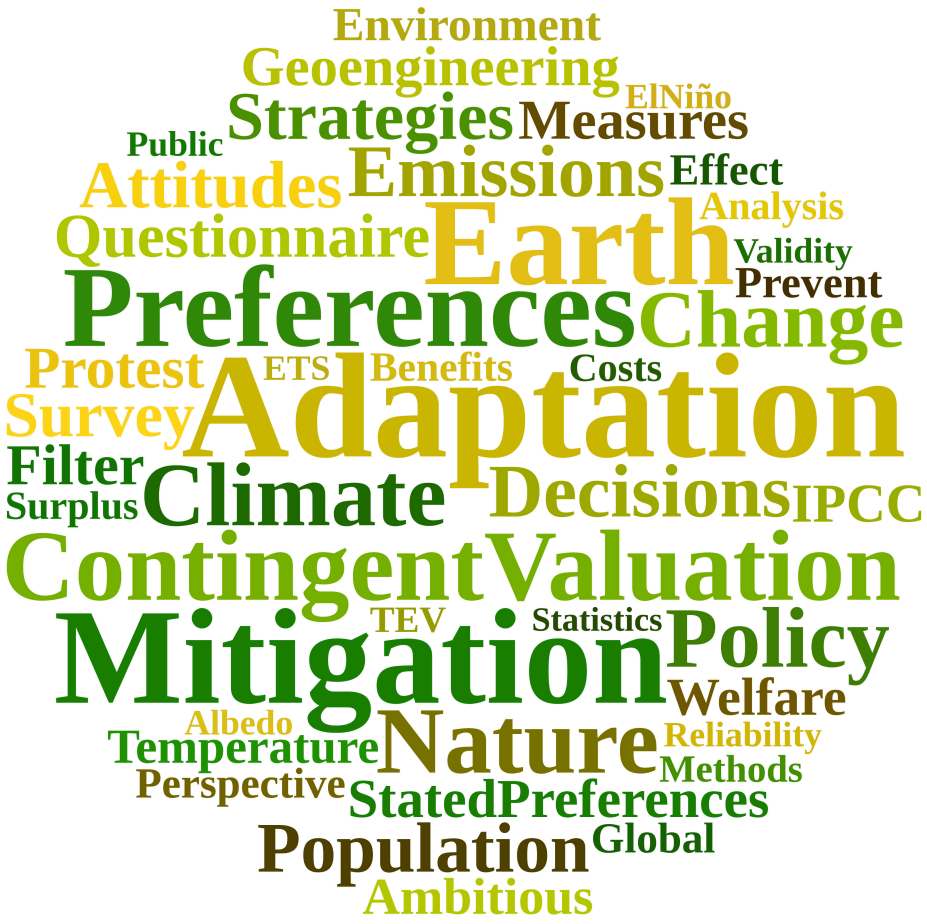
CLIMATE CHANGE POLICIES IN NORWAY: PREFERENCES FOR PLAN A VERSUS PLAN B



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ENGELSK TITTEL: Climate Change Policies in Norway: Preferences for Plan A versus Plan B

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"Men argue, nature acts"

– Voltaire

Abstract

This contingent valuation study provides rare willingness-to-pay (WTP) estimates for climate policies in Norway. The highly controversial topic climate change policy, associated with massive costs, emphasizes the importance of policy-makers founding their decisions on the general publics vote. Norway is often considered a pioneer within climate politics because of the country´s ambitious target levels for CO_2 reduction and early adoption of emission taxes, but to what degree are the policies supported by the Norwegian population?

In this thesis we examine the Norwegian population´s attitudes, knowledge, and preferences for climate policies. More specifically we investigate the willingness to pay for mitigation strategies versus adaptation strategies. Based on a survey of 1164 Norwegian adults, results show that the majority generally has a positive WTP for climate policies. On average Norwegian households are willing to pay somewhere between 1200 and 2500 NOK per year in support of implementing some climate strategy.

The initial analysis indicates that there is no difference between the WTP for mitigation versus adaptation, or among the various policies that exist within the mitigation or adaptation categories. However, a discrete policy-choice question implies that if Norwegian people were allowed to choose among the five policy scenarios, a considerable majority prefers that Norway participate in a global cooperative mitigation strategy.

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Acknowledgements

This thesis signifies the completion of a Master´s degree of Business Administration at the University of Stavanger Business School. In the course of the work we have been devoted to apply our academic skills further and to deliver a product that reflects the knowledge and competence acquired from the Master´s education. Therefore we can now, with great pleasure and satisfaction, present the final outcome.

We emphasize that this thesis is solely a result of our independent efforts, and that we are responsible for any statements or conclusions made. The research is carried out under the supervision of our mentor, Gorm Kipperberg, Ph.D., who deserves a special mention. Your extraordinary dedication to and passion for the academia has been genuinely inspiring and motivating, thank you for always having time (that is, whenever you are not working out). Comments and advice from Petter Andreas Gudding and Leidulf Grude are highly valued, as well as the copy-editing assistance from Jordon LaGrone, thank you all.

