacency, confidence, and convenience - while exploring beyond the scope of the three concepts. This thesis found that there was sufficient data to argue for a more intensive look into incentives along with the 3 Cs, and how those incentives help reduce hesitancy.

Acknowledgements

The pandemic shaped the lives of many, and as someone who lived in both the United States and in Norway during this time, I experienced the different ways that both governments decided on in handling such an unprecedented event. This thesis, born out of the desire to understand what caused that difference, has been fulfilling and challenging all at once, and I am grateful to those who supported me in this academic journey.

First, I would like to thank my academic advisor Dr. Øyvind Ihlen, without whose support this endeavor would not have been possible. Your guidance through the project has been valuable and supportive through the last two years. I would also like to thank my fellow classmates, whose encouragement and insight helped shape the project into a strong research thesis. Our courses and study sessions were invaluable.

I would also like to acknowledge the participants who were a strong source of research during the project. Thank you to the participants in this study. Your time spent sharing your opinions about the COVID vaccine and more was a resource to me that cannot be overstated, and I appreciate the support for my project. To my friends, thank you for your help and encouragement throughout the project when I faltered.

Lastly, I would like to thank my mom, dad, sister, and brother who all reside back in the United States. Your support with not only the project, but also the support with moving to a new country during the middle of the pandemic, was unfailing and profound. You gave me the confidence to uproot and restart in a new way I thought was not possible.

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1 Introduction

1.1 Project Background

At the end of 2019, a new illness emerged that would quickly dominate the global stage as a pandemic. COVID-19 spread quickly around the world, leading to intensive lockdowns, economic downturn, and death due to disease. The introduction of the COVID vaccine was a great accomplishment for public health, pointing towards the possibility of a future where a return to normalcy is viable (Kour et al., 2022). However, the response to the COVID vaccine also emphasized a pre-existing significant barrier to public health: vaccine hesitancy. In order for vaccines to be effective for community health, there has to be significant uptake (Petersen, Bor, Jørgensen, & Lindholt, 2021). The development of the vaccine was absolutely a success for health, but having people get the vaccine is the second half of answering the problem. There is no use to a vaccine that is not taken.

As an American citizen who immigrated to Norway during the height of the COVID pandemic, the social values and context of the Norwegian culture surrounding vaccinations are extremely different from the values held in United States society. The polarization of vaccines and the politicization of vaccines I saw in the United States did not seem as prevalent in Norway, and I wanted to explore reasonings for vaccination habits. Originally, I wished to conduct a comparative study between the United States and Norway, but due to the unique context of Norway, along with access to participants in Norway, I made the decision to conduct an exploratory analysis on just Norway.

The effectiveness of vaccinations has simultaneously been the cause of consequences (Salmon, Dudley, Galnz, & Omer, 2015). As vaccinations become more prominent, the diseases they fight against become less familiar, and the effectiveness or necessity of said vaccines becomes put into question (Salmon et al., 2015). Because of this, promotion of vaccines is essential. Vaccine communication is essential to promote public health and safety. For example, surveys conducted in the United States during the COVID pandemic showed fluctuating willingness to be vaccinated (Wood & Schulman, 2021). This puts the health of the general public at risk and is important to address.

Norway has historically had great success with vaccinating the general public, due to a robust vaccination program in public schools and accessibility of vaccines (Steens et al., 2020). However, there are still those that refused to get the vaccines offered and those who are hesitant

about vaccines. For example, the HPV vaccine had a less than 90% uptake in the school-based vaccine programs in Norway (Feiring et al., 2015). In the global context, this is successful, but in Norway, it is more nuanced. The rest of the vaccines offered in the program had over 90% inoculation rate, leaving the HPV vaccine as an outlier.

In a country with such a high rate of vaccine acceptance, what are the factors that go into vaccine decisions? Specifically, what factors are relevant to the COVID vaccination for Norwegians and the decisions relating to this? There is much literature surrounding driving factors for vaccine hesitancy, including vaccine hesitancy related to COVID and in Norway. There is still a need for more qualitative exploration of the phenomena of vaccine hesitancy. Previous studies have tended to be more survey based (i.e., Shih et al., 2021; Soares et al., 2021; Wollebæk et al., 2022) or oriented towards specific groups such as mothers or immigrant populations (i.e., Frew et al., 2014; Feiring et al., 2015; Kour et al., 2022; Steinmetz, 2022). The acceptance rate for COVID vaccination was surrounded by controversy, contributing to the motivation for this thesis.

The framework used in the thesis is the 3 Cs of vaccine hesitancy as proposed by the World Health Organization (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). These concepts are complacency, convenience, and confidence. Complacency is how an individual perceives the risk of an illness and/or the risk of the vaccine. Convenience is the accessibility of a vaccine. Confidence refers to barriers stemming from trust. This can be trust in the medical systems and/or trust in the governmental structures. The definitions used for the 3 Cs will be explored more in-depth in chapter two.

The original framework for this thesis was to explore the gathered holistic data through the framework of the 3 Cs and trust. However, throughout the interview process, it became clear that the 3 Cs were not enough to contextualize and analyze reasonings for vaccine decision making. Therefore, this thesis examines factors outside of the 3 Cs' context and calls for future studies to explore a framework beyond the 3 Cs. Incentives appeared to me throughout the study as an important part of vaccine hesitancy. To the best of my knowledge, the majority of intention has been focused on barriers to vaccine decision-making. Incentive studies are not new when it comes to vaccine literature, but the focus has mostly been on finances.

Though Norway has a high COVID vaccination rate in a global context, in country-context, the rate is low. As mentioned previously, prior studies have primarily been survey-based, and

therefore more qualitative data is needed in this field. Qualitative data allows for more in-depth and nuanced information from the participants and helps gain insight into areas that may be missed in a survey. Due to the impact of the COVID pandemic, many people have asked "how should we promote vaccination?" (Wood & Schulman, 2021). Understanding what causes vaccine hesitancy can help answer this question.

The structure of the thesis will begin with background into vaccinations in Norway and the COVID pandemic and move into the theory and framework that will be used in the paper and the research questions. Next, the paper will cover the literature review, tying it in with the theories, framework, and questions. Methods and interview framework will follow, with analysis of interviews and breakdown of the demographics of interviewees afterwards. Following this will be a discussion of the research gathered, and the thesis will end with the conclusion of the research. This project is not meant to be a representational study. Rather, it is an exploratory study based on previous research to understand individual reasons through in-depth interviews and pursue potential cultural contexts through having just Norwegian participants and asking questions related to socio-political context of the country. The findings would influence further research and understanding but could not be attributed to the whole of Norwegian society.

Norway has a high vaccination rate along with a high trust in government (OECD, 2022), but there were still those who chose not to get vaccinated (Steens et al., 2020). The pursuit of understanding the deeper reasonings surrounding vaccine hesitancy is what sparked my interest in this project.

1.1.1 Vaccination in Norway

Norway is characterized by high trust in vaccines (Steens et al., 2020). Norway has a strong free vaccination program, so most of the vaccine refusal due to economic status can be mitigated, unlike countries such as the United States, but it does not completely remove the factor of socioeconomic status in vaccine choice. Norway has a childhood vaccination program that offers free and voluntary vaccines through schools and health centers (Steens et al., 2020). In comparison to other countries in Europe, Norwegians tended to demonstrate less vaccine hesitancy during the COVID pandemic (Ebrahimi et al., 2021).

There are factors that have a significant effect on vaccination choice in Norway, specifically education level and income level. The HPV vaccination was offered for free to schoolgirls

starting from 2009, as part of the free vaccination program's commitment to 'equal access' (Feiring et al., 2015). This made it very accessible and helped remove some barriers for those who may have not gotten the vaccine. During the COVID pandemic, the Norwegian government set up a program known as the "Coronavirus Immunisation Programme". This provided COVID vaccines on a free, voluntary basis, with prioritization of vulnerable individuals (Skjesol & Tritter, 2022).

Norway was one of three countries in a study of 29 countries that did not experience a decrease in life expectancy during the COVID-19 pandemic and was the only country to have higher life expectancy in 2021 compared to 2019 (Schöley et al., 2022). The others were Denmark and Finland. This is one way that Norway had set itself apart during the COVID-19 pandemic. Another way was their vaccination rates, with around 12 million doses being administered in a country of 5 million people (Mathieu et al., 2020). Also, in Norway, the female gender is a significant predictor to lower rates of vaccine hesitancy and higher vaccine acceptance (Wollebæk et al., 2022) while worldwide that tends to be the opposite (Troiano & Nardi, 2021).

Most vaccinations in this Norwegian program have reached 90% usage, except for HPV. Feiring et al (2015) investigate socioeconomic status indicators to look for correlations, which they found vaccine refusal having a high correlation between high maternal education but low with high maternal finances. However, this refusal could also be done due to anxieties surrounding vaccinations. Considering that the HPV vaccine was the only one with a lower than 90% use rate, this shows that there was a reason beyond these two factors, economic status and education status, that could potentially cause them to choose not to get the vaccine (Feiring et al., 2015). Since Norway has such a distinct vaccination program and attitude, I questioned the motives of vaccine hesitancy surrounding the COVID-19 vaccination from the Norwegian public. In the section 2.5.1, the paper goes into detail of existing literature conducted in Norway during the COVID pandemic.

1.1.2 COVID-19 Pandemic

"The COVID-19 pandemic has brought to the forefront a long-standing debate regarding vaccination hesitancy" (Coustasse, Kimble, & Maxik, 2020). By January 2021, over 2 million people were dead due to COVID and over 89 million were diagnosed with the disease (Soares et

al., 2021). As diseases disappear from the public due to vaccinations, people are less likely to get their children vaccinated (Steens et al., 2020). The threat disappearing leads people to doubt the necessity of vaccines, and this can be seen during the COVID pandemic, where people questioned the effectiveness of the vaccination. This thesis is being conducted after a large percentage of people have been vaccinated in Norway and globally while the vaccine is widely available.

A framework used to understand vaccine hesitancy is the three Cs, created by the World Health Organization (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). This framework was developed pre-COVID and has many articles supporting its use as a framework for vaccine hesitancy understanding. It has also been used to study much of the COVID pandemic vaccine hesitancy response. There has been some criticism surrounding this theory, with proposals of other frameworks, but this framework has been evaluated multiple times and has high validity. It will be used in this thesis in order to understand vaccination acceptance and hesitancy in Norway.

Along with the framework of the 3 Cs, trust and trustworthiness will be a framework used in conjunction to analyze participant responses. Further into the study, during the analysis of the interviews, I found that there were points that did not fit in the framework of trust or of the 3 Cs. Thus, a broader analytical perspective was needed. This is where the framework of incentives came in. Many of the points which did not fit into the aforementioned framework did fit into this idea of incentives.

As said before, Norway tends to have high rates of vaccination uptake, and has experienced low rates of death and infection during the COVID pandemic (Skjesol & Tritter, 2022). Norway also had fairly restrictive policies during the pandemic, as compared internationally (Hedenigg, 2021). These restrictions tended to be accepted by the general population in Norway, as only 3% of Norwegians thought that keeping schools and kindergartens open was positive, and 45% strongly agreeing that they should be closed (Helsingen et al., 2020). 83% of Norwegians believed that the authorities made proper decisions around preventing infection of COVID-19 (Helsingen et al., 2020).

As mentioned before, the COVID vaccination had a comparatively low rate of uptake out of all the vaccinations in Norway, with 93.1% of the adult population having taken at least one COVID vaccine shot and 90.6% having taken two doses (Skjesol & Tritter, 2022). Though this

figure is a high number overall, in the Norwegian context, this is a low figure for vaccination rates. What sets this one apart from the rest? Are there certain factors that set the COVID vaccination in contrast to other vaccines? This is what I will attempt to answer in this thesis using in-depth interviews. Other research has explored this through surveys and polls, but this project focuses on the interpretive, given reasons. I will add a deeper and more varied perspective on the 3 Cs and on incentives.

1.1.3 Research Questions

This research project was conducted as an exploratory investigation with a broad concept to consider, centered around understanding the dynamics of vaccine hesitancy and decision-making. There are barriers for vaccine decision-making, but there are also potential incentives as mentioned above. The overarching question for this project was as follows:

1) What are self-reported factors in vaccine decision-making regarding COVID-19 in Norway?

Along with this question, which allowed for a broad context of research, two other questions helped facilitate the analysis process:

a) What role does the broad context of the COVID pandemic play into vaccine decision-making?
b) How do the 3 Cs of vaccine hesitancy play a role in vaccine decision-making for the participants?

The expansiveness of the main question allows for a comprehensive overview of the purpose of the research conducted. The primary focus of the thesis is to explore factors that influenced vaccine decision-making during the COVID-19 era in the participants, employing the framework of the 3 Cs. Subsequently, the following two questions help narrow the investigation, aiming for deeper understanding of the factors, such as in the context of trust and incentives.

The direct mention of the 3 Cs - confidence, complacency, and convenience - in the second sub question demonstrates the integrated structured approach to the thesis. This framework will be expanded on more in the following chapter in order to better understand the outline of the thesis. Understanding the role of confidence, trust, and seeking deeper insight could show areas where more research and understanding is needed for future research.

2 Theory and Literature

This chapter starts with a look into the framework of vaccine hesitancy, and the development of the term in recent literature. It defines vaccine hesitancy and the evolution of the concept. The second part will be literature from during the COVID-19 pandemic and research pertaining to the COVID vaccination. This will help orient the context of the literature and where this thesis develops from.

Within the section on COVID research, there will be a subsection on literature specifically related to the Norwegian political and socioeconomic context and how this relates to vaccination habits and behaviors during the COVID pandemic. The purpose of this subsection is to differentiate the Norwegian research context from the global context, and to better highlight possible challenges in the Norwegian political landscape. This helps focus onto the specific context of Norway and COVID, as this project attempts to build on this research as well.

Section 2.4 then addresses literature about incentives in vaccine research, and how that affects vaccine hesitancy and vaccine uptake. This section is placed after the COVID-19 research as much of this research comes from this time, due to the importance of finding ways to improve vaccination rates.

The 3 Cs will be defined individually as they pertain to the project. This will help highlight the scope and definitions that are used throughout. After this is a section on the concept of trust, which will be used in the analysis section. Literature on incentives for vaccine decision-making will be the concluding section before the section summarizing the contents of the theory and literature review. The incentive section will investigate research previously conducted on incentives in vaccine decision-making, and how this thesis positions itself within that scope of research.

2.1 Defining Vaccine Hesitancy

Vaccinations are one of the best ways to protect against illnesses, and up to 3 million people a year are prevented from dying from diseases due to vaccines and vaccination programs (WHO, 2019). However, according to the same report from the World Health Organization (2019) with a focus on reducing vaccine hesitancy, millions more could also be protected. Vaccine hesitancy is one of the biggest barriers to eradicating diseases and poses the risk of reverting eradication progress that has already been made (WHO, 2019). Multiple factors contribute to vaccine

hesitancy, such as economic, educational, and language factors. These factors are addressed more in-depth in section 2.2 on the 3 Cs of vaccine hesitancy. “Vaccine hesitancy is complex, variable, and shaped by multiple contextual factors” (Razai et al., 2021; p. 297).

As vaccine hesitancy is the basis of this thesis, it is important to specify the meaning of the term. The WHO Strategic Advisory Group of Experts (henceforth SAGE) was a vaccine hesitancy working group to help explain and identify factors that relate to vaccine hesitancy over a period of multiple years (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015; Schuster, Eskola, & Duclos, 2015). This group was appointed by the WHO in order to focus on vaccine hesitancy in 2015. There is a continuum between wariness and outright refusal when it comes to vaccine hesitancy, meaning that it is highly individual which factors are behind vaccine hesitant behavior. It can also be individual towards the context of a specific vaccine as well. SAGE addresses this by coming up with the 3 Cs, which is a main theory used throughout this project. This continuum, from high demand to outright refusal, will also be used in categorizing individuals and their response to vaccines during interviews.

The following definition of vaccine hesitancy was provided by MacDonald and SAGE Working Group on Vaccine Hesitancy (2015): “Vaccine hesitancy refers to delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place and vaccines. It is influenced by factors such as complacency, convenience, and confidence.” (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015; p. 4163). This is the definition that will be used in the thesis.

Vaccine hesitancy is not an issue confined to any specific country but instead is a phenomenon that exists worldwide (Dubé et al., 2014). It also is context-specific, and changes based on the individual, illness, and vaccine (Mayer, Helm, Heinz, Barnett, & Arora, 2022). This hesitancy affects multiple groups, and certain indicators are considered a predictor of potential vaccine hesitancy. Vaccine hesitancy can still be present within populations who do decide to get fully vaccinated, as individuals can still have worries about vaccines despite their vaccination status (Salmon et al., 2015).

The following sections will refer to literature about vaccine hesitancy, though separated into the proper categories. The context around the literature is better used within the specific sections as to help understand the current and previous literature on vaccine hesitancy. It is an overarching concept throughout the thesis.

2.2 Pre-COVID Vaccine Research

Previous vaccine research is important to access understanding of the field from before the COVID pandemic. This section deals with vaccine hesitancy and vaccine avoidance research in a broader sense than section 2.1 and expands on the framework that 2.1 provided. While 2.1 was an overview of the definition and factors of vaccine hesitancy, this section goes into more depth on previous research findings and definitions.

"Vaccination is one of the most cost-effective interventions to prevent infectious diseases" (Steens et al., 2020). This quote by Steens et al. (2020) is a reasoning and incentive for governments to promote a vaccinated public, as it helps reduce costs on public health structures and businesses. Understanding vaccine hesitancy helps lift burdens on structures that are impacted by the health of a community. The term 'vaccine hesitancy' is a more recent term used to understand vaccine behaviors and attitudes, and to specify that these attitudes do not fall on a binary, but rather a scale. In 2015, as mentioned before, the World Health Organization Group (SAGE) and MacDonald introduced the 3 Cs of vaccine hesitancy, which allowed for specific targeting of factors that influence vaccine hesitancy. This article by the SAGE Working Group on Vaccine Hesitancy also provided potential questions to be asked during a survey or interview, which I have used to help develop my interview guide for this research project (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). Vaccine hesitancy is often combined with vaccine refusal, but the idea of vaccine hesitancy exists on a continuum, with most people falling somewhere in the middle (Dubé, Gagnon, Nickels, Jeram, & Schuster, 2014).

Overall, much research into vaccination attitudes has been conducted in the United States, especially before COVID (Charo, 2007; Mello et al., 2015; Fisher et al., 2013). This research helps form a background of information, but not the cultural context of Norwegian society, with some exceptions (Wollebæk et al., 2022). There have been numerous COVID-19 studies published as of the end of 2023, but looking back at recent research conducted on vaccine hesitancy pre-COVID helps form a foundation for this research. Much of this research has been within the field of healthcare communication, medicine, and crisis communication. Within the field of medicine, specifically, there has been much recent research on the political side of healthcare, especially from the United States. Looking into these journals helps broaden

historical knowledge of vaccination denial and how governments promoted vaccinations as well, and the reasons that go into vaccine denial.

Hesitancy surrounding the HPV vaccine in the past was not specific to a singular country (e.g., Fischer et al., 2013; Feiring et al., 2015). In 2007, the Gardasil vaccine and the HPV (human papillomavirus) vaccine were under scrutiny in the United States since some states were making it mandatory to get in order for children to have access to public school. Some parents saw it as a violation of their rights, but the courts upheld vaccine mandates as constitutional (Charo, 2007). The HPV vaccine has been subjected to intense scrutiny, as compared to other vaccines, and has been suggested to need social support in order to improve inoculation rates (Fisher et al., 2013). This is also true in Norway. As mentioned before, Norway has a robust public vaccination program for youth, and the only vaccine not to reach 90% in this program was the HPV vaccine (Feiring et al., 2015).

HPV is a commonly transmitted sexual disease in young women and can have consequences such as cervical cancer. The HPV vaccine helps prevent transmission, and in Italy, the vaccine series was offered for free. However, the uptake was from 25% to 82%, depending on the area of Italy (Palmeri et al., 2017). A study conducted by Palmeri et al. (2017) attempted to uncover vaccine hesitancy in parents and reasonings behind the hesitancy. They conducted phone surveys with parents and found that many parents felt as if they had received little to no information on the HPV vaccine from healthcare workers. Communication from healthcare workers was a purported solution to vaccine hesitancy, as multiple participants in the study said that healthcare workers were their primary source of vaccine information (Palmeri et al., 2017). Understanding the hesitancy around the HPV vaccine is important, due to the similarities to COVID vaccine hesitancy.

Some effort has been taken to reduce vaccine hesitancy in populations. In 2015, the State of California stopped personal-belief exemptions for vaccinations, and this was due to the rate of this type of exemption doubling since 2007, and one of the reasons for this legislature passing was the refusal to back down by politicians (Mello et al., 2015). This then emboldened other states in the United States to follow suit.

Anti-vaccine content has also been often shared on the internet, with anti-vaccination websites appearing with testimonials and fearmongering (Bean, 2011). Several trends appeared and shifted during the 2000s and 2010s, such as manufactured diseases, vaccines causing autism,

and changing alongside the existing science (Bean, 2011). In the 2000s, the internet played an essential role in spreading vaccine misinformation (Kata, 2010) and the growth of the internet has led more people to research vaccinations online. This oftentimes would take them to vaccine disinformation websites, although the country of search impacted the results, with American results being 26% anti-vaccination results and Canadian being only 6% (Kata, 2010). This could be due to algorithms and popularity of certain answers in each country.

There was a purported shift in vaccine information online in years leading up to the COVID pandemic (Elkin, Pullon, & Stubbe, 2020). Elkin et al.'s article found, in comparison to earlier studies, that there was a more even split between vaccine discouragement and vaccine positive information online. They studied the results appearing on Facebook, Google searches, and YouTube, with multiple search terms, and found a positive bias towards vaccines. The most negative content came from Facebook, though negative results were found on all platforms. One possible reasoning for this shift was the WHO campaign in 2011, the Global Vaccine Action Plan, which utilized social marketing tactics (Elkin, Pullon, & Stubbe, 2020).

However, viewing positive vaccine information online does not necessarily change vaccine perception. In 2012, university students were exposed to either a negative, neutral, or positive blog about the HPV vaccine (Nan & Madden, 2012). The negative blog had demonstrated negative effects on a person's perceived safety of the vaccine, while the positive site had little impact on already held perceptions. Though the study was not applicable to a generalized public, as it was conducted with undergraduate students, it does show the potential impact of online information, and specifically negative information, on vaccine safety perception. Contingently, Jarrett et al. (2015) found that successful strategies used to combat vaccine hesitancy employed multiple parts, such as education initiatives and campaigns that directly target low-vaccinated populations. At this point, as the article mentions, most evaluated studies of vaccine hesitancy were from the US context.

Larson et al. (2014) developed a survey tool to assess vaccine hesitancy, specifically the nature and scale of it. It provided a wide berth of questions that could be asked during a survey on vaccine hesitancy, but the questions are also valuable to use during an interview. Larson's article compiled a large amount of research conducted in the years from 2007 to 2012, during a time where the term vaccine hesitancy was emerging. The paper also emphasizes that vaccine hesitancy is not the same as vaccine refusal, and that those who are hesitant do not always refuse

vaccinations. This article provided a strong survey tool that was used to develop an interview guide for the interviews conducted for this thesis. However, since this tool was developed pre-COVID, some questions used during the thesis interviews have been updated to specify contexts that are important due to the pandemic and the nature of the thesis.

In 2011-2012, semi-structured interviews were conducted with pregnant women from minority populations in the United States and their influenza vaccine decisions (Frew et al., 2014). The focus, though not on the term vaccine hesitancy specifically, did address factors commonly associated with vaccine hesitancy, such as convenience (access to vaccines) and confidence (trust in the effectiveness of the vaccine). Even though the target group of the investigation is more likely to have complications, or even die from influenza, they have significantly lower rates of inoculation against influenza. The use of semi-structured interviews in the study helped find eligible individuals and was able to frame messages given by the participants. This study provided a good basis for interview research, but if it had been with the framework of the 3 Cs, I do believe it could have been built upon to find more factors influencing vaccine choice. Since the framework of the 3 Cs was created after this study, it is not possible for it to have had those factors.

Another study that looked into parental vaccine hesitancy was Salmon, Dudley, Glanz, and Omer in 2015. This study utilized the framework of the 3 Cs to understand decision making of parents. Parental refusal or acceptance is an important factor when it comes to vaccine uptake (Salmon et al., 2015). Vaccine hesitancy has been linked to different disease outbreaks, because herd immunity is important to stop the spread of diseases in society (Salmon et al., 2015). Since parents vaccinate their children, addressing the fears that parents have surrounding vaccination can help stop the spread of childhood diseases, such as measles and chickenpox (Salmon et al., 2015). From 2004 to 2010, the rate of children who were under vaccinated increased, showing the need for parental-aimed vaccine communication (Salmon et al., 2015).

The global context is important to address when it comes to vaccine hesitancy. Jarrett et al. (2015) assessed certain strategies that had been implemented around the globe to improve vaccination rates and was meant to build upon the foundation of studies identifying factors that influence vaccine hesitancy. This assessment was done in conjunction with SAGE on vaccine hesitancy. Gostin (2015) addresses the use of vaccine programs in Pakistan by the CIA to

conduct intelligence collection, which led to public backlash, fear, and a decline in polio eradication.

Though Gostin's study was conducted in Pakistan, it shows the importance of considering the political and global context when it comes to vaccine decision-making. Understanding the research that has been conducted worldwide emphasizes the various cultural contexts that exist. It highlights how strategies to improve vaccine uptake cannot be used unilaterally across all contexts, as they may not be as effective.

Previous vaccine research sets the foundation of the research that was conducted during the COVID pandemic. However, this research lacks the context of the immediacy and urgency of a global pandemic, and how vaccine hesitancy is impacted by such factors. This research also did not have as many Norwegian focused studies, which became more prevalent during COVID. In 2019, the World Health Organization stated that vaccine hesitancy was one of the top global threats (WHO, 2019). In the same year, the COVID pandemic began, confirming the need for vaccinations and to address vaccine hesitancy. It also led to a plethora of vaccine hesitancy research, which will be covered in the following section.

2.3 COVID-19 Research

This section builds off the definition of vaccine hesitancy in 2.1 and previous vaccine research discussed in 2.2. This section is more specific in uncovering the research conducted during the COVID pandemic and vaccine hesitancy in the specific factors influencing vaccine hesitancy during the tumultuous time.

Previous COVID research, mostly conducted from 2020 to 2022, has uncovered a multitude of factors that influence vaccine hesitancy within the context of the pandemic (Bullock, Lane, & Shults, 2022). The speed at which the vaccine was developed, along with the newness of the disease itself, had many people in the United States feeling unease towards being vaccinated (Chou & Budenz, 2020). Although this context focused on the United States, it can be reasonably assumed that people in other countries would have similar misgivings. Multiple representative surveys were conducted in countries such as the United States (i.e., Chou & Budenz, 2020), and similar results were found (Troiano & Nardi, 2021).

According to Chou and Budenz (2020) alongside the distrust towards the speed of the vaccination, there were worries about the politicization of the vaccine and distrust in vaccine

manufacturers themselves. Chou and Budenz state that, from a public health standpoint, this is a problem due to the need for herd immunity in order to have protection from the illness. The pandemic itself heightened emotional responses such as fear and grief, which can affect behavior and feelings towards vaccinations. This allows for vaccine disinformation to come into conversations and impact vaccine behaviors (Chou & Budenz, 2020). Specifically, anti-vaccination websites often use testimonials from parents and 'experts' in order to promote their ideologies, along with claiming the dangers of a disease are overstated and/or irrelevant (Bean, 2011).

In 2021, a group of researchers wrote a call to action to uncouple the politics from vaccinations, citing that the political polarization of recent days is harming community health (Sharfstein, et al. 2021). This call to action comes from the Baylor College of Medicine, which is a United States University in Texas, part of Texas' medical center. Politics entering healthcare, especially during a pandemic, leads to a decline of community health, which is extremely dangerous. This is not helped by vaccine distrust and politicians who are against the vaccine, which have been seen in countries such as the United States and Brazil (Fonseca, et al., 2021), but not as much seen in Norway. As of 2021, media trust in the United States was at a low of 36%, with 68% of Democrats trusting media against 11 percent of Republicans (Brenan, 2021). This shows a distinct difference in political trust and has strong implications for political choice and media usage affecting vaccination rates, whereas in Norway it is a high trust environment and people might be less likely to accept news on social media over traditional media (Elvestad, Phillips, & Feuerstein, 2017).

Media consumption is an ever-growing arena of politics and social interactions. Social media specifically has become a widely accessed news source, especially in the United States (Levy, 2020). As of 2019, the majority of US adults, specifically over 70 percent, obtained their news from social media. News consumption has changed drastically due to the introduction of social media, and social media often curates a feed based on algorithmic data (Levy, 2020). Compared with the United States, Norway having a high trust in traditional media and government contrasts sharply.

Mass media, though having structures in place to prevent misinformation, did spread vaccine misinformation during the COVID pandemic (Verma et al., 2022). The internet has become a source of health information along with close social relationships, such as familial relationships

(Verma et al., 2022). As found in previous research, the internet has become a tool to search for vaccine information (Kata, 2010; Verma et al., 2022). Verma et al., (2022) found that age was a significant factor for positive trust in mass media, with older populations being more likely to trust mass media, along with higher education levels, and factual knowledge about the COVID illness. The study claimed that since mass media played an important role in vaccine information, there is a need to diversify the framing and delivery of messages to target populations with lower trust (Verma et al., 2022).

The impact of vaccine hesitancy on store workers during COVID has also been studied, in order to assess links between workplace safety measures and vaccine hesitancy (Mayer et al., 2022). This study used the framework of the 3 Cs of vaccine hesitancy in order to conduct research. Factors that were discussed by Troiano and Nardi (2021) were supported in the findings, such as gender being a determinant, along with age, with women and younger individuals being more hesitant. There were also higher instances of vaccine hesitancy among those who felt like their workplace was taking decent precautions against COVID (Mayer et al., 2022). This could be linked to trust in workplace structures outweighing trust in the structures providing the vaccinations.

A study from 2021 conducted by Troiano and Nardi was an extensive literature search and reviewed fifteen publications. The vast majority of these studies were surveys or questionnaires. There were certain demographic factors found by Troiano and Nardi (2021) that were correlated to vaccine acceptance or refusal. Among these were ethnicity, politics, and gender. Though there were correlations between certain factors, some of the studies did have conflicting results. This could be due to the country of study, which emphasizes the importance of the context of vaccine refusal and structures, or due to the structure of questioning. Troiano and Nardi determine in their study that there are three independent influences: low age, high concern, and no difference between previous infection and non-infected. Risk perception is an important factor to consider with vaccine hesitancy, and with youth who are generally healthy, there is not a high perceived risk.

As Troiano and Nardi state, vaccine hesitant individuals may be fully vaccinated but host concerns, while others deny some vaccines and take others, and some deny all vaccinations (2021). During COVID 19, along with common refusers of vaccines, there was a large number of people who were concerned over the safety and efficiency of the vaccine, especially in the

United States (Troiano & Nardi, 2021). Age of participants is also an indicator of potential vaccine hesitancy. In one study, the younger demographics of the survey had low eagerness to take a potential COVID vaccine, while older demographics were more likely to be positive towards vaccination (Bullock, Lane, & Shults, 2022). This survey was conducted in March of 2021, which was after the COVID vaccination became available, but before it was widely distributed.

Turning back to the extensive literature review, Troiano and Nardi found that the common reasons for denying the COVID vaccine were the following: general vaccine distrust, safety concerns including speed of creation, doubting effectiveness, lack of trust, and "belief to be already immunized" (Troiano & Nardi, 2021, p. 250). These factors were reported by individuals before the widespread access to a COVID vaccination, and thus may have shifted after access to a vaccine has been made available.

2.3.1 Norway and COVID-19 Research

There have been previous studies concerning Norway and the COVID vaccine as well. In 2021, Ebrahimi et al. published their research concerning Norwegians and COVID vaccine hesitancy, conducting a study of 4,571 Norwegian participants. 10% of the participants stated that they were hesitant towards the COVID vaccine. They identified certain subgroups during their research that had correlation with vaccine hesitancy. These groups were male, rural, and parents of children under 18. This online survey they conducted gives good insight into the specific context of Norway and vaccine hesitancy, and the participants were surveyed multiple times for data collection. Using these categories adds context to the individuals interviewed during this thesis project.

Wollebæk et al. (2022) also focuses on the Norwegian context of vaccine refusal, and how it fits into the global context. According to Wollebæk's article, the female gender is a significant predictor to vaccine refusal and hesitancy in the Norwegian context, as they tend to have higher confidence and are more willing to get vaccinated. However, according to Troiano and Nardi (2021), who conducted a large screening of multiple international studies concerning COVID-19 vaccination factors, women were more likely to have a lower acceptance of vaccinations. This shows a direct conflict with Wollebæk's (2022) article and indicates Norway's relevance as a potential outlier.

The context of Norway as a potential outlier is important. A yearlong study found that 77% percent of Norwegians had high trust in the health authorities, while only 8% had low trust (Helsenorge, 2022). In some studies, Norway clashed with international study results (Wollebæk et al., 2022), showing the significance of country-specific in-depth studies. Understanding how these differences impact vaccine decision-making can help with health crises.

The vaccine response in Norway was also studied by Skjesol and Tritter (2022). The COVID vaccine provided free vaccines for the public, citizens and non-citizens alike. There was prioritization of individuals with health problems, and those higher in age, and over time, multiple vaccines were approved. The AstraZeneca vaccine approval was eventually revoked due to safety concerns. This study uncovered little vaccine hesitance in the general Norwegian population, and the communication from the government could be a defining factor in this (Skjesol & Tritter, 2022). However, comparing those born in Norway and those born outside of the country does uncover a significant vaccine uptake difference, with those born elsewhere being less likely to be inoculated against COVID. Regardless, Norway has had a positive outlook towards the COVID vaccine, and the acknowledgement of risk helped show transparency of government communication. Norway's COVID vaccination policies set it apart from other countries and are significant to study.

Another study that focused on Norway's context and vaccine hesitancy was Kour et al. (2022). This focus was on the experience of immigrant populations in Norway, and vaccine hesitancy in this population. It has been suggested that there are health consequences to immigrant communities around the globe, not just Norway, such as susceptibility to misinformation due to language and cultural barriers (Kour et al., 2022). Interviews were conducted with a wide range of immigrants in Norway and found that cultural communication can help reduce vaccine hesitancy. There was evidence that communication could help reduce complacency and raise confidence and convenience in order to encourage the necessity of vaccination (Kour et al., 2022).

Along with Kour et al.'s (2022) study on immigrants in Norway, there was a COVID study aimed at migrant populations in Oslo (Steinmetz, 2022). Norwegian sociodemographic factors have been studied in relation to COVID vaccine uptake (Steinmetz, 2022). A survey was conducted in 2021 for residents in eastern Oslo districts due to migrant populations in the area. It was found that age, being born outside of Norway, and economic status could be potential

indicators for vaccine hesitancy, with increasing age and income predicting lower hesitancy, while being born outside of Norway predicting higher hesitancy (Steinmetz, 2022). There was a suggestion that improving health literacy and communication could lower vaccine hesitancy that are caused by convenience barriers, as those born outside of Norway tended to have those barriers rather than confidence (Steinmetz, 2022). This ties into this study by emphasizing the variability of barriers within the Norwegian community and subcommunities, and the importance of trust and education.

In a comparative survey between Norway and Sweden on the attitudes towards certain policies and decisions made by the governments, there were some distinct differences (Helsingen et al., 2020). Sweden, at the beginning of the pandemic, used very lax policies in comparison to Norway and did not shut down schools and kindergartens. Norway, in contrast, did (Helsingen et al., 2020). Though these two societies have strong similarities between them in terms of socio-economic profiles, the approaches were distinctly different from one another. This is why it is important to analyze the context of a country when exploring vaccine hesitancy and trust in populations.

Research has uncovered a correlation between vaccine refusal and political ideology. Those who choose not to get vaccinated often vote for populist parties as well and vaccine hesitancy is associated with traditional right-wing beliefs (Wollebæk et al., 2022). Wollebæk et al (2022) attempt to disentangle partisanship, political orientation, and ideological constraints, as ideology is more consistent than the other two mentioned. This article was studied within the Norwegian context. What Wollebæk et al. (2022) found that vaccination habits can still be ascribed as political, even within the context of the Norwegian political system. The use of the 3 Cs in this article found that low confidence and high complacency was often found with those who refused the COVID vaccination. Although the populist party of Norway promotes vaccinations, those who would vote for them do not necessarily listen to them (Wollebæk et al., 2022).

Understanding the Norwegian context of COVID research, and COVID research in general, allows for a broader insight into context-specific areas of research. It also gives insight to what is known about Norway and vaccine hesitancy. This thesis underlines the importance of a country-specific study on vaccine hesitancy and the importance of context. The previous sections also gave insight into how the 3 Cs have been utilized throughout research. The following section will define the terms in more detail and give depth to the concepts for the thesis.

2.4 Incentives in Vaccine Research

The research on incentives in reducing vaccine hesitancy is not new but has also not been studied in-depth. Due to the incentives offered during COVID, much of the research revolves around the incentives offered in that specific context. When incentives have been mentioned in previous literature in terms of vaccine hesitancy, it is often in the context of financial incentives. This could be free vaccines or some sort of monetary gain based on the decision to be vaccinated. There is controversy about the effectiveness of monetary incentives on increasing vaccine behaviors (Campos-Mercade et al., 2021).

During COVID vaccine roll-out in the United States, some states offered financial incentives such as a lotteries and free food (Volpp & Cannuscio, 2021). For example, Krispy Kreme, a donut shop chain in the United States, was offering daily free donuts, and some universities were offering lottery scholarships (Volpp & Cannuscio, 2021). These are just a few examples of the financial incentives that were offered for taking the COVID vaccine.

In a study of youth in the United States, focusing on individuals between the ages of fifteen and twenty-four, they were aware of financial incentives, but many had qualms about the ethics and impact of said financial incentives (Hogan et al., 2022). They were found not to be a significant contributor to vaccine uptake by participants in this study, and some respondents were worried about the fairness of the incentives. This survey was conducted with open-ended questions via text, so extra context was able to be gleaned from the answers.

Norway was not a country that offered financial incentives. Vaccines for COVID were already free for people in the country. However, there was a study of financial incentives conducted in Sweden, where randomly chosen participants were given 200 SEK on the condition of receiving the COVID vaccine (Campos-Mercade et al., 2021). This study found that there was an increase of vaccine uptake with those who were given the financial incentives as compared to the control group. Though Norway and Sweden differ, there are some underlying social similarities.