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1. Introduction

One of the greatest challenges of our time is facing the adverse effects associated with climate change. Considerable efforts will have to be made in the coming years to combat (Plan A) or adapt to such changes (Plan B). Despite vast research in the field, questions still remain with regard to the optimal strategy and the measures that should be implemented. Until recently climate politics have in general been mainly focused on mitigation to counteract the negative effects associated with climate change. Nevertheless, nowadays it seems that the international community is in the process of incorporating adaptation strategies to a greater extent.

Norway, being one of the world´s largest oil producers and richest countries, is committed to pursuing an ambitious climate policy. In the light of this, billions of Norwegian kroner (NOK) are spent annually on mitigation aimed at reducing greenhouse gas (GHG) emissions. Considering the fact that the total Norwegian emissions only account for 0.2 percent of global emissions, many disapprove of public budgets being devoted to costly actions. To address such skepticism, the Norwegian government recently released a bulletin on climate adaptation (Ministry of the Environment, 2013), acknowledging the necessity of also implementing such strategies in Norway. Consequently, this development addresses the importance of identifying the public´s preferences for climate policies.

TNS Gallup (2011) and Synovate (2011) annually present statistics regarding the Norwegians attitudes towards climate change. However, none of these elicit any monetary values, referred to as the willingness-to-pay (WTP), in order to monetize the benefits and costs associated with the effects of climate change and implementation of different types of climate policies. The overall objective of this thesis is to fill this knowledge gap.

The international literature studying the value of environmental goods, services, and policy objects is well established (Bateman et al., 2002; Champ et al., 2003; Adamowicz, 2004; Pearce et al., 2006; Alberini and Kahn, 2006; Carson, 2012). Numerous of studies have been performed using different methods and focusing on various environmental aspects. The most applied methods are Contingent Valuation and Choice Experiment. Contingent Valuation (CV) is by far the most broadly employed method, which is reasonable considering that the method is based on

hypothetical scenarios. Other methods used include the Travel Cost Method, where people´s behavior in paying for goods because of their environmental attributes is implicitly observed, and Hedonic Pricing where environmental attributes can lead to price differentials on otherwise similar goods (O´Conner and Spash, 1999). Some studies have used the Travel Cost Method; for instance where tourists´ travel destinations have been related to climate (Abegg, 1996), certain weather conditions and their attractiveness to tourists (Matzaralis, 2002), and studies where certain groups of tourists have been related to weather and climate in order to develop statistical models (Maddison, 2001). Within Hedonic Pricing climate is most commonly treated as a determinant of wage and housing prices (Roback, 1982), as well as property prices (Englin, 1996). A more recent study by Rehdanz (2002) considered the amenity value of climate on British households, and used the Hedonic Pricing approach to derive the marginal WTP for small changes in climate variables.

The majority of CV studies are focused on valuing environmental goods or policies related to the nature or climate. A considerate proportion of these studies focus on climate policy, and aim at climate mitigation. In these studies the policy objects or environmental goods under valuation reflect what can be distinguished as a direct or indirect approach to climate policy valuation. Directly, this is typically done by asking the public for a determination of WTP to reduce CO_2 emissions through a mitigation policy (Bohringer and Vogt, 2004; Cameron, 2005; Viscusi and Zeckhauser, 2006; Brouwer et al., 2008; Akter and Benett, 2009; Adaman et al., 2011; Kotchen et al., *forthcoming*) or WTP to avoid either global or local climate change (Lederberger et al., 1994; Berk and Fovell, 1999; Berrents et al., 2004; Lee et al., 2010). Studies using an indirect approach either analyze attitudes towards renewable energy or willingness to pay for renewable energy programs or investments. Preferences and WTP for green electricity have been investigated internationally (Roe et al., 2001; Nomura and Akai, 2004; Menges et al., 2005; Bergmann et al., 2006; Longo et al., 2007; Wiser, 2007), as well as more specifically, on wind farms and wind power (Alvarez-Farizo and Hanley, 2002; Ek, 2005), hydrogen buses (O´Garra et al., 2007), and ethanol (Solomon and Johnson, 2009; Petrolia et al., 2010).

On the contrary, applications of Choice Experiment (CE) in studies on climate policies are limited. The most well known study on mitigating policies using CE was carried out by Layton and Brown (2000), where they investigated preferences for programs reducing ecological damage from climate change. Interestingly, this

research also had an element of adaptation in the articulated forestry policy which included tree planting. Other examples are associated with WTP for reduction in emissions by car buyers in Germany (Achtnicht, 2009) and clean-fuel vehicles (Ewing and Sarigöllü, 2000; Potoglou and Kanaroglou, 2007).

CV studies centered on adaptive climate policies are also found in the literature. A study was performed on conservation of the environment in China (Han et al., 2011), where respondents were asked on their WTP for conserving natural attractions at Kanas Nature Reserve. However, most research on adaptation strategies is associated with farming in the less developed parts of the world. Given their belief about climate change, African farmers´ attitudes towards adaptation strategies have been studied by Maddison (2006), Deressa et al (2008), Hassan and Nhemachena (2008), and Gbetibouo (2009), while Yesuf et al (2008) emphasized adaptation explicitly in food production in low-income countries, whereas Bamidele et al (2010) draw attention to irrigation facilities in Nigeria.

In Norway CV studies on climate policies are very limited, though examples do exist of research on the valuation of environmental goods (Seip and Strand, 1992; Magnussen, 1991; Navrud, 1991; Strand and Taraldset, 1991). The most relevant research on attitudes, behavior and preferences in Norway is, as mentioned earlier, performed by TNS Gallup, who is known for their "climate barometer", as well as Synovate AS, that present the annual study known as "The Great Norwegian Climate Survey".

Addressing the challenges of global climate change, decisions have to be made with regard to further development of climate policy strategies, what measures to implement, their respective budgets, and to what extent Norway should take on an active role in global climate affairs. With attention to the current climate policy pursued in Norway, to which extent does it coincide with the preferences of the Norwegian population?

The objective of this study is to answer this overall question. The research will be performed by investigating the attitudes, knowledge, and willingness-to-pay (WTP) for climate policies in the Norwegian population. The analysis will be accomplished through implementation of a contingent valuation (CV) study in which we, ambitiously, also aspire to make a contribution to the literature on preferences and WTP for climate policies in general. Based on the scarce research that addresses WTP for adaptation, this thesis will per se be a frontier on valuation of adaptive measures.

Data come from an original survey implemented on a random representative sample of Norwegian households in April 2013.

Based on the proposed research design we aim to answer the following research questions:

1) Is the WTP for measures that will prevent climate change less, equal, or greater versus the willingness to pay for adapting to climate change?

2) Do differences in WTP for various policies exist within the mitigation or adaptation strategies?

3) What factors affect WTP and can explain differences in WTP (if any) between preventive climate action and initiatives aiming to adapt society to climate change?

The remainder of this paper is structured as follows. Chapter 2 presents and defines the relevant issues regarding climate. Chapter 3 describes the theoretical framework for environmental valuation, more specifically the welfare economics of non-market valuation. A compressed classification of the environmental valuation methods, mainly focused on the CV method, is outlined in Chapter 4.

Chapter 5 describes the survey instrument, the design process, implementation of survey, and descriptive statistics for the sample. Chapter 6 provides the econometric models, with necessary specifications, used to answer our research questions. Chapter 7 reports the empirical findings, which are further discussed in Chapter 8, along with considering implications for further research. Final conclusions are offered in Chapter 9.

2. The Climate

2.1 The Issue

In recent decades the discussions concerning climate change have been extensive, and increasingly efforts and resources have been devoted in attempting to explain the causes and consequences of this phenomenon. It is a broadly accepted opinion that the cause of climate change is largely related to anthropogenic emissions of greenhouse gases (GHG), and numerous research papers and reports have attempted to forecast the effects of inaction. This is a difficult task, though, due to many unknown or uncertain factors and the extent to which changes in the complex climate system are linked to human activities.

The core of the problem concerns the correlation between global warming, climate change and emissions of GHG. Relative to a 1961-1990 average, the average global temperature has risen steadily since the early 1900s (IPCC, 2007a). At the same time, GHG emissions, mainly through consumption of fossil fuels, has increased since pre-industrial times. Between 1970 and 2004, human emissions of GHG increased by 70 percent (IPCC, 2007a). A report carried out by the World Meteorological Organization observed a record high atmospheric concentration of greenhouse gases in 2011 (WMO Statement, 2013). The consequences of climate change and global warming are thought to be severe, including less fresh water, disturbed ecosystems, sea level rise, more extreme weather such as droughts, floods and storms, and changing farming requirements (IPCC, 2007b). Although there are articles that question the dominant perception of (or the relationships between) global warming and climate change (Pielke et al., 2005; McLean et al., 2009; Raper & Braithwaite, 2006; Carter R. M., 2007), most researchers disregard climate change as non-related to global warming and endorse the view of human influenced increase in atmospheric concentration of CO_2. (Anderegg et al., 2010).

2.2 What is climate

According to the World Meteorological Organization (WMO), **climate** can be defined as average weather over time, calculated statistically by mean and

variability from a sufficient amount of observations (WMO: Understanding Climate, n.d.). Average weather is calculated on the basis of normal values (normals), variability and extreme values, where the **normals** are average values for specific 30-year periods. Internationally accepted agreements use normals as uniform standards worldwide, and the 1961-1990 normals are the current reference standard. Variations tell to what degree the weather can change without being considered a deviation from normals. For example, if the normal temperature in a specific area at a specific time is, say, 20 degrees Celsius, an observation of 24 degrees Celsius is considered within the limits of natural variation. The extreme values are the maximum and minimum observations in a certain place or area.

2.3 What affects the climate

The temperature on Earth is relatively stable because equilibrium is established between radiant energy from the Sun and the energy dissipated into outer space. About half of the solar radiation hitting Earth is reflected by gases, clouds or particles in the atmosphere, or by snow, ice and deserts on the surface of the Earth. The energy from the other half is distributed by the solar angle to the horizon. Due to the curvature of the Earth, the equator region, reaching from the Tropic of Cancer at about 23.5ºN to Tropic of Capricorn at about 23.5ºS, receives annually 2.5 times more energy than the poles (Christophersen, 2012). The reason is that this area is near perpendicular to the solar rays. During the year the variations in the Sun's altitude above the horizon cause differing levels of insolation, which results in seasons.