What can be learned from these studies on financial incentives is that they are not impactful to all populations. Beyond just financial incentives, awareness of the cultural context is paramount for the effectiveness of incentives. In Campos-Mercade et al.'s 2021 study, there was a rise in vaccine uptake due to the incentive. In Acharya & Dhakal's 2021 study, it was found

that in Ohio, Maryland, Oregon, and Washington state, there was an overall increase in vaccine rates that could be attributed to incentives. However, they also found that in Arkansas, Kentucky, and West Virginia, there was no increase in vaccination. Even within the same country, cultural context influenced the effectiveness of vaccine uptake.

Financial incentives were not the only type of incentive discussed in vaccine literature. Volpp and Cannuscio (2021) discuss social incentives as well, such as contingent access to certain places such as restaurants, clubs, etc. These social incentives could potentially give a need to 'return to normal'. This could also include travel as contingent access. To be able to travel, multiple governments implemented a vaccine passport. Without that, there was no way to enter another country.

Another study discussed vaccine incentives based on three factors: prestige, conformist, and risk (Salali & Uysal, 2021). Prestige-based incentives refer to seeing someone who is an expert or high-level get vaccinated, such as a scientist or a celebrity. Risk-based incentives include seeing someone go through illness or death due to a disease. Conformist-based factors refers to the incentive to vaccinate based on people in a person's social circle being vaccinated themselves and is the most relevant to the incentives analyzed in this thesis (Salali & Uysal, 2021).

This study compared the effectiveness of these three incentives in the United States, the United Kingdom, and Turkey (Salali & Uysal, 2021). The most effective incentives found by Salali and Uysal were the vaccination of a scientist, friends and/or family being vaccinated, or someone passing away from COVID. The effectiveness of incentives can change based on the context, as they found Turkey had more hesitancy towards vaccines, yet the incentives were more effective (Salali & Uysal, 2021). In the context of Norway, the incentives that would work here could differ strongly from the ones in this study.

Though not always called incentives, other motivating factors for vaccine uptake have been mentioned in previous studies. Such factors included detailed information, information from trusted people in social circles, and the 'back to normal' mindset (Kour et al., 2022). The community context of vaccine hesitancy was important to immigrants in Norway and seeing someone from the same or similar background choosing to be vaccinated can be incentivizing (Kour et al., 2022).

Though incentive research has focused on financial incentives, there are a multitude of incentives that can be considered for vaccine decision-making. Social incentives, in the right

context, can be a deciding factor in inoculation. Understanding the importance of incentives in vaccine decision-making can help tailor health communication to certain contexts to improve vaccination rates.

2.5 The 3 Cs

The framework being used for this thesis are the three Cs of vaccine hesitancy as coined by the World Health Organization. These Cs are confidence, convenience, and complacency (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). There has been much vaccine research that included the framework of the 3 Cs, and some that have explored the theory using interviews (i.e., Kour et al., 2022). It has been found that the concepts that influence the 3 Cs often overlap (Kour et al., 2022).

There have been suggested additions to the concept of the 3 Cs, specifically for COVID vaccine hesitancy. A proposed addition to the 3 Cs were the concepts of communications and context (Razai et al., 2021). This proposed method of 5 Cs of vaccine hesitancy addresses some concepts that some felt to be missing from the original proposal of 3 Cs. Context would address the socio-demographic characteristics of vaccine hesitancy, such as linguistics and culture. This could include sub-cultures in communities and specific timeframes (Razai et al., 2021). Communication would address what sources provide vaccine information and misinformation and how they are accessed and interacted with (Razai et al., 2021). I chose not to add these two concepts due to these concepts being addressed throughout the thesis without this expanded framework. The concepts are mentioned, just not as additions to the 3 Cs.

Some studies have found that one or two of the 3 Cs have been relevant in certain situations. One example is Mayer's et al. (2022) study of frontline workers in the United States and vaccine hesitancy. This study found that convenience and confidence were more significant than complacency. My interest in this theory lies mainly within confidence, due to its close relation to trust, but all aspects of the 3 Cs will be analyzed. Although all aspects were analyzed during this project, the focus remained on confidence and trust due to the overlap of the concepts and the data that was gained.

The timing of the SAGE group has been called into question as well. When the group was researching vaccine hesitancy, the timing of the project was a limitation (Schuster et al., 2015). At the time of the project, the term 'vaccine hesitancy' was only just starting to appear in

literature, and the research exposed multiple gaps of knowledge (Schuster et al., 2015). Wollebæk et al. (2022) also critiques the 3 Cs. Although this literature relied on the original framework of the 3 Cs, they deviated from previous literature by treating hesitancy and refusal as not on a two-point scale, as to address different background factors such as political leanings and health (Wollebæk et al., 2022).

Though these critiques address important points, the beginning of the analysis will stay with the original 3 Cs of vaccine hesitancy (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015) due to the testing and history behind the original three concepts. As the term vaccine hesitancy was further explored and contextual barriers were explored, it is the belief of Schuster and colleagues that the 3 Cs have been in constant development (Schuster et al., 2015). The second half of the analysis will explore the concepts brought up during the interview process that did not fit into any of the categories.

2.5.1 Complacency

The first of the Cs to cover in this thesis is complacency. Complacency refers to how individuals perceive specific conditions of the risk of an illness, such as the perceived danger of COVID versus the perceived danger of the vaccine for that illness (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). This could be the fear they have for an illness or for a vaccine. How dangerous is COVID perceived by individuals, and to others? These are questions that can be asked to assess an individual's level of complacency with an illness, and in this context specifically, COVID-19.

Higher complacency barriers lead to a higher likelihood of not being vaccinated, while lower complacency leads to higher rates of vaccinations. If people do not perceive the illness as relevant or dangerous, they will be more likely to not be vaccinated. As stated before, risk perception is an important aspect of vaccine uptake, and those who perceive themselves to be healthy and suffer less consequences of a disease are less likely to be vaccinated (Troiano & Nardi, 2021).

Complacency is also affected by the responsibilities a person has that can be conflicting with a vaccine at a certain moment (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). For example, if an individual planned to make a vaccine appointment but it interfered

with scheduling, they may not choose to be vaccinated if they find the other appointment to be more important.

Due to vaccine uptake, diseases have been disappearing from many societies, leading people to believe less in the necessity of vaccinations (Steens et al., 2020). This is an example of complacency, leading to vaccine hesitancy and lack of inoculation. In this context, the perception of risk is how an individual defines the risk of a disease to themselves, or to their community. This can be observed in an interview by asking the participants to rate the danger of a disease to themselves. However, not all studies have found a link between perceived risk and vaccine hesitancy in certain populations (Mayer et al., 2022).

In an article focused on the factors that lower vaccine hesitancy among Norwegian immigrants, in order to lower complacency, there were a few suggested topics (Kour et al., 2022). Effective cultural communication and community vaccine advocacy were two of these options. Although these suggestions were in line with decreasing complacency, the overall effect has the potential to influence each of the 3 Cs. Community representatives providing information can also help lower complacency due to the trust people have in community actors (Kour et al., 2022).

As mentioned previously, Steinmetz's research (2022) found that confidence and complacency barriers were the most commonly found when it came to vaccine hesitancy. Although there were low hesitancy rates in Norway, multiple participants believed that they were not at risk of getting COVID or lacked the need for inoculation against COVID (Steinmetz, 2022).

In this study, complacency barriers rise from perception of risk, such as how dangerous a disease will be to a person. It also includes how dangerous a potential vaccine will be against the perceived risk of an illness. These barriers to complacency are factors that raise complacency in individuals.

2.5.2 Convenience

Convenience is the concept of vaccine hesitancy that refers to the availability and access of a vaccine (Troiano & Nardi, 2021). Access can be seen through the availability of a vaccine, the time it takes to get a vaccine, and the cost of a vaccine. Along with these factors, convenience can also be influenced by the appeal of vaccine centers, health literacy, and potential language

barriers (Kour et al., 2022). These factors are often influenced by socio-economic situations, such as access to a car, work restrictions, and availability of doctors. This can be assessed in interviews by asking about circumstances that would lead to less convenience, asking about established convenience, and what could be changed in order to establish easier access to vaccinations.

Along with this, convenience is also understood as the social acceptability of taking a vaccine. This is also known as the 'norm' of taking the vaccine (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). This includes the popularity of the vaccine in a larger society and social group's acceptance of a vaccine.

Norway has a history of large-scale vaccination programs that are offered for free to school children, along with having high vaccination rates (Feiring et al., 2015). The COVID vaccination was also offered for free to the entire Norwegian population (Norwegian Institute of Public Health, 2023). I believe that this shows that convenience will not be a large impacting factor when it comes to the decisions of Norwegian citizens to take the COVID vaccine, compared to the other two factors. However, there are some socio-economic impacts in Norway that could still affect convenience and the decision to be vaccinated (Feiring et al., 2015), so it is still important to seek for this factor. These factors are geographical distance from vaccine centers, reduced opportunities in education, and lack of funds.

In this study, convenience barriers are understood generally as accessibility and availability barriers. This includes geographical barriers, affordability, and ability to understand vaccine information. If the information is not understandable to a larger population, it cannot be understood as convenient.

2.5.3 Confidence

This last C within the scope of the 3 Cs of vaccine hesitancy is the concept of confidence. This includes confidence within the vaccine themselves, confidence in the system that makes and distributes vaccines, and confidence in the motivations of those promoting the vaccine (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). This ties into the trust people have for the government, healthcare systems, and the actual vaccine. This can be assessed by asking about people's confidence in different government systems, healthcare, and the vaccine separately. This can also be impacted by trust in other systems, and conflicting

confidence can challenge vaccine acceptance and hesitancy. For example, confidence in media, which says to get vaccinated, but lack of confidence in a government that says the same can impact the decision-making process.

Through analysis and studying of previous research, confidence barriers are one aspect of the 3 Cs that most often shows up as a reason for vaccine acceptance or hesitancy. This concept refers to the trust in vaccines, vaccine manufacturers, and those that recommend a vaccination (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). This is particularly important due to the Norwegian context of the project. Norway has a high vaccination rate along with a high trust in government at 77 percent in 2021 (OECD, 2022), and there is the potential for collaboration between government and health structures lowering confidence barriers for vaccine hesitancy (Kour et al., 2022). The aspect of confidence addresses the research questions for this project. Testing for confidence in different structures in Norway is important to understanding the multiple parties influencing people's trust in vaccines.

This concept ties in well with the next framework used during this thesis, which is trust. Though the terms trust and confidence are similar, there are key differences between the two that are essential to understanding each concept in full and will be analyzed separately. Oftentimes, confidence is explained as the trust that people have in the vaccine, the health professionals, and decision-makers (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). Though trust is used in the definition for confidence, the framework of trust is separate and should be analyzed separately. This will be expanded on more in section 2.6, which elaborates on trust literature.

In this study, confidence barriers are understood as factors that influence trust in the vaccine and the system. After conducting the literature review and designing the interview guide, I decided to make the focus of the 3 Cs of vaccine hesitancy the barrier of confidence. In previous research as well, confidence was found as a significant barrier to students when it came to taking the COVID vaccine because of risk concerns (Sadaqat et al., 2021). Due to the similarities between confidence and trust, along with intrigue over the potential answers, the majority of questions revolve around confidence and trust.

2.6 Trust

Trust is another aspect that is similar to confidence, although it has a separate definition and focuses more on a communicative aspect. Trust differs from confidence in that trust is an action with prior engagement, while confidence requires no previous thought behind an action (Mayer et al., 1995). Trust is a strong component when it comes to the handling of health crises and specifically pandemics and tends to be "future-oriented" (Hedenigg, 2021, p. 2). It has also been used in previous health research (e.g., Meyer, Ward, Coveney, & Rogers, 2008). Historically, Norwegians have had a high level of trust in their government and media (Brennan, 2021) and much literature uses the framework of the 3 Cs. Therefore, exploring both the 3 Cs and trust can help better understand vaccine hesitancy in this population.

Luhmann's theory of trust addresses two different types of trust. These are personal trust and system trust (Morgner, 2018) with system trust being the most relevant to the project. In this theory of trust, a trustor explicitly acknowledges the potential for being let down by the other party (Guy, 2019).

The definition of trust that is used in this paper is the same as in Mayer et al.'s (1995) article on trust, which is as follows:

> The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party. (Mayer et al., 1995; p. 712)

This work, though from 1995, helps set the framework for trust in communication articles in current research. It is a solid definition that helps contrast the concept of trust to confidence while still allowing them to work well together in a research setting. Trust has been researched in the context of vaccine acceptance during COVID. Transparent communication of the risk of the vaccine was found to improve trust but lower vaccine acceptance (Petersen et al., 2021). Transparent communication, although it does not reduce vaccine skepticism, it does help sustain trust (Petersen et al., 2021).

Hedenigg wrote about a concept known as 'dugnad,' which is "common action embedded in the moral concept of the 'responsible citizen'" (Hedenigg, 2021; p. 2). This collective effort is based on trust in structures of government, but also on trust on an interpersonal level. This concept addresses the importance of trust, but also convenience of individuals when it comes to the decision to be vaccinated.

The COVID pandemic was an indicator of the importance of trust that current political systems need (Offerdal, Just, & Ihlen, 2021). In Norway, the public health institutions had levels of trust already established before the pandemic, with 60% of Norwegians saying that they have a positive view of the Department of Health (Offerdal, et al., 2021). Due to this, Offerdal, Just, and Ihlen state that the maintenance of trust was the primary effort of the health institutions in Norway, versus having to build trust during the pandemic. This is supported by Petersen et al. (2021) as well, as they found an important predictor of vaccine hesitancy was the difference between the Danish and US citizens when it came to "political cynicism". This shows the importance of how people view political systems and public health.

For example, Norway is a media welfare state and has one of the highest newspaper consumption rates (Syvertsen, Enli, Mjøs, & Moe, 2014) along with a high level of trust in the state-owned news (Burrell, 2022). There is a long history of free press and media literacy in Norway, and while there used to be official ties with media sources and political parties, these do not exist on the same scale in modern days (Syvertsen et al., 2014). The public broadcasting entity in Norway is NRK and tends to be viewed by the Norwegian public as unbiased with a trust rate of 67%, which would imply less distrust in mainstream media contributing to vaccine hesitancy (Burrell, 2022).

As Petersen et al (2021) states, "many countries already face the challenge of distrust-based skepticism of the vaccines". Trust and communication are essential to understanding the COVID pandemic and vaccine hesitancy. This idea of trust intertwines with vaccine uptake and hesitancy. Norway improved trust during the COVID pandemic due to their sharing of risk factors and acknowledgement of the dangers of the AstraZeneca vaccine, although it slowed the COVID vaccine administration (Skjesol & Tritter, 2022).

Though Skjesol and Tritter's study (2022) did not find a reduction in vaccine uptake after sharing negative safety information, another study has. Petersen et al. (2021) found that negative information about vaccines shared by governments decreases acceptance of vaccines. This transparency, however, while having an immediate cost to vaccination rates, does improve trust towards government (Petersen et al., 2021). This was consistent in United States and Denmark participants. There is an incentive for governments to not disclose information during such tumultuous times, in order to promote public health. However, Petersen et al. found that vague communication was seen as a cover for negative vaccine information, and lowered trust. Vague

but positive communication did not have a demonstrated positive effect on vaccine uptake and led to an increase in distrust (Petersen et al., 2021). This research by Petersen et al. (2021) called for use of transparent communication by health communicators in order to improve long term trust, because of the importance that trust plays in a health crisis situation.

Trust during health crises is important, because those with anti-government views and lack of trust in the government are more likely to be vaccine hesitant (Hassen, Welde, & Menebo, 2022; Verma et al., 2022). During the COVID pandemic, public trust had played a crucial role, and understanding the role that trust plays is an important part of disentangling the role of trust in vaccine hesitancy (Verma et al., 2022).

In the confidence section 2.5.3, the role of trust came up within the definition. Although there is an overlap between trust and confidence, I do believe they have different analytical purposes in this study. Trust, as defined by this thesis, requires an active decision being made by the trustor to the trustee, with knowledge that the trust can be misplaced (Mayer et al., 1995; Guy, 2019). Confidence does not have this same requirement.

2.7 Summary

Understanding the definition of vaccine hesitancy is essential to understanding the literature around vaccine hesitancy. During sections 2.4 and 2.5, vaccine hesitancy is woven within the literature, both with the pre-COVID literature and COVID literature. Though some research does come from before the widespread use of the term “vaccine hesitancy”, it is easily tied into the previous literature that helped build the foundation for future vaccine hesitancy research. Understanding the context of Norwegian COVID literature is also important, due to the project being an extension of this research.

The 3 Cs of vaccine hesitancy, confidence, complacency, and convenience also helped guide the literature used in the project. The framework of the theory has been found in much vaccine research since the conceptualization of the theory by the SAGE Working Group on Vaccine Hesitancy (2015). It was also within much of COVID vaccine hesitancy research, along with the concept of trust. Trust is also important for understanding vaccine hesitancy. These two frameworks, the 3 Cs and trust, together allow for a deeper insight to the data due to the importance both have.

As stated earlier, trust overlaps with confidence from the 3 Cs and using both terms allowed for deeper insight into how trust and confidence affect vaccine hesitancy. However, after seeing the data collected, these two frameworks were not enough to investigate the data gained from the participants. Because of this, I engaged with literature on incentives to shape the context of some vaccine decision-making reasons.

The section on Norwegian COVID studies allows for the thesis to focus on the research it will be adding to and growing on. It narrowed the focus from the broader vaccine hesitancy research and COVID research to specific contextual research that will be addressed throughout the project.

Literature and research from before the pandemic help to shape the history of vaccine hesitancy, while addressing overarching themes of vaccine research. This includes the formation of the 3 Cs of vaccine hesitancy, along with indicators of hesitancy and the effect of social media. Using this as a wide area of study in order to narrow focus onto COVID research allows us to take this history and focus on the context of COVID.

3 Method

3.1 Introduction

This is a study built on 20 interviews with people chosen through a semi-snowballed process. This method section starts with an introduction to the overall method used during the project. It begins with explaining the purpose of the methods and how the method helped answer the research questions. It then moves into a section on the interviews themselves, explaining the process behind the development of the interview guide and the number of interviews conducted. This section also includes the length of the interviews. This study is not meant to be a representative study, but still gives interest, context, and information on vaccine decision-making for Norwegians.

Following this is the coding and analysis section, which goes into the process taken to analyze the data collected during the project. It explains how the quotes were separated and coded into categories to analyze. Along with this were the strengths and limitations of the process taken. After this section is a demographic section, which gives an overview of the demographics of the participants that partook in the study. The last sections in the method section address research ethics and validity and reliability, respectively.

The data collected was analyzed to find answers to the research questions. By building the interview guide around previous research and sectioning it into specific categories, this method helps answer research question one. The guide focused on what the role of the 3 Cs and trust play when it comes to vaccine hesitancy in Norwegians.

The interviews were performed by me and were conducted in English. None of the participants had English as a first language, which could lead to some language barrier problems. Though the participants had a strong grasp on the English language, there is always the chance that there were misunderstandings of the questions. During the interviews, there were instances of participants not remembering a word in English, and these answers were omitted in order for best understanding and representation of answers.