The imbalance in energy distribution causes differences in pressure and initiates large wind systems. The warm air in the tropical regions rises and leaves a void which is replaced by heavier cooler air from higher latitudes both north and south of the equator. The rising air hits the bottom of the stratosphere and scatters in all directions, and eventually replaces the cold air that was drawn towards the equator at the surface. This particular wind circulation (such wind circulations are commonly referred to as "cells"), reaching from equator to latitudes 30ºN and 30ºS, is called the Hadley-cell. There are two other major wind circulations; the Ferrel-cell between latitudes 30º and 60º and the Polar-cell between latitudes 60º and 90º.

Like wind systems, the ocean is also influential on climate. Because water has a better capacity to retain heat than soil and bedrock, currents from lower latitudes

ensure a milder climate at higher latitudes. The heated surface waters of the equator are driven westward by the trade winds, hitting the eastern side of the continents and forced both northward and southward to higher latitudes. Some of the currents flow in large circles within or nearby the tropic areas, whereas others move further north and south towards the poles and travel the full extent of the ocean basins. In the Northern Hemisphere, the Gulf Stream is the most prominent current and provides the east coast of North America and west coast of Europe with mild seawater (Christopherson, 2012).

The greenhouse effect is the last major component of the climate system, and undoubtedly the most important one. The presence of this phenomenon makes the earth hold an average temperature of 14 °C instead of an uncomfortable -18 °C that would be the reality without the greenhouse effect (Mathismoen, 2008). This name stems from the similarity to a greenhouse's ability to let solar radiation pass through the glass roof, while preventing ground heat from escaping, due to different wavelengths. Most of the solar energy hitting the Earth's surface is absorbed through mountains, soil, water and trees, but the Earth itself has reflectivity in the form of snow, glaciers and deserts. The Earth's albedo is about 30 percent on average, which means that almost 1/3 of the solar radiation hitting Earth is reflected. Some of the returning energy disappears into space but much of it is reflected by the gases, clouds and particles in the atmosphere and once again returns to the surface of the Earth. This is **the greenhouse effect**; the atmosphere's ability to retain energy (heat). About 99 percent of the atmosphere consists of nitrogen and oxygen, but because they have no particular greenhouse effect they are not considered to be greenhouse gases. It is the final percentage that is the center of attention from a climate change perspective. The most important greenhouse gas is water vapor, which is (together with clouds) accountable for 2/3 of the greenhouse effect, followed by carbon dioxide (CO_2), methane, ozone, man-made CFC-gases and nitrous oxide (Mathismoen, 2008).

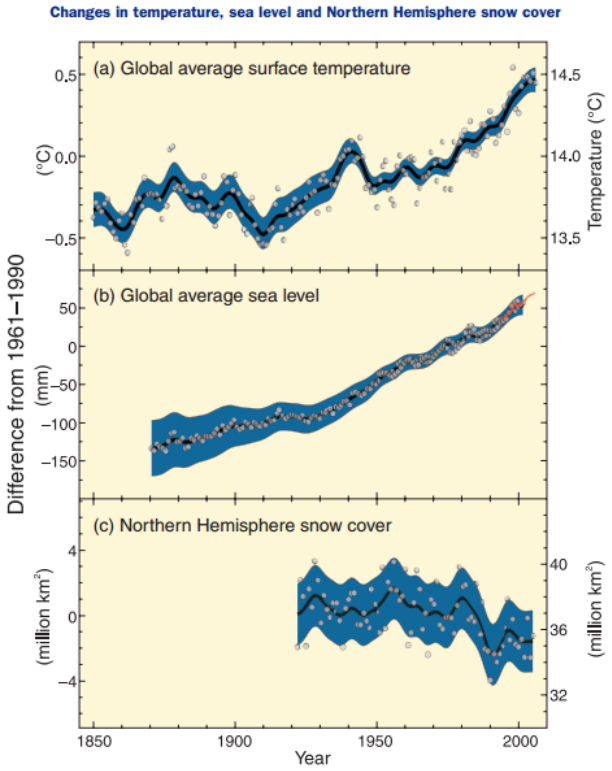
2.4 History of climate and temperatures

The Earth has historically passed through several ice ages. The current ice age began a couple of million years ago, and has been characterized by periods of alternating cold and warm climate (glacial/interglacial periods), where the last 10 000 years

have been a relatively warm interglacial period (Henriksen and Kanestrøm, 2001). Until around the 1980s, the terms "Medieval Warm Period" (Lamb, 1965) and "The Little Ice Age" (Matthes, 1939) had been used to describe two periods of noticeable, global differences in temperatures and climate during the last 1200 years. More recent research, however, has suggested that this may have been a more regional phenomenon (Hughes and Diaz, 1994; Bradley and Jones, 1993). The Intergovernmental Panel on Climate Change (IPCC), who is in possession of most studies in this field, has also questioned the magnitude of these events and essentially concluded that they do not prove an increase or decrease in average global temperatures at the time of occurrence (IPCC, 2007a). This is due to the lack of clear cut large-scale global averages, and because of imprecise dating of when affected areas experienced the events. Thus, it is difficult to state *why* there possibly was a medieval warm period or little ice age. It could have been natural variations in regional climate patterns instead of actual changes. The early evidence of a Medieval Warm Period is limited to the North Atlantic region (IPCC, 2007a). So in order to define a comprehensive, global warming period in the Middle Ages, more paleoclimatic information must be collected globally and be compared to recent temperature measurements.

Humans have only been able to measure temperatures systematically and reliably in the past 150 years. Prior measurements are estimates based on indirect data such as growth rings in trees, sediment samples from water, and studies of isotopic composition of oxygen in glacier ice. Information about temperatures today comes from a variety of sources such as satellites, aircraft, weather balloons and land stations. The global average temperatures since 1850 are illustrated in figure 2.1(a) below. The figure also shows the increase in global average sea level (b) and decline in the Northern Hemisphere snow cover (c). The left side (y-axis) of the figure represents deviations relative to the 1961-1990 average and the blue areas are the uncertainty intervals.

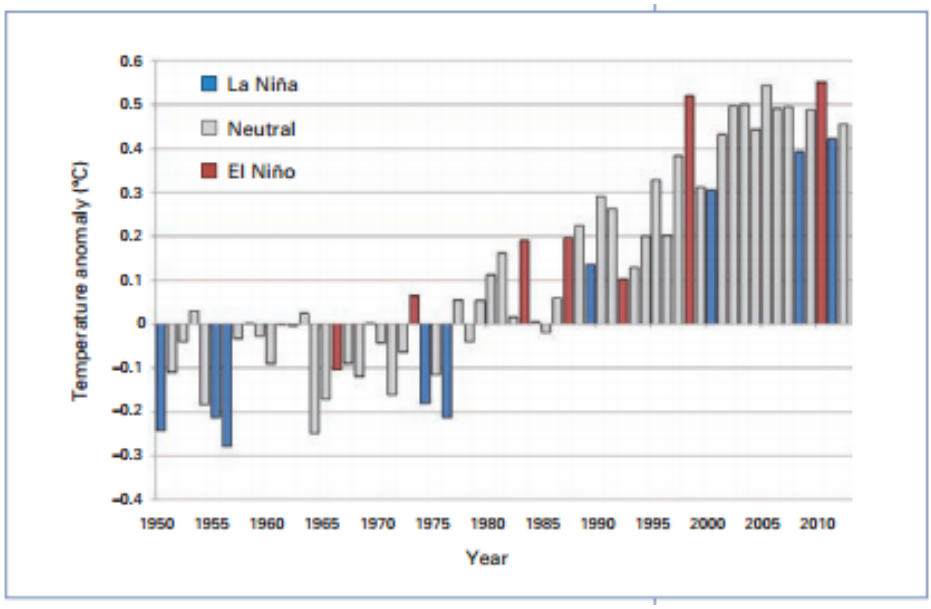
Figure 2.1 – Changes in temperature, sea levels and Northern Hemisphere snow cover 1850-2000



Source: IPCC (2007a) Fourth Assessment Report: Synthesis Report, Summary for policy makers, figure SPM. 1, p. 3.

The figure illustrates a fairly steady increase in the global average temperature since 1910. A comparison of the 100-year linear trend (1906-2005) to the corresponding trend (1901-2000) noted in the Third Assessment Report (IPCC, 2001) shows an increase of 0.14°C (from 0.6 to 0.74) (IPCC, 2007a), which may indicate an increase in the rate of change of global temperature. According to a statement from the World Meteorological Organization (WTO), "*The last eleven years (2001-2011) were among the top warmest years on record,…*" (WMO Provisional Statement, 2012 p. 1). It was also confirmed by WTO's final status report that 2012 was not any different and ranked as the 9th warmest year on record (estimated to be 0.45°C ± 0.11 above the 1961-1990 average) (WMO Statement, 2013). The status report also state a rise in global sea levels (20 cm since 1880), consistent with the trend in figure 2.1 (b), and a record loss of Arctic sea ice from August to September (18 percent down from the previous record in 2007). Even though the last ten years are among the warmest recorded, figure 2.2 below seems to indicate stabilization in global temperature, perhaps even slight reduction.

Figure 2.2 – The global temperature 1950 – 2010



Source WMO statement on the status of the global climate (2012)

One possible explanation is that temperature measurements are at times highly influenced by natural events like ENSO (El Niño – South Oscillation), a phenomenon that occurs in the Pacific Ocean at irregular intervals and contributes to both warmer (El Niño) and colder (La Niña) weather patterns. It has been demonstrated that correcting for the ENSO effect suggests very slight evidence of cooling, and most likely a continuing increase average global temperature (Jones, 1994; Fawcett, 2007; Fawcett and Jones, 2008). Regardless of the influence of ENSO, shorter periods of deviations are of little relevance for the long-term trend and expected as a result of natural variations (Easterling and Wehner, 2009). This is evident in that the total snow cover on the Northern Hemisphere was above average levels during the winter of 2011/2012, and that the Antarctic sea ice reached an all-time high during its growth season in 2012 (since records started in 1979) (WMO Statement, 2013).