3.2 Interviews

To answer the research questions of this thesis, I chose a qualitative approach to the data. This approach is characterized by the use of qualitative, in-depth interviews. The interviews followed questions from the guide that I have created (Appendix A). However, the interviews

were not structured interviews, but rather semi-structured. Overall, the interviews followed a guideline of questions, sectioned into specific categories to make analysis easier after transcription. A copy of the interview guide is attached in the appendices. Throughout the interviews, the guide was updated in order to collect information more accurately from the participants, and some follow-up interviews were conducted.

This project utilized a non-discriminative snowballed sampling method. The use of semi-structured, snowballed interviews helped with gaining a large amount of data that can be used to help understanding vaccine behaviors in Norway. I interviewed twenty individuals from Norway of varying demographics in order to find commonalities and differences in vaccine hesitancy and acceptance factors. I found the interview subjects through use of my network and expanded through their networks. Through interviews and the structure of the interview guide, I analyzed and compared qualitative data in order to answer the research questions.

As mentioned in the literature review, the interview guide for this project was developed based on the survey tool used in Larson's 2014 article. This article assessed framework used in articles from 2007-2012 in order to create a strong framework of assessing vaccine hesitancy and was divided into multiple sections based on the 3 Cs framework (Larson et al., 2014) in order to categorize answers to specific sections. I chose specific questions in regard to the context of this paper and the focus on confidence, and tailoring questions both broadly and to the COVID pandemic specifically. Previous vaccine hesitancy interviews have been conducted in a similar way (e.g., Dubé et al., 2014) using semi-structured interviews along with causal determinants.

The interview guide has been sectioned into categories based on the framework used in this project, confidence, convenience, and complacency. As mentioned before, this is for analysis reasons to better analyze the data collected. Although the categories are covered in a specific order, there will still be room for open-ended questions, and is not required to stay exactly on the path. I found during the interview process that the structure allowed people to gather their thoughts and answer in a coherent method. The use of open-ended questions and probing questions, specifically "can you elaborate more on that?" allowed for the interviewee to go into more depth on their answers and elaborate beyond the scope of the original question.

Due to the semi-structured format, multiple participants were asked questions that were not on the interview guide due to interest in certain topics. For example, one participant was asked about her experience with the HPV vaccine as she had mentioned it in an earlier context. Due to

her history in this regard, I asked for further details. Another example is of one participant who I asked about why the idea of social responsibility was so important to them, because it was one of the factors they mentioned when asked what encouraged them to take the COVID vaccine. Building questions from answers given allowed for more dynamic interviews.

The interviews have been numbered with a randomizer and will be referenced as Respondent 1, Respondent 2, etc. This will allow a synthesization of the viewpoints of specific interviewees to be seen throughout the analysis section. However, other than gender and approximate age range, the respondent key will not be identified with the demographic information that was collected during the interviews.

3.3 Data Analysis

The analysis of this thesis was performed by using coding of the interview material. Taking the data from the interview transcriptions, I found common themes across multiple interviews. Since the interview guide had been set up in a way that generally followed the path of the 3 Cs, it added a level of simplicity to compare the data from the interviews.

There were two ways I analyzed the data. The first was through comparing given answers to the planned questions. The answers to the questions were copied into a separate document for comparison, with the reference to the respondent included. After the data was in the separate document, I analyzed similar themes that would occur or themes that contrasted, in order to categorize answers. However, since the interviews were semi-structured, the flow of the interviews did differ from one another, which leads to my second form of analysis.

The second form of analysis was through the searching of keywords. For themes that came up that were unexpected, such as women's health concerns and travel, this was not accounted for in the semi-structured interview guide. However, it was mentioned by multiple participants. In order to analyze this data, I did keyword search in the transcriptions, and like with the question-coding analysis, put the relevant data into a separate document for comparison. I looked for recurring patterns and topics between the participants, along with keywords. Such keywords included government, speed, choice, and women's health, among others. Certain answers were moved into more than one category based on the dialogue contained within them. For example, if a participant were to mention government during a question on vaccine safety, then it would be coded into government and vaccine safety. These were put as sub-categories within the larger

theoretical themes. Each answer given, whether a sentence or paragraph, was coded into a subcategory based on the content of the answer given and the question asked.

As mentioned before, the interview guide was set up in such a way that the framework process was done faster, as the questionnaire was separated into the 3 Cs categories. This was done by having the questions divided into the 3 Cs categories in the transcription documents and interview guide.

Using this method to analyze the data, it was easy and effective to categorize data and find themes that cropped up multiple times during the interviews. It also made it effective to compare it to the previous research listed in the literature section. By being able to line up questions and quotes from each participant, it made it possible to easily compare answers and find topics that appeared multiple times. One disadvantage of this method was that multiple answers overlapped into different sections of frames, and it was difficult to keep some statements in only one category.

The interview guide has been sectioned into categories based on the framework used in this project- confidence, convenience, and complacency. As mentioned before, this is for analysis reasons to better analyze the data collected. Although the categories are covered in a specific order, there will still be room for open-ended questions, and it is not required to stay exactly on the path. I found during the interview process that the structure allowed people to gather their thoughts and answer in a coherent method. The use of open-ended questions and probing questions, specifically “can you elaborate more on that?” allowed for the interviewee to go into more depth on their answers and elaborate beyond the scope of the original question. This is what also led to the shift to a broader perspective on barriers and incentives in regards to vaccine hesitancy.

The first round of interviews I conducted were from January to May of 2023, after a vast majority of the Norwegian population had been vaccinated against COVID. A second round of interviews was conducted in July and August of 2023. Most of the interviews were between 35 to 45 minutes long, with the longest being 57 minutes and the shortest being 28 minutes. The average length of interview, not including follow-up interviews, was 40 minutes. One person requested a follow up interview, as she wanted to add more context to her original answers from the first interview.

This thesis project was carried out by conducting interviews with Norwegian citizens. Since I do not speak Norwegian, there were times during the interviews that misunderstandings occurred, or a word was forgotten in English. This could have led to the meaning from the interviewee being lost in translation. However, this did not seem to be the case with the interviews I conducted, as we would work out the meaning together.

3.4 Demographics

Though the interviews and analysis are not generalizable to the general Norwegian public, there were a wide variety of individuals interviewed through this project. The recruitment process started with my personal circle. I asked those I knew if they would be interested in being a part of the project. This included friends, classmates, coworkers, amongst others. I did snowball sample from these connections to a wider population of participants. This took my project away from personal connections to individuals I was unaffiliated with. Having close contacts in the project was both a help and a limitation. It limited the scope of the interviewees in the project, potentially leading to similar views. It was a help because my connections were more willing to be in the project, while there was some hesitation from people recommended to the study.

Each participant was treated with the same ethical consideration. Each interview was conducted privately with the same semi-structured questionnaire, and all participants signed a consent form before participating in the project. I do not believe any personal connection with the interviewees affected their answers in the project.

Part of the process was asking demographic questions, and as follows, there will be a statistical breakdown of this data collected. There was a total of twenty participants in this study, with all being Norwegian and most from the Oslo area. Thirteen of the participants were interviewed between February and May of 2023, and seven were interviewed between July and September of 2023. This allowed for insight into if answers varied based on the timeframe, which was not the case. Though the selection is smaller, it allowed for a deeper analysis of data collected and more in-depth interviews for participants.

In terms of gender, eleven participants identified as women, eight identified as men, and one identified as non-binary. As noted in previous studies, gender is an important indicator of potential vaccine hesitancy (e.g., Wollebæk et al., 2022; Troiano & Nardi, 2021). However, there

are contextual implications of this indicator. As mentioned before, in the Norwegian context, women are less likely to be hesitant, while in a global context, women are more likely to be hesitant. There was a higher representation of women in this study than men.

The ages of the participants varied between 21 and 62 years of age. This is on the younger side of the population, made older by outliers in the study. Most of the participants were in their twenties, with nine of them being in that age range, but there were also a few in their thirties and forties, fifties, and one in her sixties.

The most common occupation of the participants was student. There were some participants who either work in health care or had worked in health care previously. There was a lean towards younger, educated populations during the interviews. Many of the participants, although students, did have part time work outside of university. Two of the participants were lawyers, and some worked in business.

Most participants had at least some university level education. There were three participants with no previous degrees, nine respondents currently completing degrees, two with bachelor's degrees, five with master's level education, and one with PhD level education. Some of those who had no university level education still had gone to school for apprenticeship education and certifications.

All participants in the study were Norwegian and had lived in the country for over ten years if they immigrated from another country. Though some had immigrated from other countries, only one participant identified as an immigrant.

Concerning political demographics, only one interview participant chose not to vote in the last national election, and another was not able to vote. The political views of the participants varied from Alliansen to Rødt. There were some individuals who had voted for parties that contrasted with their political views. One of the most common parties voted for by the participants was Venstre, a centrist party in Norway. With the participants, there was no 'majority' party, as most parties had only one or two respondents who had voted for them. Other parties that were voted for were the SV party, the socialist left party, MGD, the Green party, and the Rødt party, a communist party. One participant had voted for the Center party, and one had voted for Alliansen. There were a few who voted for Høyre, which was the leading party at the time of the pandemic.

Alliansen is a politically 'fringe' party in Norway, known for extreme right viewpoints and support of Trump (Breivik & Myhre, 2017). MDG is the Green Party, which is a center left party focusing on environmental policies. Few of the participants voted for the major political parties, such as Arbeiderpartiet, the Labor Party, or Høyre, the Right Party.

The majority of participants mentioned 'left' when asked to describe their political views, whether moderate-left or firmly left, but there were participants who described themselves as politically right-wing.

Although the number of participants was low, there was a wide variety of individuals who participated in the project, giving a wide range of opinions and viewpoints. Though some demographics appeared more often than others, such as students, there still are contrasting and interesting viewpoints while not being representative.

3.5 Research Ethics

All interviews would be conducted with adults over the age of 18 years, and all identifying information would not be used while referencing them. Each interview and reference were done with the consent of the interviewee. It would also be important for me to stay objective and open to the interviewees, regardless of my views on the matter. I have opinions on the matter of being vaccinated and have myself been vaccinated for COVID-19. However, I will not allow this to shape the way I interact and interview those who participate. Following UiO's ethics guidelines of honesty, accountability, and competency will be the baseline of my ethical understanding. Also, I made sure to apply to be able to conduct interviews, thereby agreeing to the University's standards.

Before the interviews began, there was an informed consent form each participant would have to sign. I stored the data from the interview, which included notes and a recording for each subject, on an encrypted server through TSD, and not on a 'cloud' service. All information was anonymized. There was a way to revoke consent by contacting me via email, which would allow me to remove all information referring to that subject from my thesis. I have also made sure to fill out the forms that are required of me when working with personal information and conducting interviews.

Ethical approval was given by Norsk Senter for Forskingsdata (henceforth NSD). The project plan was sent along with the data that would be collected during the research process, and

the thesis project was approved by NSD. There were subsequent changes to certain data that was collected, namely the type of participants, and the information was updated and sent to NSD, who approved the reworked project again.

The interview audio taken was then uploaded to UiO's TSD server, which is used to store private and encrypted information, and each audio was assigned a random number, and any personal information about the individual connected to the audio was on a separate, encrypted document. After the end of the project, the data was deleted in compliance with the current rules on storage of personal data.

The purpose of the interviews is to answer these research questions stated previously, and to gain insight into what factors affect personal vaccination choices. By interviewing citizens of Norway of different mindsets surrounding vaccinations, there can be a deeper analysis into what concepts stay similar, and which ones differ. This can lead to an in-depth analysis of intra-country differences and similarities and opens the possibility to a larger-scale study within a single country, or beyond a singular country.

Though this data from this project cannot be generalized to a population, the information being collected is still important. It has the potential to act as a stepping stone to future research and unearth some potential factors that affect individuals when it comes to vaccine hesitancy and vaccine acceptance. It also addresses the Norwegian context, without being a representative study. On its own, this project added value to the field of research into the 3 Cs of vaccine hesitancy. The creation of an interview guide, along with allowing participants to help guide their own interviews, allowed for interesting concepts to be brought to light.

When transcribing the interviews, I found that some of the statements were difficult to understand. Because of this, some quotes used in the thesis have been edited for clarity by removing filler words such as "um", "like", and "uh", along with repeated phrases, as well as putting in the correct word when there was a time where the respondent was not sure of the English word. This is to make the quotes have more clarity for the reader while properly representing the statements of the participants in this study. When the words have been corrected, they have been placed in brackets.

3.6 Validity and Reliability

The internal validity of this project is high, with the interviews helping to measure what was meant to be measured based on the proposed research questions. The interview guide was set up in a way that addresses the main factors that I am trying to answer with the interviews. The external validity, however, is not considered during this project, as it is not collecting results that can be generalized to a larger group. Due to the project being based on snowball interviews starting with personal contacts, there is somewhat of an overlap in the type of people who are interviewed. Though the selection was non-discriminative, and a variety of people were selected to be interviewed, it is not a random sampling, and as mentioned before, cannot be generalized to a whole population.

The reliability of this project is high, due to the interview guide. It has questions selected to assess the accuracy of answers, and due to it being semi-structured, I am able to ask probing questions to further dig for answers from the participants. This allows me to compare answers from the participants to find overarching trends and similar themes of focus throughout the interview, and the data is separated into categories based on the three Cs of vaccine hesitancy due to the format of the interview itself. These questions have been tested by others as well, as I built the interview guide based on previous research and did practice interviews in order to test the accuracy of the interviews. Also, through the interview process itself, the interview guide was tested.

4 Analysis

The structure of the analysis section starts with a breakdown of the 3 Cs of vaccine hesitancy in terms of the interviews and analyzing common factors and topics that are mentioned. The framework for sections was put into the interview guide, and therefore allowed for ease of comparing data from the participants.

Although the interview guide was created in a format to best analyze collected data, as it was separated into sections based on the 3 Cs, not every answer addressed the concept that it was intended to. Some questions have been spread across different sections, due to the answer that was given, rather than the hesitancy factor that was meant to be addressed.

During the initial analysis, I discovered that the wide breadth of data collected only got so far using the traditional framework of the 3 Cs and trust. This is when I decided to reformat the analysis and study the outlying factors as incentives, a concept meant to indicate the importance of factors that positively influence vaccine behaviors. Therefore, they 'bridge' the gap between the barriers of the 3 Cs.

The analysis starts with the 3 Cs section first, looking into complacency, convenience, and then confidence and how they were exhibited in the respondents. Following this is the section on trust, which analyzes trust towards media, government, and vaccine manufacturers. Lastly, 4.5 is the section on the concepts that influenced vaccine decision-making, analyzing the impact of these factors.

4.1 Complacency

As stated in the theory section, complacency is the concept of vaccine hesitancy relating to the perceived risk and consequences of an illness. It can also apply to the consequences and risks of a vaccine. This can be context specific, or it can be overarching. For the COVID vaccine, if someone were to perceive the virus as dangerous to themselves, they would be more likely to get vaccinated, whereas if they saw it as not dangerous, they would be less likely to get vaccinated. This can also depend on the perceived risk of the vaccination as well. This section addresses complacency factors among the interview participants.

4.1.1 Risk of Illness

Another factor of complacency is the fear surrounding the illness or vaccine. A study conducted in 2020 found that 58% of Norwegians perceived COVID as a large or very large threat to society (Helsingen et al., 2020). Since then, COVID vaccines were introduced, and the fear of illness may have changed. In order to observe potential complacency with the participants, I asked about their view towards the danger of COVID.

Most of the participants in the study were in their 20s and 30s and did not seem to find COVID to be a disease that was a threat to them. This was also found in a 2020 study, where only 2% to 3% of the population considered COVID as a dangerous disease to themselves personally, as compared to 53% believing COVID was dangerous to society (Helsingen et al., 2020). Among the participants of this thesis, there was a high level of complacency, where there was not a strong belief that they would be in danger if they were to catch COVID. Respondent 2 thought everyone should get recommended vaccines if possible and elaborated her own role to play in public health.

> I very rarely get vaccines for my own sake, as a young, healthy person. Even if I do get infected, I'll be ok. But there are very many that can't, and I believe that we should take care of those around us through herd immunity. (Respondent 2, February 2023)

Though she has high complacency regarding her own personal health, the health of others was a driving force in Respondent 2's vaccination habits.

As seen here, when asked to rank their personal risk in regard to COVID, most participants ranked it as low risk. However, when asked about society's risk, there were multiple respondents that ranked it much higher. Respondent 2 rated her own health risk as low, but her "risk of getting infected quite high, everybody was getting infected, but [I] wasn't afraid of getting infected. I thought I would be fine." In a study of grocery store workers, as mentioned earlier, the study found that complacency coming from a viewpoint of low risk was not a factor that they encountered in the study (Mayer et al., 2022).

Respondent 13 did have less complacency barriers than the other participants, however. When asked why she chose to get vaccinated, she responded that "in the beginning, when you heard a lot of people getting really sick, I didn't really want to get that sick, of course, so I was hoping for protection." However, after getting COVID twice, she chose not to get the booster shots. When seeing that COVID was not as dangerous as she perceived, she chose to not

continue getting vaccinated. As complacency barriers rise from perception of risk, and there is a belief that they will not suffer consequences of the sickness, complacency barriers arise (Troiano & Nardi, 2021).

Respondent 20 also found COVID to be a dangerous disease, though not to himself. The use of a vaccine helped reduce his perception of risk for himself. He positions the vaccine as a way to reduce risk of illness for himself and others.

> Yes, I do. Perhaps not as much for myself, but that's because I'm vaccinated now. Even in Norway, where the number of those who died from COVID has been relatively low, it still killed several people, so I do consider it dangerous. But thanks to the vaccine, not so much. (Respondent 20, September 2023)

Regardless of their lack of perceived personal risk, most participants were still vaccinated. Respondent 7, when ranking factors that influenced his choice to be vaccinated, mentioned social responsibility. "I have a deep feeling of, like, you know- that I want the society to run again, you know, that we get out of it. Social responsibility."

Social responsibility is not a barrier to vaccine hesitancy but is instead a way to remove a complacency barrier. Some respondents felt as though there was a responsibility to be vaccinated not for personal reasons, but for societal reasons. This is discussed further in the analysis section 4.5 on social responsibilities.

Complacency barriers stemming from low-risk perspectives were apparent in some of the dialogue. Some of the participants would mention being young, healthy, and did not seem to fear for themselves getting COVID. This could potentially be an indicator of low vaccination behaviors. However, due to the concept of social responsibility, this will be challenged later in the analysis.

4.1.2 Summary

The participants in the study showed a high level of complacency towards the COVID vaccine. Not many of the respondents found COVID to be a dangerous disease to them, which is in line with past studies as well (Helsingen et al., 2020). The purported factors given by the participants rarely included fear of disease. However, this did not stop the members from getting inoculated against COVID. Fear of the risk of illness for others did impact vaccine decision-making for multiple participants.

4.2 Convenience

As stated earlier in the theory chapter, convenience, in terms of vaccine hesitancy, refers to the accessibility of vaccines (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). It also refers to the convenience of having to take, or not take, the vaccine. All participants answered that the access to vaccines, and specifically the COVID vaccination, was easy. There were some differing views on whether the COVID vaccine was harder or easier to get compared to other vaccines, but overall, most did not have suggestions to make access to vaccines easier.

4.2.1 Accessibility

Access to the COVID vaccine was not considered a barrier to any of the respondents in the project. Each answered that access to vaccines in Norway is easy and accessible, with only Respondent 7 bringing up accessibility problems. “Early on, I actually thought that the government should have made information for people with different mother tongues, [because] that came kind of late [in the] COVID period”. Respondent 7 considers himself an immigrant to Norway, though he has lived in Norway for decades and is fluent in Norwegian and English, and this was his main problem with the communication from the Norwegian government, though not to himself.