The data presented here is not an exact science and based on estimation and interpretation of climatic data which leads to uncertainty due to the use of different data sets, models and methods. Differing interpretations and estimates can lead to different conclusions. Even the IPCC uses concepts such as "likely" and "very likey" to describe probabilities. Thus, the lack of concrete, robust, and unambiguous evidence may justify Bob Carter's (2007) reassessment of the anthropogenic global warming.

2.5 The IPCC

In 1988 the **Intergovernmental Panel on Climate Change** (IPCC) was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO). Since then IPCC has been the most prominent provider of updated and validated information on climate. The IPCC does not conduct own research, nor does it interfere with, influence or participate in any other research. The purpose of IPCC is to review and assess contributions submitted by thousands of researchers worldwide. The organization is committed to "…*provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts*" (IPCC, n.d.). IPCC publishes a range of reports following strict guidelines and procedures. The preparation of reports involves views and objections from governments and experts all over the world to ensure objectivity and balance. Most comprehensive is the Assessment Report, published at regular intervals (most recently in 2007, the next, fifth assessment report, is expected to be released during 2013/2014) and contains the latest information relevant to understanding climate change, potential impacts and mitigation and adaptation options. The Assessment Reports are supported by Special Reports, Methodology Reports, Technical Papers and other material.

2.6 Projected climate change effects

The IPCC projects the effects of climate change to cause severe problems around the globe. The consequences of climate change are varying with time and region. Some will occur by 2020 and others will not be felt until the end of the present century. The intensity of different effects also varies between regions and continents. The Fourth Assessment Report (IPCC, 2007b) presents the following projections of the major climate change effects within the next hundred years (affected continents in parenthesis):

- Water stress/water security problems (Africa, Asia, Australia/New Zealand, Latin America).
- More frequent coastal and/or inland flooding (Africa, Asia, Europe, Australia/New Zealand, North America).

- Reduced yields on agriculture (Africa, Australia/New Zealand, Europe, Latin America, North America)
- Increased frequency or intensity of extreme weather like droughts, heavy precipitation, wildfire and hurricanes/typhoons (All continents, excluding polar regions).
- Change in biodiversity (All continents including polar regions).

All the effects mentioned represent an increased threat to human health. Reduced snow cover, desertification, coastal erosion and other changes are more regional in nature but still of great importance when describing climate change consequences. According to IPCC, some regions, especially at higher latitudes, may experience some short-term benefits (i.e increased yields on agriculture) but these are insignificant in the long run.

Figure 2.3 provides examples of the consequences of extreme weather as estimated figures from five different extreme events occurring in 2012.

Figure 2.3 – Estimates of casualties, number of people affected and losses for five significant extreme weather and climate events

ESTIMATES OF CASUALTIES, NUMBER OF PEOPLE AFFECTED AND LOSSES FOR FIVE SIGNIFICANT EXTREME WEATHER AND CLIMATE EVENTS

Event	Location	Date	Casualties	No. of affected	Losses (US$)
Hurricane *Sandy*	The Caribbean and contiguous United States	Late October	Over 230	~62 million	~70 billion
Typhoon *Bopha*	Mindanao, Philippines	Early December	Over 1 000 fatalities, with nearly 900 people missing	~6 million	Over 49 million
Cold wave	Most of Europe and northern Africa	Mid-January to early February	Over 650	—	~660 million
Floods	West Africa	July–September	340	~3 million	5.8 million
Drought	Contiguous United States	Throughout the year	—	164 million	Multi-billion

Source WMO Statement on the Status of the Global Climate (2012, p.10)

The estimations show that such events have dramatic impacts, either it being loss of lives, number of affected or pure economic consequences.

2.7 Climate Policy Definitions

In climate policy, it is common to distinguish between the approaches mitigation and adaptation. **Mitigation** refers to all measures intended to prevent or counteract the effects of climate change. Such measures include for example reduction in GHG emissions, abatement, carbon capture and storage, forestry measures, investments in climate-friendly technologies, or research and development of renewable energy sources (IPCC, 2007b). **Adaptation** refers to all measures intended to improve human adjustment and reduce vulnerability to the effects of climate change. For instance, adaptive measures can include development of new settlement patterns, construction of dams/barricades, coastal protection measures, enhancement of infrastructure and buildings, adaptation to changes in biodiversity and ecosystems, and increased investments in healthcare (IPCC, 2007b). Included among adaptation measures is also geoengineering, which is explained in more detail in section 2.8.3.

2.8 Climate (change) policies

2.8.1 Global perspective

Although the issues of climate change and potential impacts have been subject to rigorous discussions at various international summits for decades, it has been impossible to decide on a coordinated global response strategy.

The protocol of the United Nations Framework Convention on Climate Change (UNFCCC), commonly referred to as the Kyoto Protocol became effective in 2005. The Kyoto Protocol has stipulated that developed countries must set internationally binding emissions targets, which has led to the development of reduction instruments such as emission trading systems and the Clean Development Mechanism (CDM). All industrialized countries adopted the Protocol and committed to reduce GHG emissions by specific targets during the first commitment period from 2008 to 2012 (UNFCCC, 2008).

The Protocol is now entering a second commitment period in which the committed parties have agreed to cut emissions by 18 perspect from their respective 1990 levels by 2020 (UNFCCC, 2012). The absence of legally binding emission targets for big, industrialized emitters like Russia, Canada, the USA and Japan, in addition to developing countries like India, Brazil and especially China is a significant challenge

to the UNFCC. In 2010, China and the USA alone were responsible for over 40 percent of the total global emissions (IEA, 2012). Their reluctance to commit is a weakness of the Kyoto Protocol which slows down further work on international climate agreements. The IPCC points out another weakness in the Protocol; that emission reductions targets are too small to have a significant effect on the atmospheric concentration of CO_2. Yet, the IPCC consider the Protocol as the first step towards an overall commitment to fight against global climate change (IPCC, 2007c). The comparison of efforts made by different countries within a large-scale agreement can be complex and resource-intensive. As alternatives, the IPCC proposes to increase the focus on development, enhancement and adoption of sectoral and sub-national agreements in areas like research and development, common policies and financing (IPCC, 2007c).

To better the grounds for decision-making related to climate change strategies, Espoo, Finland hosted in 2006 a conference in which resulted in the Report of the WMO Conference on Living with Climate Variability and Change: Understanding the Uncertainties and Managing the Risks (WMO, 2009). The main recommendations were to expand and improve collaboration between providers of climate information to enhance assessment and management of climate related risks, and to develop and apply risk management methods through common policy framework. This forms the basis for a proactive approach which is preferable because of the limited flexibility in a wait-and-see approach (Easterling et al., 2004; Smith, 1997).

2.8.2 Norwegian perspective

Emissions of GHG in Norway are less than 0.2 percent of total global emissions, but there is a broad agreement among Norwegian politicians that Norway should pursue an ambitious national climate policy. The argument is based on that rich countries like Norway should have more responsibility for reducing GHG emissions and to be a pioneer in the prevention of climate change.

The Norwegian climate policy is rooted in the Parliamentary Climate Settlement (Stortingets Klimaforlik, 2008; 2012). The settlement is based on international agreements Norway has committed to (including the Kyoto Protocol). These agreements imply that Norwegian GHG emissions will be reduced by 22 to 24 million tons of CO_2 equivalents by 2020, representing approximately 30 percent

reduction from 1990 levels. As part of this target it has been determined that at least 2/3 of this reduction will be accomplished domestically, and up to 1/3 through purchases of carbon offsets or investments in climate friendly initiatives abroad. By 2050, Norway will be completely carbon neutral based on these target levels. Beginning in 2013, emissions from process industries are included in the EU's emissions trading system which means that about 80 percent of Norwegian emissions will be subject to some form of carbon tax (Ministry of the Environment, Report no. 21 (2011-2012)). A comprehensive report commissioned by the Ministry of the Environment in 2010 has analyzed various measures and means to map available options, and their respective consequences, to authorities, in order to reach the domestic objectives set out in the Climate Settlement (Klimakur 2020, 2010).

Resources allocated to Norwegian adaptation measures are increasing. The assessments of climate change impacts and mapping of vulnerable areas are in progress. Established guidelines for exchange of information and increased efforts in research provide expansion of capacity and expertise. Due to the different effects of climate change around the country, the responsibility for developing adaptation strategies are transferred to local authorities in accordance with governmental guidelines (Ministry of the Environment, Meld. St. 33 (2012-2013)).

2.8.3 Geoengineering

Geoengineering is a relatively new concept that aims to manipulate nature in order to control the global temperature. The development of geoengineering is at early stages and major questions have to be answered regarding technical feasibility, costs and environmental consequences before full-scale measures can be undertaken. In addition, the ethics associated with deliberately altering the forces nature must be considered carefully. The UK's Royal Society (Shepherd, 2009) divides the methods of manipulation into two categories; carbon dioxide removal (CDR) and solar radiation management (SRM). The main differences between the categories are the way they handle the global warming problem and the time frame for when implemented measures act on the climate.

The Royal Society consider CDR methods to be safer in that they remove the cause of global warming (by decreasing the concentration of CO2 in the atmosphere), however it will take decades to benefit from the effects. SRM methods affect climate more quickly but at the cost of greater uncertainty, risks and consequences. The first category includes methods that enhance uptake and

storage or removal of CO_2 by biological systems or by using engineered systems of physical, chemical or biochemical nature. Examples of CDR are; using land management to enhance carbon sinks (Lal, 2004; Cannell, 2003); fertilizing oceans to increase oceanic uptake of CO_2 (Watson, et al., 2000); enhancing natural weathering processes; or capturing CO_2 directly from the air.