This was found in previous studies as well. Kour et al. (2022) conducted a study on immigrants in Norway and found that a reported factor that could reduce vaccine hesitancy was effective communication in native languages. This was along with the desire for someone from the group to communicate the information to them, to adapt better to the culture (Kour et al., 2022).

Respondent 1 had a different view on the languages used to share vaccine information. “I remember that they had- when I went to the shopping center they had information sheets, like A4s in different languages. I don’t necessarily remember what languages it was, but it wasn’t Norwegian.” She found that there was information provided in multiple languages. Respondent 8 also felt that the information was shared in different languages, to the benefit of people who did not speak Norwegian. This contrasts with the views of not only Respondent 7, but also the findings of Kour et al.’s (2022) study. The question on the effectiveness of vaccine information

being shared in different languages should be addressed by the community said information is being aimed to.

Respondent 10, who is highly skeptical of the COVID vaccine and unvaccinated, acknowledged the ease to get the vaccine as well, when asked about how easy it was to get the COVID vaccine.

> I know people [during] lunch, they just walked across the street and got it. And I don't know how many vaccine centers- I live really- the closest bus stop is 10 kilometers from here. And driving to Oslo, I mean I passed what was it? Eight? Nine? Vaccine centers. So, it wouldn't have been a problem for me either. (Respondent 10, March 2023)

The accessibility of vaccines in Norway in general is not highly disputed. As stated before, there is a large-scale program for Norwegian children to be vaccinated in schools, which leads to a high rate of vaccinations, to allow for wide-spread access (Feiring et al., 2015). Some participants discussed their experience with the Norwegian vaccination program, and their exposure to vaccines at a young age. Respondent 1 was asked why she never had refused a vaccine and said the following:

> I just don't think that's even been an option especially as a child […] I think [at] school you were given a consent form. And obviously you could choose not to do it, but it's highly advised to do it and everyone was doing it. (Respondent 2, 2023)

So, although there was a choice, it was highly encouraged in her perspective. "People weren't questioning." This also ties into the concept of confidence and trust and leads into the next section of the analysis. However, this participant did not see the lack of questioning as a barrier, but rather a statement of fact.

4.2.2 Summary

Convenience barriers were not observed in this thesis to have a large impact on vaccine decision making. The general accessibility of vaccines in Norway was not seen as a barrier to most. During the COVID pandemic, multiple vaccine stands were placed so that there was ease of access to vaccines. The information was promoted in differing languages, though there was a concern about the lack of accessibility in languages, which could be explored in further studies. Making sure the information is communicated in relevant languages can help improve vaccine

rates. Overall, there were low barriers when it came to accessibility of the COVID vaccine, allowing for the participants to feel capable of getting the vaccine.

4.3 Confidence

Confidence, as defined before, involves factors relating to trust and confidence in vaccines, vaccine education, and those who are recommending vaccines, such as governments and healthcare professionals (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). In 4.4, there is a discussion of trust, and some questions that appear there also can be analyzed using the confidence framework. Similarly, some aspects here could be analyzed with trust. This section focuses on what could raise confidence barriers towards vaccines and focuses on aspects that do not require trust in another party. This includes the speed of the COVID vaccine, the safety of it, and women's health. Government, vaccine manufacturers, and media are observed under the lens of trust.

Though many of the interviewees throughout the project were self-described as not vaccine hesitant, vaccine hesitancy does not exist on a two-point system, where an individual is vaccine hesitant and does not get the vaccine, or they are not vaccine hesitant and do get the vaccine. As said before, it is a spectrum of decisions and opinions, and an individual can be both hesitant and non-hesitant in the proper situations (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). As mentioned before, in Steinmetz's article (2022), confidence barriers and complacency barriers were the barriers mainly observed during the surveys, with confidence mostly being influenced by worries regarding potential side effects.

4.3.1 Vaccine Safety

The risk concerns around vaccines can be an important influencing factor when it comes to confidence in vaccines (Sadaqat et al., 2021). In order to gain insight into this, one question asked throughout the interview process was whether participants felt that they got enough information on the vaccine and vaccine safety. In a quote that has been mentioned earlier in the thesis, Respondent 2 answered the following.

> I don't think I've ever really been sat down and discussed the vaccines I've gotten in great detail, other than during the COVID pandemic. But I am confident that if I asked for the

> information or if I tried to find it, I would, and it wouldn't be held from me. (Respondent 2, February 2023)

Although the information was not perceived as actively given to Respondent 2, it did not affect confidence in her because of the trust towards being able to access the information. She felt that the availability of the information was a sign of good communication from the government. However, with Respondent 12, when she was asked the same question, she responded with the following.

> When you hear about vaccines, you mostly get the information about what it can prevent, or the good thing about it. And the side effects are, for the most part [a] little bit pushed to the side. I don't feel like the side effects are as big of a part of the information around it. (Respondent 12, April 2023)

When asked how she felt about this, she said it made her "question things a little bit". The idea that negative information was not provided caused some hesitancy. This was also seen in the literature surrounding vague positive information versus truthful negative information (Petersen et al., 2021). However, like found in Petersen et al.'s article (2021), Respondent 12 considered that although it is important to hear negative and positive aspects of a vaccine, it could potentially "[make] people maybe not want to take vaccines". This correlation was found, where negative information led to a decrease in vaccine uptake (Petersen et al., 2021).

Respondent 5, when asked if he got enough information on vaccine safety, answered in a similar way. "You have to do some research yourself to find out how safe it is, but all the information is public if you are looking for it. But I don't think it's [shared], you have to look for it." This idea of the information being available, but not shared freely was a common one throughout the interview process, which could show a perceived communication problem. Respondent 7 felt the same way.

"I feel like they haven't really [made] it clear about, like, side effects and like worst case scenarios, you know." He stated, referring to the Norwegian government. "It's usually the media that always covers that for… It should've come from the government itself, I feel."

Respondent 7 also said that the information he got on vaccines was "not on the detailed level, but more on the general level" and if he wanted more information on specifics about vaccines, beyond what it was and why to take it, he would "have to google it myself, basically." When asked if he believed the government shared enough information on vaccines, he stated that

"personally, I think they could provide more." Respondent 5 also believed that he did not get enough information on vaccines.

Respondent 13 also did not feel as though she had gotten enough information on the COVID vaccine.

> You don't hear that much about the side effects before you take the vaccine. And of course, with the COVID vaccine they hadn't tried it long enough […] But with the flu shot and stuff, I don't have any idea what the side effects are. I also don't know when it rolls out or when you can take it […] Unless you seek it yourself, you won't find much. (Respondent 13, April 2023)

Though the information is available, this participant believes that the information is not given until after inoculation, and that the lack of information is more prevalent with vaccines outside of the COVID vaccine. Drawing back to a study on vague communication by governments in order to promote vaccinations (Petersen et al., 2021) this can be tied into the concept of promoting positive yet vague information over information that may be perceived as negative. Although some participants view the accessibility of the information as clear communication, some see it as trying to hide said information.

Side effects were another concern I asked participants about during their interviews, if they had been vaccinated against COVID. For some individuals, the presence of side effects had no impact on their perception of the vaccine and its safety, but for others, it strengthened their resolve. Respondent 7 had side effects from the COVID vaccination where he felt sick. When asked if it impacted his view of the vaccine, he responded that "they already warned us about the side effects, so we were like, ok, so it's actually working".

One participant, Respondent 3, had extreme side effects, potentially stemming from the vaccination. Before the vaccine appointment, she did not have any hesitation towards getting the COVID vaccine. She stated that "when I went to get the vaccine, I wasn't nervous at all". Respondent 3 ended up having to visit the emergency room after receiving the COVID vaccination.

> I felt as though my vision, the peripheral of my vision was getting blurred. And that felt kind of uncomfortable. But I was ok. And then after the 20 designated minutes, I left the place and on my way home- it takes about 20 minutes to get home- I was walking and I was at the final stretch before I got home, I noticed that my throat was getting tighter and tighter and

tighter. I had to lift my face upwards towards the sky to be able to breathe and obviously that really scared me. (Respondent 3, February 2023)

This personal effect impacted her perception of the COVID vaccination. Although she had been worried about the speed of the development and rollout the vaccine, it was easily overlooked when it came time to being vaccinated. Though Respondent 3 had side effects to the vaccination, leading her to not take subsequent COVID vaccines, she did originally take the COVID vaccine. At the end of the interview, she was asked if she believed the COVID vaccination was harmful or helpful, and she responded that to her family "it was helpful because it gave them freedom to move without being scared." But for her specifically "it was more harmful than helpful."

Respondent 10, the only person in this study to have denied the vaccine from the beginning, stated that he did not get the COVID vaccination because the "risk was too big." This was based on information he heard from an immunologist from New Zealand he listened to. This distrust was based on the information he was provided about the MRNA vaccine. His main reason for denying the vaccine was safety.

The HPV vaccine was also brought up as an example by some of the participants. As stated earlier, the HPV vaccine also had a comparatively low vaccination rate in Norway due to distrust of the vaccine. Multiple participants in the study mentioned their experience with the free vaccination program in schools. One exception to the high rate of vaccinations during childhood in Norway was the HPV vaccine (Feiring et al., 2015), which had a lower acceptance rate. One of the respondents discussed this specific vaccine with me, which she was offered as a child in primary school.

"When I was in primary school, the HPV vaccine was being tested out on women or on girls to prevent cervical cancer and my mother was skeptical that we were being, quote, used as guinea pigs. So, I don't think I ever got that one." stated Respondent 2, a woman in her early twenties. Though this choice was not her own, she still has not gotten the HPV vaccine, and it shows the existence of vaccine hesitancy towards previous vaccines in Norway.

Respondent 11 also had a similar case. "When we are like, 13, we have to take [the] HPV vaccine, and when we went to high school my friend told me she didn't take it because her parents [were] against it." In both cases, with Respondent 1 and Respondent 11, there was a perceived risk in the HPV vaccine due to parents.

The decision to not take the HPV vaccine were chosen by the parents, who decided to opt their children out of said vaccine. These parents were not the only ones. Other than the COVID vaccine, the only other vaccination that had not reached 90% in Norway was the HPV vaccine (Feiring et al., 2015). Parental vaccine choice is important to address when talking about vaccine hesitancy, as they have control over if their child is vaccinated or unvaccinated. Since many vaccinations are given during early childhood, addressing these fears is important to raising vaccination rates (Salmon et al., 2015).

There were six people who claimed to be parents who partook in this study. These parents stated to have no impact from parenthood on vaccination decisions, other than wanting their children to be healthy. However, one parent respondent did discuss dissatisfaction with the closing of elementary schools. This frustration was due to the purported social and psychological impact of not being able to participate in school, and he believed that they should not have been shut down. This contrasts with trust studies, such as Helsningen et al. (2020) which found that 45% of Norwegians 'strongly agreed' with the decision to close schools, daycares, and borders. However, due to that study being conducted in 2020, there is a possibility attitudes have adjusted since then, but the contrast is still relevant.

4.3.2 Speed of Vaccine Creation

One of the reasons some respondents had hesitancy towards the COVID vaccination was the timeframe in which it was created. Troiano and Nardi found in their review of research papers that concern surrounding the speed of vaccine creation was a common factor for vaccine refusal. Also stated during the literature review, Chou and Budenz (2020) mention an impact on negative COVID vaccine perception due to the speed at which the vaccine was created. Similarly, Sadaqat et al. (2021) found that non-medical students indicated more willingness to get vaccinated if they perceived the COVID vaccine as having gone through rigorous testing. This was a concept mentioned by multiple participants in this study. "The speed at which it was created caused me a little bit of concern, but I would not identify as vaccine hesitant" stated Respondent 2. Although she goes on to clarify that she is not vaccine hesitant, there is hesitancy shown here as vaccine hesitancy is not a binary scale.

> I was [a little] skeptical, initially. Because I thought it was made in a rush, or out of an emergency. Like, they were desperate to find a vaccine. And that kind of scared me. That was my initial reaction. (Respondent 3, February 2023)

Respondent 3 had similar feelings to Respondent 2, after recalling her initial reaction to the vaccine. She describes herself as generally pro vaccinations but developed skepticism towards the COVID vaccine in particular. She believed that "science has proved it's often beneficial to get vaccinated" when speaking on vaccines in general, but the quote above specifies how she felt about the COVID vaccine. This is one example of a contextual impact of vaccine hesitancy. Skepticism towards the COVID vaccine is not something that can be correlated to all vaccines and should be analyzed alongside but not together (Kreps et al., 2021). It also relates to vaccine hesitancy not being binary but falling on a scale instead (Dubé et al., 2014).

In the previous section, there was a quote by Respondent 1, where she believed that the Norwegian government waited for scientific input before promoting the vaccination. As seen in this section, this was not a common belief between all participants. Respondent 3, who believed that the vaccine was made in a rush, also stated that she trusts the Norwegian government "to an extent." This qualification is extremely important, because it shows the impact even a small decrease in trust can have.

For one participant, the speed of the vaccine creation impacted her skepticism after she had received the vaccine. For Respondent 13, she did not have concerns initially when she heard about the COVID vaccine. She discussed this after being asked about her initial reaction to the COVID vaccine.

> I didn't really have an opinion on how long it should take to develop a vaccine, because you don't really hear about that as much, but now that I know how long they normally take to develop it, I'm more skeptical. But back then, I was happy to take it. (Respondent 13, April 2023)

Respondent 8, who knew someone who had decided not to get vaccinated, stated that the speed of the vaccine influenced the hesitation towards the COVID vaccine, specifically, along with possible unknown side effects.

> Ok, this person I know [has] been vaccinated throughout [their] life but when the COVID pandemic hit, then they didn't want to take up that vaccine out of, I think out of fear that it was created so quickly. (Respondent 8, March 2023)

There is a perception with Respondent 8 that speed has influenced others' perception of risk when it came to the COVID vaccine, addressing contextual factors in vaccine hesitancy. Respondent 18 also knew individuals who were concerned with the speed of vaccine creation. They both mention that the individuals they knew were vaccinated before, but only hesitated towards the COVID vaccine.

Respondent 19 had a different perspective on the speed of the COVID vaccine. To him, the speed of the creation was positive, and he "was very impressed by the very quick turnaround for how fast the COVID vaccine was produced." He was then asked a follow up question on whether the speed was ever perceived as negative, he responded with no and proceeded to explain his viewpoint.

> While the speediness to some is an indicator of it being rushed, it was also a collaborative, international project that was on speedy time because it was- a lot of resources were invested into it and they did clinical trials, so if anything, I'm just impressed. (Respondent 19, August 2023)

His explanation includes references to the context in which the COVID vaccine was developed. There was an international effort to see the COVID vaccine be produced, as there was a pandemic. There were also many resources being put into this project. This context is an important part in understanding the speed of the vaccine creation and reducing this confidence barrier.

Vaccine hesitancy can be context specific (Razai et al., 2021) and this is supported by the commonality of fear due to the speed of the creation of the COVID vaccine. In other research, they found that medically informed individuals were hesitant towards the speed of the COVID vaccine creation (Kreps et al., 2021). Multiple participants expressed a level of hesitancy stemming from speed. This has not been seen to be a problem in previous vaccinations and should be taken into consideration.

4.3.3 Women's Health

One overarching theme that showed up in multiple interviews was the interest in women's health, and the lack of trust individuals had with vaccines and its effects on women's health. This was a theme that was addressed by male and female participants. Earlier in the thesis, I addressed an article that found the female gender in Norway to be a significant predictor to less vaccine

hesitancy (Wollebæk et al., 2022). Despite this, women's health was brought up as a possible confidence barrier in the interviews.

Respondent 3, during her interview, wanted to discuss one of her primary reasons for COVID vaccine hesitancy. As mentioned before, she had intense side effects to the COVID vaccine that ended up with her having to go to the emergency room.

> It has to do with the testing of the vaccine. From what I've read, there's little testing done on women, and that really scared me. Because I've read that, in general, even other vaccines that have been tested for many, many, many years, they're all tested on healthy men. And from what I've read, it's because on women the hormones changes and that makes it difficult for them to test over time. (Respondent 3, February 2023)

She goes on to mention that she had noticed abnormalities in her menstrual cycle after her one and only dose of the COVID vaccination. When asked if there was something that could have been done to assuage this fear, she says "if [the vaccines] had had a little more time, then perhaps we would've been able to avoid some of these side effects. So that's kind of the steps that I hope would happen." However, as she stated, other vaccines also have been primarily tested on men, so this concern for her is not a contextual concern specific to the COVID vaccination, but rather a broader concern.

After her initial interview, Respondent 3 requested a short follow-up interview to address more specifically her feelings around the second dose of the COVID vaccine. After being contacted by Norwegian health authorities "several times" about taking the second dose of the COVID vaccine, she said she was "already kind of- apart from being afraid after my reaction- I was already kind of concerned about the whole female reproductive system issue that I heard about with as a side effect of the vaccine."

Those who mentioned women's health being one of their concerns had found out about potential problems from news media reports and not from the government channels. Respondent 3, as stated before, was contacted by Norwegian health authorities and she asked them if they "could provide [more] information or studies about the side effects of the vaccines? And they said no." The lack of information, after her initial extreme reaction to the original COVID vaccination, caused her to not take any follow up vaccinations.

Respondent 2 also mentioned women's health when asked about the necessity of all people getting the recommended vaccinations and how mandatory vaccines may be an infringement on

freedom. “Currently we don’t know everything about the vaccine, like some women have had some side effects with their menstrual health for example.”

Respondent 7 also addressed concerns about women’s health and the COVID vaccine. When discussing vaccine safety and the role of the Norwegian government, he mentioned his dissatisfaction on studies conducted. “I remembered one case, especially for the COVID vaccine, that it affected women with their menstrual cycles. And that was basically like- it was never really warned by the government.” He had seen through polls conducted by the media that women experienced side effects from the vaccine on their menstrual cycles.

It is unclear if the Norwegian government was aware of scientific data to back up these claims at the time. As of September 2023, a study has been published reporting on non-menstrual bleeding after the COVID vaccine (Blix et al., 2023). It found that there was a two to threefold increase in bleeding for postmenopausal women after vaccination, and for peri- and premenopausal women, it was a three to fivefold increase for non-menstrual bleeding post-vaccine (Blix et al., 2023). This study was conducted with the Norwegian Institute of Public Health.

Women’s health is not a new concern when it comes to vaccinations in Norway. As mentioned before, one example is given by Respondent 2, where her mom elected not to have her vaccinated for the HPV vaccine as a child due to the belief that young women were being “used as guinea pigs.” This anecdote is backed up by research conducted by Feiring et al., in 2015, which showed that the HPV vaccine was one of the only ones to not reach 90% inoculation rate in Norway’s school vaccination program. This could mean that there needs to be more focus on women’s issues when it comes to healthcare and vaccination research.

Respondent 17 stated in her interview that she knew women who had problems with their menstrual cycles after having the COVID vaccine. In her case, it did not affect her trust in the vaccine or her choice to take it, but it did have a small effect on hesitancy.

As stated earlier, testing vaccinations on women is a concern that people have had for not just the COVID vaccination, but indicative of a broader concern. Knowing that a vaccine or medication has been tested on multiple parts of the population can help relieve distrust around the potential negative impacts of the medical device. More transparency and broader testing can help reduce the chance of potential negative side effects and broaden the scope of medicines in the future.

4.3.4 Summary

Confidence in vaccines and those who promote them is important. In order to better understand confidence barriers of the participants, the beginning of this section focused on the perception of vaccine safety. As stated before, risk concerns about vaccine safety are a potential barrier to vaccination. Multiple participants were unsatisfied when it came to the COVID vaccine safety information, as they felt not enough had been shared. Some also felt that vaccine information in general is not shared as freely as it potentially should be. Regardless of the information being accessible on government websites, the perception of a lack of information was enough to impact confidence.

The speed of vaccine the vaccine creation and rollout were areas of a confidence barrier that was addressed in the interview process. This is a context-specific barrier for the COVID vaccine, due to the necessity of the vaccine on a global scale. As Respondent 19 suggested, due to a global collaboration and research, the speed was foreseeable.

Confidence barriers stemming from speed and from women's health have some overlapping ideas. Both can branch from the idea that there has not been enough testing, or a lack of concern. The speed of the COVID vaccine creation has been controversial (Kreps et al., 2021). Whether this lack of testing is on women exclusively or people in general, it can lead to less confidence in vaccines in specific situations or in general.

There were some confidence barriers to media as well, which is in contrast to most studies involving Norwegians and media. There was also a distinct difference between how they claimed to engage with social media versus traditional media.

Overall, confidence barriers did indicate hesitancy from participants, though did not seem to be a key point in personal vaccine behaviors. Understanding what causes the barrier is important for future communication decision-making behaviors in future public health areas. The next section addresses trust, which ties in well with confidence barriers towards structures.

4.4 Trust

This section of the analysis addresses the framing of trust questions that were proposed during the interviews. Specifically, it analyzes the active choice of trust that the participants may make when it comes to certain organizations and people such as the Norwegian government and

healthcare officials. It also was important to understand the view that the respondents had regarding the vaccine manufacturers.

This section builds on the analysis of confidence in vaccines and the factors that affected said confidence, while the focus on this section is the manifestation of trust in systems. Trust is paramount to handling health crises as stated before, and should be (Hedenigg, 2021).

I chose to focus this section on the trust of government and healthcare officials to better understand the choice made for these two institutions. This section ties in with section 4.3, as certain parts of confidence are also relevant in the matter of trust. Along with these two factors, I also investigated trust in media and media sources from the participants.

4.4.1 Norwegian Government

According to Respondent 2 "it's in the interest of the government to have all citizens to be happy and healthy". Norwegians are characterized by a strong trust in government (OECD, 2022), and this was reflected throughout the interview process, though there were some points of interest within the trust given. Many interviewees stated their trust in the government, but also acknowledged that the focus of the government may have led to decisions that were not intended for their own welfare.

"I think that the Norwegian government is [not] hesitant to vaccines but I think that they put some time and effort and they [waited] a bit" stated Respondent 1 when asked what the Norwegian government's view on vaccines is. With this respondent, there is a level of trust that the government will do due diligence and listen to science before promoting a vaccine. As stated before, trust tends to be oriented towards potential possibilities (Hedenigg, 2021). "They were [waiting] for some scientific input before they engaged with mass vaccines." States Respondent 1. This statement addresses one of the issues other respondents have had with the Norwegian government, which is a lack of testing before introducing the vaccine. This is addressed more in 4.3.1, Vaccine Safety.

One question I asked during the interview process was "did the Norwegian government share all the information about the COVID vaccination with the public?" This question was designed to assess trust in the interviewee in relation to the communication provided by the Norwegian government. Surprisingly, multiple participants who said they trusted the Norwegian government also believed that the government withheld information about the COVID vaccine

from them. “I doubt they shared everything. I think there was probably parts of it that they maybe held to themselves a bit, or maybe delayed telling us” said Respondent 2 when asked if the government shared everything about the COVID vaccine.

The definition of trust used in this thesis is one of an active choice, where the trustor places confidence in another party willingly (Mayer et al., 1995). Some of the previous quotes can be interpreted as a choice of trust, regardless of actions that may limit their involvement in the decision process. Although Respondent 2 does not believe that the government shared everything on the COVID vaccine, she still later says that she trusts the Norwegian government. Trust also requires the person placing trust in another system or person to acknowledge that the trust could be broken, which is exemplified here (Guy, 2019).

Respondent 13, when asked if the Norwegian government had shared all the information on the COVID vaccine, said that they had not. “They wanted people to take it, and if they were even more open with possible side effects and stuff a lot of people would’ve refused to take it.” This is in line with her previous answer on if she felt like she had enough information on vaccines and vaccine safety.

As mentioned in the confidence section, a question I asked was if the participant felt as though they got enough information about vaccines. I analyzed certain responses based on the answer’s relation to trust. Respondent 10, who does not trust the Norwegian government, felt as though he did not get enough information about the vaccine safety. He stated, when asked if the government did not share the vaccine safety information, that “It is available through government pages, official health pages, a lot of it is.” Although the information was available, he felt as though he had to do his own research on the COVID vaccination.

Though he accessed the information he found through government sources, he felt as though they did not share the information. This is similar to the perspectives of the respondents in section 4.3.1. The statements on the lack of information seem to be regarding, specifically, the information not being mediatized to the public. However, the information is available for people to access if it is looked for. It is untrue to say the government has not shared the information when it is publicly accessible. This does not change the views of the participants that the information should have been actively shared.

“It’s all out there, it’s not like it’s hidden or anything, it’s just that you have to look for it, but you have to know what to look for,” Respondent 10 stated. “I couldn’t even call it careless;

I'd call it reckless." This can be tied into Petersen et al.'s (2021) study on vague communication around vaccines. Although the information was able to be accessed, the fact that it was perceived as not shared or promoted lead to distrust in the effectiveness and safety of the vaccination in Respondent 10. The information not being shared can be seen as a reckless action, or communication choice, to some people. This is similar to Respondent 13, who saw the availability on just the websites as not enough.

Conversely, Respondent 8 was pleased with the communication from the Norwegian government. When asked how the communication was from the Norwegian government on the COVID vaccine, this was the answer.

> It was very easy to find information, in multiple languages, too, not only Norwegian. Which is very good. [And] you got contacted directly. Either through someone calling you or [getting] an SMS. It was, I think, very well thought out and it minimized you having to seek out the vaccination yourself. You were just assigned when you could pop by and take it if you wanted to. And so I think it was quite, quite well done, quite effective. (Respondent 8, March 2023)

Interestingly enough, in the 4.2.1 accessibility section, one of the other respondents, Respondent 7, believed that there was not enough information provided in multiple languages. This ties back to the perception of Kour et al.'s (2022) study, which found that there was a want for better communication in native languages.

These statements around the communication of vaccine information show that availability of vaccine information is not considered the same as sharing of vaccine information. This was also discussed in the section on vaccine safety and information. For some, the ability to access the information and the public forums they are available on, such as government websites, is considered the sharing of information. But for many in this study, this was not considered enough. One participant, Respondent 7, suggested that the government was "really careful, but they could've been on the pitch much earlier" when it came to concerns about the effect of vaccines on women's health.

In the literature review, it was found that transparent communication can decrease vaccination levels, but increases trust in systems (Petersen et al., 2021). There seems to be dissent among the participants on the transparency of the communication from the government on vaccine information.

Though the individuals themselves may trust the government's decisions, there was some hesitation around the way the Norwegian Government decided to communicate about vaccinations. Respondent 7 worried for future health crises, and how the vaccine hesitancy that came from the COVID pandemic would impact possible future epidemics and pandemics. Respondent 2 said that "people were already quite fed up with the government telling everybody to quarantine and stay inside".

Another question I asked, regarding confidence in the Norwegian government, was whether local and national government cared about people's health. Respondent 10, a vaccine hesitant individual, said it was "impossible to answer" about the local government, and a definitive "no" about the national government. He went on to elaborate about the national government. "I truly believe if they had truly cared about people's health, they wouldn't have locked down society like they did." He linked the restrictions to a decline in mental and physical health in the Norwegian politicians and disliked the perceived hypocrisy of the national government and politicians.

> One politician after another… who disobeyed their own COVID rules and all of them survived, and none of them got sick. That's strange. And that's why I don't believe the authorities at all. So no, they don't care about our health. Zero percent. (Respondent 10, 2023).

Respondent 10's belief was that politicians were making money from the distribution of COVID vaccines. He claimed that with the introduction of the vaccine, the vaccine manufacturing companies would pay for the use of their product. The motivation of profit was what he believed to drive vaccine rollouts.

However, other participants had some different perspectives on the care the government had for the health of individuals. For Respondent 1, she stated that "[the government has] done tremendous things. They closed down the border they put up all of these rules and regulations to like, keep us safe." These are two contrasting views of the decisions the Norwegian government made during the COVID pandemic as expressed by the people involved in the study.

To avoid giving a false overview on levels of trust in Norwegian society towards the government, I will address other literature. This study is not a representational study, and so should not be applied to all Norwegian society. In a study conducted in 2022, around 55% of Norwegians had high trust in the political system of Norway, and around 25% had medium trust

(Dalen & Schlyter, 2022). In general, the participants of this study had trust in the government, but also expressed some worry. In a similar way to vaccine hesitancy, it seems to be a continuum of trust rather than a binary.

Respondent 2 felt much the same as Respondent 1 when asked if the Norwegian government cared about her health.

> I'm tempted to just say it's their job. Whether or not they, on an individual level, actually care is not really- it's almost a moot point. They work to better our quality of life. It's also kind of in terms of sovereignty. If the national government doesn't care about the health and wellbeing of their people within their borders, then what really are they there for? So yeah, I think they care. (Respondent 2, February 2023)

For Respondent 2, it was an expectation that the national government cared about people's health, which ties into the trust Norwegians have in government. For Respondent 3, the reasoning was based more upon the idea of economic factors rather than personal health. "It would be far more expensive for them to take care of you if you got sick with something they could've paid less to prevent".

When Respondent 13 was asked if the national government cared about her health, she believed that it was more about the numbers and international context of the Norwegian government, and less about individual health.

> I think they're mostly interested in numbers and statistics. They want to look good in front of the rest of the world. So, if the statistics are better and not many get sick and not that many get admitted to the hospitals, then they will prove to the rest of the world they've done something right. (Respondent 13, April 2023)

This shows a lack of trust in the national government's care for health in the population. In contrast, her answer about local government was that "they are mostly worried, of course, about the hospitals overcrowding. And I think maybe more people there care about your health". This shows a contrast in how Respondent 13 views local and national government, and how communication between the two to the population can change perception.

During the interviews, one question I asked was if the participant trusted the Norwegian government. Only one participant, Respondent 10, stated no trust for the Norwegian government. However, he did mention that the lack of trust did not stem from the COVID pandemic, but from before the pandemic as well. This respondent had a history of vaccine denial and opposition, and

his hesitancy was not context specific. However, he did mention that he felt as though his trust in the Norwegian government was completely gone after the COVID pandemic.

Another participant, Respondent 13, believed that trust in the Norwegian government had reduced during the pandemic in the general population, as it had for her. In contrast to Respondent 10, her trust from before the pandemic had gone down. Both Respondents 10 and 13 believed that the response to the pandemic harmed people's trust, as it affected daily life and economics of people. This contrasts with trust surveys given to Norwegians on a larger scale, such as the Dalen and Schlyter (2022) study mentioned previously in this section and the literature review.

When asked if she trusted the Norwegian government, Respondent 13 initially responded with "less than I used to". It had to do with a perceived overreach of power and the impact of the pandemic regulations.

> I felt like they were using too much power in regulating how we move about and who to be with and those things. I think a lot of the shutdowns and stuff could have been avoided. They put a lot of people, myself included, in a very difficult financial position. [A] lot of people haven't recovered from that. (Respondent 13, April 2023)

It has been claimed that the Norwegian Government did have some fairly strict policies during the COVID pandemic, as mentioned before (Hedenigg, 2021). However, along with these restrictions, the country also had low death rates and economic decline, as compared internationally (Hedenigg, 2021). Regardless of these positive factors, the perception that some individuals had towards the restrictions could be impacted by hardships faced during the pandemic, as seen by Respondent 13's answer to the question.

Vaccine safety is a concern many have when it comes to vaccine hesitancy. Respondent 2 stated, when asked if she had enough information on vaccine safety, that "I am confident that if I asked for the information or if I tried to find it, I would, and it wouldn't be held from me." She showed a high trust in Norwegian government when asked if they cared about her individual health. Although this question was about vaccine safety, Respondent 2 addressed the Norwegian government during her response.

> I also do feel like the national government in Norway is [a] relatively good representation of the people, and I do feel connected to them on a human level, where [I] can relate to the

politicians, and I trust them as individuals. So yeah, I do think they care. (Respondent 2, February 2022)

Conversely, Respondent 3 did request more information from the Norwegian government and felt that she was denied. Her request was due to the negative side effects she experienced from the vaccines, and she was not able to get information on the history of side effects of the COVID vaccination.

Respondent 2 also was asked about trust in government versus social trust. During the interview, there was a discussion around trust in government, media, and social circles. To get more information on this, I asked her what she would potentially do if the opinion of the Norwegian government and her social circle differed on a vaccine.

> It's difficult to tell, or it's difficult to say. I think, if the government was supporting it, I would probably get it, even if popular opinion was against it. I do generally trust that the government's view of things is good, they're not going to harm me. Or not willfully, anyways (Respondent 2, February 2023).

As mentioned earlier, there has been a study conducted that demonstrated trust in the Norwegian government supported by the communication tactics of said government (Skjesol & Tritter, 2022). This was somewhat reflected in the answers given by participants. This shows the importance of considering trust in the context of the 3 Cs as a separate indicator.

4.4.2 Media

Media is an arena where critical health information can be shared. It is also where critical disinformation can be shared. The majority of the participants in the study said they gained information on the COVID vaccine through Norwegian news channels such as NRK and VG. The participants mentioned getting information through official press conferences or official news briefings. The respondents usually went directly to the website or watched the news, and few said that they clicked through to articles from social media. In contrast, American consumption of social media accounted for around 70% getting news from social media (Levy, 2020).

Around half of the participants stated having little to no social media information gained during the pandemic. One of the participants did not use social media at all. Verma et al. (2022) found that age was a factor in positive trust towards mass media. The older a person was, the

more likely they were to have trust in the media. This contrasts with a study from Norway, which shows that people are more likely to trust traditional media over social media (Elvestad, Phillips, & Feuerstein, 2017). In this study from 2017, they found that even though Norwegians visited social media sites, they did not find the information compelling or trustworthy.

Respondent 1, a university student in her 20s, was one participant who gained information from traditional news media for the COVID vaccine. This was her main way of getting information on the vaccine.

> Editorial news media, so probably VG, Aftenposten, and the national broadcaster NRK. They would do those conferences, and I would watch them religiously and just get all of the information, listen to the critical questions by journalists. (Respondent 1, February 2023)

This was similar to Respondent 2, "I got [information] mostly from the national news outlets, so NRK, also probably Aftenposten. So mainly news articles." However, these were not physical news sources, but digital. This trust in media has been reflected in previous studies on Norwegians, with NRK being mentioned as a trustworthy source there as well (Elvestad, Phillips, & Feuerstein, 2017). Respondent 2 also mentioned that she did not use social media for news.

Respondent 13 was similar. "No social media, I went straight to NRK and watched the news there and read the news there." Respondent 2 also showed trust in media when it came to the decision to get vaccinated. When asked why she got the vaccine, she responded that trust in news was one of the driving factors.

> Because I trusted the sources of information around me that said that it was safe enough, good, and that it was imperative that we gained herd immunity to get out of the pandemic… [the] news articles around me, the government asking us to go get the vaccine. (Respondent 2, February 2023)

Trust in the media was not persistent, however. There were some who had trust in media, but not in the vaccine information given by media. This is an example of context-specific confidence. Respondent 8 was an example of this.

> That's that depends. I think some of the media did spread knowledge, but there were also a ton of like sensationalist stories. And I feel like that can be taken with a pinch of salt, really. So, it wouldn't be my go-to source. (Respondent 8, March 2023)

Instead of going to news sources such as NRK or VG, Respondent 8 chose to gain information through health websites, Helsenorge specifically. There was trust in media, but the perception of 'sensationalist stories' decreased trust.

Respondent 2 also had trust in the media. "I kind of trust the news sources that I used. I trust them maybe a bit more than the government in terms of sharing the adverse effects of the vaccine." She trusted them to be more open about the side effects of vaccines over the government. However, later in the interview, she qualifies this statement.

> Even if the media might be more honest in sharing the adverse effects and the whole picture… [I] think the government makes a good and thought-through decision and that might also include keeping some of the information back in order to [not cause] unjustified panic. [I] don't think they would ever lie about something, but maybe they would recognize that some of the information will be misunderstood and misinterpreted, and therefore maybe not share it. (Respondent 2, February 2023)

There was also an opinion that media played a role in stigmatizing people who had chosen to not get vaccinated. Respondent 13 believed that there was a stigma around people who had chosen to not get vaccinated.

> [The media] played a huge role in it. They kind of portrayed the antivaxxers, if you can call it them, in a really, really bad way I think. I don't know if it's justified or not, to be honest, because some of them do sound kind of crazy. But the way the media portrayed them also wasn't very nice. A little bit unfair, I think. Because people refuse to take them for different reasons. [Or] can't take them. (Respondent 13, April 2023)

One of the respondents, other than Respondent 10, mentioned consuming non-Norwegian media. Respondent 3 also paid attention to United States media outlets and compared the experience.

> From what I saw was that in the US there was a lot more reporting out. They would showcase, you know, how horrible the hospitals were doing in New York City and really reporting on what was happening out and about, while in Norway we didn't really see much of that. We saw more health professionals and experts and politicians talking about what was going on. I think that was the main difference. (Respondent 3, February 2023).

This helps exemplify one of the contextual differences between countries. She emphasizes her perception of the use of fact-based communication from the Norwegian media while the United States had more of a focus on shocking, attention-grabbing news.

It is evident that many of the participants have trust in the Norwegian media, specifically ones such as NRK and VG. Social media was not a primary news source for respondents, as participants would turn to traditional news media for information on COVID. There were, however, some signs of wariness towards the media and a lack of trust by some participants. It is important to consider what potentially impacted this trust in the media. Norway is categorized as a country with a high trust in media (Burrell, 2022), and the respondents tended to follow this pattern.

4.4.3 Vaccine Manufacturers

One question I proposed was whether or not vaccine manufacturers were interested in the health of the participants. Overwhelmingly, there was skepticism of this. The phrase "yes and no" was extremely common, along with the belief that these organizations were more interested in the money than the health of people.

> Yes and no. I think there's always going to be a financial motive, like when pharmaceutical companies create vaccines, but at the same time I do believe that a lot of doctors and scientists want to aid public health with vaccines. (Respondent 3, February 2023)

Like Respondent 3, Respondent 7 also had a mixed perspective on vaccine manufacturers.

> I don't think they're really interested in health, per se. But the more a vaccine works the more it will get sold in that perspective. Like it is still a- It's a big industry. It's profit based, basically. But of course, it has to work as well. Plain answer, yes. But not because of our health, for other reasons. (Respondent 7)

In the perspective of Respondent 7, these industry manufacturers are more interested in the profits for vaccines. However, in order to make profits, the vaccines must be effective. In the view of Respondent 7, there is an interest in health but not for the sake of individual health, but for profitability.

Respondent 5 also believed that vaccine manufacturers were more interested in profit, "because we live in a capitalist world." There seems to be distrust in capitalistic systems as demonstrated by this participant. However, he did trust the Norwegian government to care about individual health.

However, not all participants were skeptical of the motivations of the vaccine manufacturers. Respondent 8 stated that "I put my faith in vaccine manufacturers, and I stand by that".

Regardless, during the interview process, more skepticism was observed than trust, which could have negative impact on vaccine uptake in certain populations.

> Yes, I do. I do think so that that's the main- like main goal of manufacturing these vaccines, so yeah. I just believe that's the goal of vaccines being created in general and. Perhaps that's kind of naive because I haven't done much research on my own when it comes to vaccines. (Respondent 8, March 2023)

This lack of trust could also stem from confidence barriers as well, such as the speed of vaccine creation. Some of the distrust about vaccine speed was the idea that it had not been tested enough (Coustasse et al., 2020). If there is a perceived 'profit above people' mentality from vaccine manufacturers, it is not out of the realm of possibility that people may also believe that they did not test vaccines enough- regardless of proof.

Considering the high amount of trust that Norwegians have demonstrated in public institutions such as government, the lack of trust seen in this thesis towards vaccine manufacturers stands in contrast. This lack of trust could be a barrier to future vaccine uptake if distrust becomes stronger. More research on this is needed.

4.4.4 Summary

Trust was found in this study to be an important barrier to many when it came to vaccine decision making. It tied in well to the concept of confidence, which directly preceded chapter 4.4. Though most participants had some level of trust in the government, there were some who had a reduced sense of trust after the pandemic.

Many of the participants believed that vaccine manufacturers were in the business only for the profit. Although this impacted trust in these institutions, some were willing to overlook this due to the helpfulness of the product. They were willing to trust that the product worked, but not that there was any interest in their personal health.

Norwegians typically display high trust in media (Burrell, 2022) and this study was not necessarily an outlier. Though trust in the media was not always absolute, there was still a general expression of trust from the participants. This was similar to the trust expressed in the Norwegian government by the participants. These two systems collaborated during the pandemic to provide information on COVID, and so trust in both was essential to conveying critical health information.

Understanding the importance of trust in the systems available helps to isolate issues in trust. There was a large lack of trust in vaccine manufacturers amongst the participants, but a decent amount of trust in government and media. Using interviews, it was easy to see where the lack of trust stems from, and in many of the cases in this study, it was financially based. The lack of trust in vaccine manufacturers stemmed from the belief that they may put profit above people. The lack of trust in the government stemmed in some cases from the idea that they did not care about the financial strain of the pandemic lockdowns or were getting paid to promote vaccines. Addressing these issues of trust to ease concerns could help improve vaccine rates in future healthcare emergencies.

4.5 Beyond the 3 Cs – Incentives and Personal Choice

Throughout the process of this study, there were multiple factors mentioned that did not quite fit in the traditional framework of the 3 Cs. Originally, combining trust and the 3 Cs would allow for a comprehensive analysis of trust and vaccine hesitancy, but with concepts such as travel and social responsibility, there was an obvious gap and need for an expanded framework to truly understand vaccine decision-making.

With the framework of the 3 Cs of vaccine hesitancy, the focus is on the barriers preventing people from becoming vaccinated. There is, in turn, not enough focus on what incentives help bridge the gap and encourage vaccination. Understanding these incentives and the context they occur in is essential to understanding vaccine decision-making.

Research regarding vaccine incentives was investigated in the literature review. Financial incentives were the most common form of incentive found in literature. This could be a free vaccine or a lottery system. However, the context of a free vaccine is not one as relevant to Norway. As seen in the analysis on convenience, the general consensus of the participants of this study and the relevant literature was that Norway does not seem to have financial hindrances for vaccinations in general, let alone the COVID vaccine. This was mentioned as an incentive itself in Kour et al.'s 2022 study of immigrants in Norway. The free cost of the vaccine was a motivation to get vaccinated for some people.

The analysis of incentives in this study focuses on two social incentives instead, travel and social responsibility and pressure. There is no section on financial incentives as they were not offered in Norway and were not mentioned by the participants but draws on important context

from financial incentive literature. There are diverse reactions to incentives based on context and exploring the reported incentives can help guide towards health policies in the future (Acharya & Dhakal, 2021).

4.5.1 Personal Choice

Personal choice was a concept important to the respondents. Being able to make their own decisions regarding a vaccine was valuable, whether or not they chose to take the vaccines. There was some struggle with the idea of mandatory vaccinations for some.

"It is beyond reasonable to question why we take certain vaccines" stated Respondent 1, who is self-described as not vaccine hesitant, during a conversation on infringement of freedoms concerning vaccinations. "Although in general I think it's good to have a mandatory vaccine, I understand why some people might oppose vaccines". This idea of freedom was important to the respondent, regardless of her own views on vaccines.

> I think that people should have a choice in vaccines, and that it's infringing on their… perhaps personal rights. At least, I think sometimes that there shouldn't be a consensus that everyone has to take a vaccine and just happily agree to take a vaccine. I think that it's helpful to a democracy for people to ask questions, but I think that's an opinion that most Norwegians hold, that, you know, you are allowed to ask questions because that part of [deliberative] democracy, that not everyone necessarily has to agree. (Respondent 1, January 2023)

This was similar to Respondent 11's thinking, a student in her twenties, as well. "I think vaccines are something you need, you don't need to take them, but I think it's important." She followed it up with the specification that "I don't think they need to be required. It should be optional."

Although she believes that vaccines are important to public health and that they are a good choice, the choice should be left up to the people being vaccinated. I asked her to describe why this idea of personal choice was important to her, and she responded with the following statement. "It's important because I should decide what to put in my body. It's not anyone else's business."

As mentioned in 4.2.2, Respondent 1 stated that she did not consider taking a vaccine as much of a choice, due to the public-school vaccination programs. Although there are routes to opt out of the vaccinations provided by the public schools, it did not feel to the participant as a

true choice. Part of this was due to the parents having control over the vaccine schedule. Respondent 2 had a similar statement to Respondent 1 “throughout my life there’s just kind of been an expectation that if the doctor tells you to get a shot, you go and get the shot and you don’t really ask any questions.”

These vaccine programs are optional and regardless of the feeling of pressure towards participants, they are able to opt out of being vaccinated. Respondent 10, for example, has opted out of getting certain vaccines. But there was some acknowledgement of the societal context around the vaccine decision-making from Respondent 11. “It’s still my choice to take [the vaccine], but I’m not a person who only thinks about myself, I think about others around me too.”

Although the majority of the participants were vaccinated against COVID, there was an acknowledgement of why personal choice was crucial to some of the respondents. Respondent 1 mentioned that she believed that it was a view that most Norwegians held, implying a cultural context to this factor. It also underscores the complexity surrounding vaccine choice and the importance of varied approaches to improve vaccination rates. Autonomy-focused communication around vaccination has been found in previous studies to increase vaccination intent (Moon, Riege, Gourdon-Kanhukamwe, & Vallée-Tourangeau, 2021).

4.5.2 Travel

Referring back to the literature review, Volpp and Cannuscio (2021) mention social incentives in terms of strategies for vaccine uptake. Among these social incentives was the idea of contingent access. The travel restrictions enacted by governments across the world during COVID was a broad-spectrum contingent access.

Traveling was a factor that multiple participants addressed during their interviews. Due to restrictions placed by governments during the pandemic, being vaccinated was seen as a key to be able to travel again to a lot of the respondents. This was found in another study as well. In Kour et al. (2022), a study on immigrants in Norway and vaccine hesitancy, they found that several participants had access to travel as a strong incentive to be vaccinated. Some of the participants in this study had residences in other countries and being able to access them was an important factor to them.

"I could pin it down to three reasons. It would be first, I would want to travel again," stated Respondent 7, a university student in his early 30s when asked about why he got the COVID vaccination. This was his first reported factor in vaccine decision-making, though potentially not the most important to him. He is an immigrant to Norway, so the want to travel could be related to family outside of the country, similar to what was found in Kour et al.'s 2022 study on immigrants in Norway.

Similarly, Respondent 6, also a male in his early 30s, answered the same question with a comparable response. "Because of my partner and because of travel restrictions," he said, "It was a precaution so we could travel." For these participants, travel was one of the essential reasons to take the vaccine. He also mentioned that there are restrictions in place regarding traveling and vaccination. By not being vaccinated, a person would have "more rules to where you can go or where you cannot go."

Respondent 13 stated that she was "relieved" at the news of a potential vaccine, because she "wanted to travel, or be able to travel." This is similar to the previous quotes, because the thought of the vaccine influenced a desire to travel. Kour et al. (2022) found a similar desire to travel, but within immigrant populations in Norway, while the majority of the interviewees during this project are not immigrants.

Respondent 2 said that she "saw that the only way to go travel would be to take the vaccine. And at that point I was like, oh ok, well, then we'll just take the vaccine." Travel was seen more as a determinant for Respondent 2, as it helped influence the final choice in being vaccinated. The ability to travel seemed to be an important value for many of those in the study. The inability to travel was a barrier that was rated as important.

A few of the participants had jobs or other residences outside of Norway, such as Respondent 15. Due to this, the incentive of being vaccinated was essential. To the participants of this study, travel tended to be a strong factor in the decision of being vaccinated against COVID. Volpp and Cannuscio (2021) state that the idea of a 'return to normal' can be an important ideal in incentives, which can include being able to travel in the same way as before the pandemic.

This incentive to travel may not necessarily be as effective in populations where travel is not as important. Places where international travel is not as common may not see the ability to go abroad as appealing as those who travel often, such as the people in this study. Many of the

participants were from the Oslo region in Norway, and it is less than two hours to cross the border into Sweden. There is even a term in Norwegian, 'harry-handling', which is a somewhat derogatory phrase for the act of crossing the Norway-Sweden border for cheap groceries.

Although there may be a uniquely Norwegian context to traveling across borders, this incentive is not reserved for only that. This incentive could manifest itself as a desire for personal freedom and freedom of movement rather than strict travel in some cases. Around the world, people had to be vaccinated in order to go to restaurants, bars, and other events (Volpp & Cannuscio, 2021). It could be seen as a way to regain autonomy.

Respondent 2 stated "the fact that we had been forced to give up so much of our freedom and daily life before the vaccines" did not help with others' trust in government. When talking about her family taking the vaccine, Respondent 3 stated that "it gave them freedom to move without being scared." These two statements address the want for personal freedom along with movement. Travel showed up as an important theme among the respondents. There was an undertone of autonomy and freedom to this, although not explicitly stated.

4.5.3 Social Responsibilities and Pressure

In 4.1.2, I addressed the complacency barrier stemming from the lack of a fear of illness. Multiple respondents in this study indicated that they did not fear potential health consequences from not being vaccinated. However, the vast majority of the participants were vaccinated against COVID, which contrasts with what could be expected from barriers. This is where the concept of social responsibility comes in.

Norway is characterized with large social acceptance for vaccines (Steens et al., 2020), along with high public trust (Hedenigg, 2021). The participants in this study mention having social groups and norms that were positive towards vaccination.

This idea of social responsibility showed up with multiple participants and implies that this social responsibility impacted their complacency towards the disease and vaccinations. Respondent 1 did not want to be the first to take the vaccine, but not because of worries around its safety or effectiveness.

> I didn't want to be the first one to take the vaccine. Because obviously, not because of my own health, but I thought there were other people who had more of a need for a vaccine,

> who needed [to] receive this aid to be more safe against the [virus] I don't have any preexisting conditions or any issues, like health issues. (Respondent 1, 2023)

This concern for others and the necessity of vaccinations for their health is an overarching theme during the interviews. According to Hedenigg (2021), in having trust, there is a propensity towards cooperation. Though this section addresses the factors of complacency, the theme of trust still affects answers. Not everyone mentioned society in their interviews, however, but the thought was common through interviews. Respondent 3, who had discussed her skepticism of the vaccine with her family, said that "my family all thought that it was a no-brainer that you would have to take the vaccine. Kind of pushing what was said in the media, [that] it was for the greater good."

Respondent 3 mentioned social pressure as one of the factors for her deciding to get vaccinated.

> A little bit pressure from family, and society in general. [When] the whole society is telling you- you watch the news, you watch the politicians, everyone talks about how this is going to help us get through this pandemic. I felt kind of pressure from that as well. (Respondent 3, February 2023)

This ties into the factor of high acceptance of vaccines in Norway (Steens et al., 2020) along with social norms being a pressure for or against vaccination (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015). The social influence of the people around became somewhat of a social pressure for her to get the vaccine. The high acceptance of vaccines in Norway (Steens et. al, 2020) is seen in the community that people have, including Respondent 3's family. These are examples of conformist incentives, as seeing someone from your social circle get vaccinated can be incentivizing. They are also prestige-based incentives, referring to seeing high-level people getting vaccinated can be an incentive to get vaccinated (Salali & Uysal, 2021).

Respondent 9 observed social pressure within the societal context of Norway. When asked if she knew anyone who was not vaccinated, she responded with the following.

> In Norway, we have this policy that vaccinations should be something you choose, but [I] think some people felt the pressure that they had to vaccinate, even though it was still something you have to [volunteer] to. But I think some felt the pressure (Respondent 9, March 2023).

Respondent 6 also mentioned a social impact of not being vaccinated in Norway. “In Norway where I would say 95% are vaccinated, and if you would be one of the ones saying you are not vaccinated, people would actually look kind of weird on you.” Although he was vaccinated, he thought there was a stigma in Norwegian society for people who are not vaccinated.

Work is also a social arena where pressure can arise. Respondent 13 experienced social pressure in her workplace, not directed at her but at a coworker. I asked her if she believed social pressure played a role in her getting vaccinated, and her answer was “kind of”. She went on to elaborate.

> Well, at work for instance. If you didn’t get it, it was kind of like, shaming, in a way. If you were open about not getting it. I know also one person who worked here, who didn’t get it, and when he got COVID, people were like ‘oh of course not, he didn’t get the vaccine, blah blah blah.’ Yeah. So, in a way, I guess it plays a small factor in it. (Respondent 13, April 2023)

Social responsibility is another factor that individuals mentioned during the interview process and was mentioned in 4.1.1 on the risk of illness. Although complacency was high for individual health, social health was an incentivizing factor for some respondents. Respondent 2 mentioned herd immunity when asked if everyone should get recommended vaccinations, referring to the importance of vaccinating a large population in order to prevent the spread of diseases.

> I think herd immunity is very powerful. And the notion of protecting those around us that can’t get the vaccines is important. I very rarely get vaccines for my own sake, as a young, healthy person. Even if I do get infected, I’m usually- I’ll be ok. But there are very many that can’t, and I believe that we should take care of those around us through herd immunity. (Respondent 2, February 2023)

Respondent 2, instead of addressing social pressure as a reason for her to get vaccinated, instead demonstrates advocating for said social norm. She addresses her belief that others should be vaccinated for the good of society, rather than just for themselves. Though this question was made to assess confidence in healthcare structures and officials, the answers did not always address that, as seen by Respondent 2’s answer.

Respondent 2 also did mention social aspects to why she got vaccinated, however, along with trust in government and in media. When asked why she got vaccinated, she responded that “Probably also some social aspects of people I knew around me getting it.” This was not

necessarily seen as a negative in her perspective but does show the influence of social context and vaccine choice.

Respondent 7 also mentioned a larger scale impact of being vaccinated against COVID, and how it contributed to his decision to be vaccinated.

> I kind of want to be a part of something big. Because it was, it felt like it was something big, at least like what the media showed us like "get a vaccine, save lives". Do your part. That too, yeah. (Respondent 7, March 2023)

This was one of his stated reasons for being vaccinated. Along with being able to travel, the importance of being a part of something bigger than himself encouraged his choice to be vaccinated. He also explained why it was important for people to get the recommended vaccinations in terms of community. "On a community level it's important to [get vaccinated] to stop the spread of viruses or kind of make the virus weaker."

Respondent 11, who has worked in health care, had a perspective based on the population she works with.

> I work with old, sick people, so for me it was important for me to take it so I could protect them from what I could bring from the outside. You see, when older people get sick, they get more sick than [how] you and I would get. So, they need more care. They just need more than us. So, I think it's important for me to get vaccinated. (Respondent 11, April 2023)

Due to the vulnerable population she worked with, she saw vaccination as a responsibility of her job to be vaccinated to protect that population. It was not for her own health, but rather for the health of those she could expose illnesses to. Although this is slightly different from Respondent 7, who considered the larger impact on society, Respondent 11 still considers those in her community.

As a follow-up, I asked Respondent 11 if it was a social responsibility that she has to get the vaccine, and she responded, "Both yes and no, because it's still my choice to take it, but I'm not a person who only thinks about myself, I think about others around me too." This quote was also mentioned in the section on personal choice.

Respondent 9 also addressed the importance of society when it came to getting vaccinated, when asked if she had ever refused a vaccination before.

> No because- first of all, or earlier when I was younger, I think that was smart, so I didn't get ill myself. But when getting older, and especially during COVID I also felt the responsibility

for the society to get vaccinated. So, it's for my best, but it's also for all around me best. So, and especially those who are very vulnerable for diseases. (Respondent 9, April 2023)

Respondent 4 felt a duty towards getting vaccinated. When asked about it, she stated that "My general view of humanity is that we are all extremely dependent on each other. Like, humans cannot survive alone. And when we can't survive alone, it's important that we work together."

As mentioned before, Hedenigg (2021) wrote about a Norwegian concept known as dugnad, which is social responsibility due to trust in government and structures. Although this concept is about trust that Norwegians have in one another, it also can be analyzed in terms of convenience. Due to the importance of social responsibility, people may take a vaccine regardless of the danger of the disease to themselves specifically. As Respondent 17 said that "we have to take care of each other."

This concept was reflected in the answers given by the participants on social responsibility. There is a clear support of collaborative effort towards healthcare, which in turn influenced decisions to get vaccinated amongst the participants.

4.5.4 Summary

This section attempts to analyze properties of vaccine hesitancy and vaccine decision-making that were observed during the interview process. These concepts did not fit within an area of the 3 Cs or trust and were therefore put into this section. The context and beliefs of the participants can help guide deeper understanding of vaccine decision-making. Personal choice of some of the respondents was important to them, regardless of whether they were for or against the COVID vaccine. A mandatory vaccine could have potentially caused more hesitancy for those unsure of taking a vaccine.

Although research has been conducted on financial incentives, not as much has been done in the field of other types of incentives, such as social incentives. As seen in this section, social responsibility was an impactful influence on the vaccine decision-making process. For the younger people in this study, it was a driving factor. Some who did not see the COVID illness as personally dangerous still felt a strong need to be vaccinated due to the others around them.

Though much research on incentives have focused on the financial incentives, those incentives are not as relevant in the Norwegian context. When observing the complacency barriers reported by the participants, not one stated there were any financial barriers to this

vaccine or others. Scholarships would also not be as attractive, as all public universities are tuition-free for Norwegian citizens.

Travel could be the opposite of financial incentives, however, especially with most participants living in Oslo. As mentioned earlier, due to Oslo's close proximity to the Swedish border, and the increased availability to travel abroad for Europeans in general, travel is a quite important factor in many lives here. This would be an incentive for vaccination, as seen, and also a part of 'returning to normalcy' that has been mentioned in other studies (Volpp & Cannuscio, 2021).

Overall, these factors were important to the participants in the study and could have potentially been the deciding factor for a few when it came to getting vaccinated for COVID. They are also possibly influenced by socio-economic factors, such as wealth for travel and the political context of the country.

5 Conclusion

5.1 Introduction

This thesis introduces the idea of barriers and incentives in regard to vaccine hesitancy as an expansion of the 3 Cs. This thesis, through the use of in-depth interviews, delved into the individual reasonings some Norwegians may have had for vaccine hesitancy. Through this project, there were answers that went beyond just the COVID pandemic but into other vaccines as well, to get a more comprehensive overview of vaccine hesitancy.

The conclusion starts off with an overview of the analysis in the discussion. It addresses the main points brought up in the analysis and synthesizes them into a comprehensive understanding of the data collected. Then, I refer to the limitations of this study and where future research can stand to improve in that aspect. Lastly, I end with a call to action for future research and how this thesis is a part of the foundation for future vaccine hesitancy research, and how prospective research can be structured.

5.2 Discussion

Using qualitative interviews for this thesis allowed for deep insight into the reasonings behind vaccine hesitancy. Being able to address the thought process of the participants and modify the questions in order to dig deeper into an answer given helped go more in depth than in a survey. It allowed for a more holistic view of the individuals interviewed, and added concepts that were not originally thought of when preparing the interview guide, such as the topic of women's health.

Interviewing Norwegian participants allowed for an insight into the Norwegian context of vaccine hesitancy during the COVID pandemic. As Steinmetz (2022) addressed, there is a need for vaccine hesitancy studies within countries as vaccine hesitancy is always changing and evolving. Studies of this kind help identify groups that are more vulnerable to vaccine hesitancy, and address context-specific barriers (Steinmetz, 2022). As mentioned before, one of the context-specific barriers that appeared was speed of vaccine creation. Though this did not prevent anyone interviewed in the study from taking the vaccine, it did increase hesitation.

This project helped investigate reasons that cause vaccine hesitancy among individuals from Norway and adds a cultural dimension to the existing literature. As seen with the answers about

community responsibility and trust in government, it addressed how the participants are positioned to make vaccine decisions due to a cultural context.

Along with adding a cultural dimension to the existing literature, this thesis adds to the framework of the 3 Cs by being another study to add trust. This has not been done extensively, as the concepts have been addressed separately. This thesis argues for the use of trust with the 3 Cs of vaccine hesitancy. The concept of trust differs from confidence, and it is important to separate the two terms to gain deeper insight. Trust was found to be strong in most of the participants, but some dealt with lack of trust in government and institutions.

The theoretical application of trust and trustworthiness in this thesis shows the importance of using it as a lens for understanding vaccine hesitancy along with the 3 Cs. This thesis, by using the concept in tandem with the rest of the 3 Cs of vaccine hesitancy, addressed the specifics of trust and trustworthiness in the Norwegian context, while creating a framework of more in-depth understanding of the impact of trust on vaccine decisions.

Along with the application of trust into the 3 Cs, it was apparent that the framework of this would not be enough to really understand the multifaceted influences on vaccine decision making. As stated before, the incentives to be vaccinated are as important in the decision-making process as the barriers. Much of the previous research has been on the effect of barriers when it comes to vaccine decision-making, potentially at the expense of incentives. As mentioned in the literature review, the majority of incentive research focused on financial incentives (i.e., Volupp & Cannuscio, 2021; Hogan et al., 2022; etc.) which, while important, lacks some of the other potential incentives to be vaccinated and context-specific incentives. This thesis aims to bridge the gap in research that has formed by the focus on barriers.

There were factors mentioned by the participants around vaccine hesitancy that I did not set out to find. For example, women's health was a very important factor to multiple of the participants, which was unexpected. In this regard, concern was brought up about the effectiveness of the vaccine for women versus men. Women's health was another aspect that cropped up in multiple interviews. Wollebæk et al. (2022) found that the female gender is a predictor towards low vaccine hesitancy in Norway. Despite this, women's health was a concern for multiple participants. This could present a future barrier that has a potential to grow into a larger issue in terms of vaccine hesitancy. Globally, women are more likely to be vaccine hesitant (Troiano and Nardi 2021), and Norway stands out in this way.

Though younger individuals are more likely to have higher vaccine hesitancy according to previous studies, which could stem from complacency barriers, the participants in this study tended to have personal complacency but not societal complacency. Understanding what influences those who do not see personal risk in a disease and choose to get vaccinated for others is critical. This could be influenced by cultural context, age group, or other factors.

Travel tended to be a major incentive for people to obtain the vaccine. The convenience of being able to travel was in multiple respondents' top factors to get the vaccine. This was also found in another study conducted in Norway about the COVID vaccine. In Kour et al.'s study (2022), as mentioned before in the literature section, a common incentive to take the COVID vaccine was the ability to travel. This thesis adds to the idea of the importance of travel in participants' lives, and the influence it has on vaccine choice.

Even if individuals had decided to get vaccinated, there was a call for the ability to choose whether one needed to take the vaccine. Personal choice was very important to the participants in the study. However, the reaction to the Norwegian government's stance was mixed. The communication about the vaccination choice seemed too intensive for certain individuals, but too lax for others. This is an issue that could be addressed in the future regarding how to communicate with different groups of people. No way of communication will be perfectly fit for the majority of the population, and as this is not a representative study, the success of Norway's communication should be researched with interviews on a broader scale.

The conflicting views around the government's choice on how to share information about vaccine safety is just one of the ways the participants differed. Perhaps there is an incentive for, in future incidents, to not just make the information on vaccine safety and possible side effects accessible through government sources, but also actively share and promote the information. This could lead to higher trust among the population. Alternatively, emphasizing the accessibility of the information and educating the public on where to find more information should be seen as a valid way to provide information.

Vaccine manufacturers could benefit from improving trust within the populations that are recommended their vaccines. This thesis found that there was some healthy skepticism surrounding the motivation of vaccine manufacturers, and a larger-scale study could attempt to see how widespread this distrust is. Although most individuals involved in this study chose to get vaccinated regardless, looking into trust for manufacturing companies could be beneficial for

other populations who may choose not to get vaccinated due to this lack of trust. Understanding how to improve levels of trust in these companies is important.

The context of these interviews being in Norway was important to understanding the data collected. Several participants mentioned the context of Norway in their reasonings for certain answers. As mentioned at the beginning of this thesis, the context of this study is important due to Norway having a high trust population (OECD, 2022). Cultural context is an important arena to study when it comes to vaccine hesitancy.

5.3 Limitations

These interviews were conducted with snowball interview selection, while trying to find a diverse population in age, gender, and political affiliation. However, due to the selection process, this will never be a representational study. Many of the participants were university students, which tends to be young adults within a similar age range. Through the snowball interviews, however, I was able to find individuals outside of this demographic, but it cannot be applied to a larger population.

One population that has been mentioned in multiple studies surrounding vaccine hesitancy is parental groups (i.e., Charo, 2007; Frew et al., 2014; Salmon et al., 2015; Palmeri et al., 2017) but the impact of parenthood was not explored in excess during the interviews. This is a subpopulation of Norwegians that was not directly represented in this thesis and should be studied in future studies. As this study focused on the individual reasons for vaccine uptake, the concerns of parents were not as relevant to personal decision-making.

There could also be more focus on specific populations, such as those from smaller communities outside of Oslo, or people who have immigrated to Norway. I had two participants who considered themselves immigrants, but it does not fully represent the importance of that group. Religious groups have also shown heightened levels of vaccine hesitancy (Hassen et al., 2022). Exploring how religion plays a role in vaccine decision-making in Norway could help position it culturally as well.

Another issue with the population interviewed for this study was the fact that multiple of them were personal contacts of mine. This was a positive and negative limitation in some ways. I was able to use the snowball method to find those outside of my personal network, but the majority ended up being personal connections. This meant that they were more likely to be open

with me and more relaxed during the interview processes, which is a positive. However, people tend to keep company with those of similar values, which is a negative value of having those of personal connections.

There was difficulty finding those who described themselves as vaccine hesitant as well. Although all participants showed a level of vaccine hesitancy, as it is a spectrum rather than binary, there were few who would fully call themselves skeptic to the COVID vaccination. In a larger study, not using snowball method interviews, this could be remedied due to the size of the study conducted.

Lastly, as mentioned in the methods section, most of the respondents were currently living in Oslo, and this study did not investigate how living in a smaller area may affect vaccine decision making. This could affect the perception of vaccines and vaccine hesitancy, specifically the accessibility of vaccines. Living in the largest city in Norway can affect the accessibility of vaccines, due to public transport and services available. Interviewing people only from Oslo puts a limitation on those who may live in more rural areas, such as up north. These areas could have more limited accessibility to vaccines.

5.4 Potential Future Research

These interviews are not a representation of Norwegian society, and thus the results are not meant to be taken as a complete study of Norwegian behavior surrounding vaccines. This study was conducted to help gain insight to the differences of Norwegian behaviors towards vaccine hesitancy and the COVID pandemic and assess some of what sets this country apart from others. As stated before, one of the limitations of the study was the size of the respondent group, along with the snowball type interviews. I believe that future research would be able to expand on this topic in a way that interacts with a larger, more diverse population.

This research can inspire future research in intra-national and international studies of vaccine hesitancy and can be used to pinpoint where specific differences lie between individuals and between societies. Understanding the reasons why people choose not to get vaccinated, and the factors behind these reasons, is essential for public health (Chou & Budenz, 2020). The COVID pandemic is a prime example of how vaccine misinformation can pose a large-scale threat to public health. Since different cultural contexts can affect reasonings behind vaccine

hesitancy, such as many of the interviewees not having hesitancy surrounding access of vaccines, each country needs to adjust to specific communication measures to improve trust.

Understanding the priorities of individuals and groups can also improve vaccine promotion. This thesis showed the importance of travel to many of the participants. When asked about top motivations to get vaccinated, travel was mentioned a multitude of times. Finding incentives such as these that can help reduce complacency potentially can help improve vaccine uptake. These priorities and incentives can be affected by cultural and individual contexts, so more research focusing on this topic is needed.

As mentioned earlier, research that explores intra-country contexts to vaccine hesitancy helps improve understanding of barriers towards vaccines (Steinmetz, 2022). For example, convenience barriers among participants in this study were influenced by not only perceived individual risk, but risk for others as well. This was seen in the convenience analysis, where social responsibility and social pressure were addressed. The concept of societal complacency versus individual complacency should be studied further and in a wider context. There is a potential that there are cultural contexts to convenience barrier, such as dugnad, and this should be examined further.

There were concepts brought up in the interviews that were unexpected to me, as mentioned previously. This showcases the importance of cultural context and should be explored in a larger population. A study similar to this one (Kour et al., 2022) delved into interviews with immigrant populations in Norway also using snowball sampling and recruitment. This realm of study could address other target populations in Norway for specific study, such as women or parents, or to expand the premise to the larger population in order to make the results generalizable. There is potential for more research on the Norwegian context and vaccine hesitancy, and it should be explored.

The discussions around travel, as I mentioned before, held a suggestion of personal freedom. Although the conversations revolved around international travel for the participants, in a larger study, or a study in a different cultural context, this could manifest itself differently. Even among these participants, there was still mention of personal freedom and autonomy. One of the other sections was on personal choice, which was important to multiple participants as well. Expanded research into the incentive to travel could unearth whether or not travel was truly the driving factor for vaccination, or if it was also linked to personal choice.

The participants in this study tended to come from the area of Oslo in Norway. Like with some United States studies found (i.e., Acharya & Dhakal, 2021) there can be varying opinions across a country as well as between countries. Focusing studies on other regions, such as in the north or on the west coast of Norway, could find significant differences in barriers and incentives to vaccine behaviors. Expanding beyond the reach of the capital city of Norway could uncover contextual differences within the country.

Vaccine hesitancy is complex and context-specific and is one of the major barriers to public health (WHO, 2019). Through in-depth interviews with Norwegians, I have added to the discussion on contextual factors on vaccine hesitancy, along with adding to the discourse on the 3 Cs of vaccine hesitancy. As mentioned earlier, there has been discussion on barriers pertaining to the 3 Cs and their overlap across the three categories (Kour et al., 2022). In this paper, I found this overlap as well.

As vaccine hesitancy is one of the biggest threats to public health, understanding the factors that play into this hesitancy is imperative for the future (WHO, 2019). Although efforts are made into promoting vaccine behaviors, there is no perfect way to combat vaccine hesitancy (Troiano & Nardi, 2021). It is an ever-changing phenomenon that is contextual and individual (Mayer et al., 2022). Seeking to understand this from individuals' perspectives in this project was a main goal of mine. Knowing how to communicate with vaccine hesitant individuals and understanding barriers is important for promoting vaccine rates in the future. This thesis aids in a step in that direction.

Although I conducted this thesis after the end of the pandemic as announced by the Norwegian government, the world that exists now can only be described as 'post-pandemic'. All the interviewees, in recent memory, have come face-to-face with imminent awareness of disease and vaccination. Their views on vaccines have been affected due to the pandemic, and being able to compare with pre-COVID is impossible. Future vaccines will be shaped by the society created by this era of health and fear, and it is important to learn from this.

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Appendix A

Interview Guide Questions

Confidence questions:

1. Describe your general opinion on vaccinations.
2. In your own words, what is a vaccine?
    a. What does it do to your body?
3. Do you know anyone who chooses not to get vaccinated?
4. Have you ever denied getting a vaccine?
    a. Why or why not?
5. Do you think it is important for everyone to get the recommended vaccines?
    a. Why or why not?
6. Do you believe that vaccine manufacturers are interested in your health?
    a. Why or why not?
7. Do you believe that local government is interested in your health?
    a. Why or why not?
8. Do you believe that the national government is interested in your health?
    a. Why or why not?
9. What are the Norwegian Government's views on vaccinations?
10. Do you feel like you get enough information about vaccinations?
11. Do you feel like you get enough info about vaccine safety?
12. Where did you get most of your news on the COVID pandemic and vaccination?
13. How did you feel when you first heard about the COVID vaccination?
14. Have you discussed this vaccine with anyone?
    a. How have you felt when sharing your opinion on the vaccination?
    b. Was there a difference in-person versus online?
15. Did you end up getting the COVID vaccination?
    a. If yes, why?
    b. If not, why not?
16. (If vaccine has been taken) How did you feel after receiving the vaccine?

17. (If vaccine has been taken) What factors would you say were most important when it came to accepting the vaccine?
18. Is there a stigma surrounding being vaccinated or not?
    a. How does the government affect this stigma?
    b. How about the media?
19. (If vaccine has not been taken) What factors would you say were most important when it came to rejecting the vaccine?
20. Are there steps that could have been taken during the pandemic regarding vaccinating the public?
    a. Please describe.

Trust and trustworthiness questions:

1. How did the government communicate about vaccinations?
    a. What about health authorities?
2. What was the government's motivation to create a vaccine and disseminate it?
    a. What about health authorities?
3. What are the values of Norwegian health authorities?
    a. The government?
4. Did the Norwegian government share all the information about the COVID vaccination with the public?
    a. Why do you think so?
5. What factors did the government consider with the vaccination?
6. Do you trust the Norwegian Government?
7. Where do you place your trust in terms of vaccine knowledge?
8. Do you trust media with vaccine information?
9. Describe your media experience during the COVID-19 pandemic.

Convenience questions:

1. Consider this situation: a vaccine is offered for free, but the time to travel is over an hour. Would you go to get vaccinated?

    a. Why or why not?
2. How easy is it to get a vaccine in Norway?
    a. What could be changed in Norway to make access to vaccines easier?
3. How easy was it to get the COVID vaccine in Norway?
    a. Compared to other vaccines?

Complacency questions:

1. Are there any vaccines that are not necessary anymore?
    a. Which ones?
2. Do you think there are vaccines that are more harmful than helpful?
3. What impact did COVID have on your personal life?
4. Do you see COVID as a dangerous disease?
    a. What was your personal perceived risk of COVID, ranked from high to low.
    b. What was others' perceived risk of COVID, ranked from high to low.
5. Did you think that COVID was directly harmful to you or your family?
6. Was the COVID vaccine harmful or helpful?

Probing questions:

1. Can you go more in depth on that answer?
2. Could you tell me more about…?
3. Elaborate on that.

Demographic questions:

1. What is your gender?
2. What is your age?
3. What is your nationality?
4. What is your occupation?
5. What is your highest level of education?
6. How would you describe your political views?

7. Did you vote in the last national election?
    a. If so, what party did you vote for?
8. Have you lived in other countries?

Final questions:

1. Is there anything else you would like to share?
2. Are there any answers you have given that you would like to clarify?

Appendix B

Consent Form and Information Letter

Are you interested in taking part in the research project

"Vaccine Attitudes in Norway during COVID-19"?

This is an inquiry about participation in a research project where the main purpose is to understand the different roles of vaccine hesitancy in Norway. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project
By researching this topic, this seeks an insight on promoting public health through vaccinations and reducing uncertainty surrounding vaccinations, especially during a pandemic. Understanding the attitudes and reasons of those who did get vaccinated and those who did not could help improve communication in future health crises. It is also important to understand the turning point, where vaccination-hesitant people chose to get the vaccination can help understand what convinced them. I will also interview those who did choose to get the vaccination for this reason.

This is a master's thesis project, and the main question is "What were major influences on personal vaccination choices during the COVID-19 pandemic?" The main goal of the project is to search for a relationship between concepts such as trust and vaccination choices, but also to hear personal testimonies from Norwegian individuals.

Who is responsible for the research project?
The University of Oslo is the institution responsible for the project.

Why are you being asked to participate?
You are being asked to participate in this study due to interest shown by you. You are Norwegian and have indicated that you were sceptical of the COVID-19 vaccination or trusted the COVID-19 vaccination, whether you have chosen to take it or not, which makes you a proper candidate for this research project.

What does participation involve for you?
If you chose to take part in the project, this will involve that you participate in an interview, either in person or through Zoom. It will take approx. 45 minutes. The interview includes questions about personal opinions on the COVID vaccine, your personal vaccination status, and media consumption habits through the pandemic. I will record the interview audio only, no visual recording, and will take notes throughout, and the audio recordings will be transcribed by myself.

Participation is voluntary
Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason until publication of the project. All information about you will then be made anonymous and will not be shared outside of the confines of the

project, and upon request, will not be included in the project. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data
We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- In connection with the institution responsible for the project, Sarah Carthum and Dr. Øyvind Ihlen will have access to the personal data.
- I will replace your name and contact details with a code. The list of names, contact details and respective codes will be stored separately from the rest of the collected data, and the data will stored on an encrypted server.

What will happen to your personal data at the end of the research project?
The project is scheduled to end November, 2023. All data, including audio recordings, transcripts, will be removed from the encrypted storage and destroyed by the end of December, 2023.

Your rights
So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?
We will process your personal data based on your consent.

Based on an agreement with the University of Oslo, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?
If you have questions about the project, or want to exercise your rights, contact:

- University of Oslo via Sarah Carthum and/or Dr. Øyvind Ihlen.
- Our Data Protection Officer: Roger Markgraf-Bye
- NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17.

Yours sincerely,

Sarah Carthum

(Øyvind Ihlen)

Consent form

I have received and understood information about the project *Vaccine Attitudes in Norway during COVID-19* and have been given the opportunity to ask questions. I give consent:

- ☐ to participate in an interview
- ☐ for my personal data to be processed outside the EU
- ☐ for information about me/myself to be published
- ☐ for my personal data to be stored until the end of the project

I give consent for my personal data to be processed until the end date of the project, approx. May 2023.

(Signed by participant, date)