SRM methods aim to limit absorption of solar energy by increasing the Earth's albedo or by preventing a part of the solar energy from reaching the surface at all. The techniques range from the simple actions such as painting rooftops white to injecting aerosols into the atmosphere to extremely ambitious tasks like placing reflecting mirrors in space. Bickel & Lane (2009) find that some SRM methods have the potential to be highly cost-efficient, but substantial research must be initiated to work out major scientific and engineering uncertainties. On the other hand, Goes & Keller (2011) conclude that the method of injecting aerosols into the atmosphere can be economically ineffective, due to the risks associated with a failure to uphold such injections.

3. Welfare Economics for Non-market Valuation

Non-market environmental valuation is founded on microeconomic welfare theory. With the utility maximizing consumer at the center, welfare economics focuses on the efficient allocation of resources in the economy, and how it affects social welfare (Freeman, 2003). Thus, measurement of welfare associated with changes in quantity or quality of public goods is key to an optimal allocation of resources. Public goods, being both non-rival and non-exclusive, and resources with considerable externalities, are associated with lacking price signals and unclear property rights. These, in turn, induce distorted incentives and inefficient allocation of scarce resources. Such *market failure* caused by under-valued public goods is likely to bias standard cost-benefit analysis. Public intervention may lead to an improvement of market conditions, and is rationalized by the idea of potential Pareto improvements (Haab and McConnel, 2003). However, public action is contingent on the social benefit outweighing the social cost which leads one to the problem of deriving welfare measures based on individual preferences.

3.1 Utility Maximization with (exogenous) Public Good

An important assumption in economic theory is that the consumer is rational. Rational behavior is characterized by the axioms of rational choice, and in relation with preferences, often assumed to have three fundamental properties (Snyder and Nicholson, 2008). The first, *completeness*, states that the individual is able to specify whether he prefers good A or B, or if they are equally attractive. *Transitivity*, the second, maintains internal consistency of consumer choice so that if good A is preferred to B, and B to C, then good A will be preferred over C. Thirdly, if good A is the preferred good then similar goods or situations of A must also be preferred to other goods or situations of B to ensure *continuity*. If preferences satisfy these axioms, than these can be expressed in a utility function from which demand functions can be derived.

The rational individual´s welfare is given by consumption of private and public goods. This welfare, or utility (U), is given by the individual's preference function

$$U = U(\mathbf{x}, \mathbf{q}) \quad (1)$$

where $\mathbf{x} = (x_1,\ldots,x_n)$ represents the choice vector of private goods available at market prices $\mathbf{p} = (p_1,\ldots,p_m)$, and $\mathbf{q} =)q_1,\ldots,q_n)$, is the exogenous vector of public goods. Further, assume that public goods **q** reflects environmental quality, and thus that higher values of **q** reflect improved quality.

The individual maximizes her utility subject to its budget constraint, namely money income M, such that the utility-maximizing problem can be stated as

$$\text{Max } U(\mathbf{x}, \mathbf{q}) \text{ s.t. } \mathbf{px} \leq M \quad (2)$$

Solving this problem will yield a vector of ordinary (Marshallian) demand functions reflecting the consumer surplus, which measures the individual benefits while holding income constant. This demand vector is represented by

$$\mathbf{x}^* = \mathbf{x}(\mathbf{p}, M, \mathbf{q}) \quad (3)$$

a set of functions which express the optimal quantities, $\mathbf{x}^*$, of market goods given by combinations of **p**, M, and **q**.

3.2 Indirect utility of discrete choice alternatives with attribute vectors

In environmental valuation one seeks to derive the utility associated with a change in environmental quality, for which ordinary Marshallian demand functions are not available. In order to measure benefits or costs associated with a change in quality, utility must be held constant, and thus Hicksian welfare measures are more appropriate. Such exact welfare measures can be derived from an *indirect utility function* that is found by substituting equation (3) into equation (1)

$$V(\mathbf{p}, M, \mathbf{q}) \equiv U(\mathbf{x}(\mathbf{p}, M, \mathbf{q}), \mathbf{q}) \quad (4)$$

Indirect utility can also be considered from a *dual* perspective, more specifically, the individual´s expenditure minimizing problem

$$\text{Min } e = \mathbf{px} \text{ s.t. } U(\mathbf{x}, \mathbf{q}) \geq \tilde{U} \quad (5)$$

where minimizing expenditures is required to achieve a specific or given utility level $\tilde{U}$. The solution to this problem is the Hicksian demand functions, given by the vector

$$\mathbf{x^c} = \mathbf{h}(\mathbf{p}, \tilde{U}, \mathbf{q}) \quad (6)$$

Both Marshallian and Hicksian demand functions provide valuable information on consumer surplus. Whereas the Marshallian demand functions are generally considered an *approximate* welfare measure, the Hicksian demand functions give *exact* welfare measures. However, for changes in **q**, analyzing the consumer surplus is not always sufficient as no area under the demand curve matches changes in the expenditure function. By using the indirect utility function or expenditure function, utility is held constant and exact welfare measures can be derived for changes in **p** and **q**. Since benefits or costs associated with changes in environmental quality are of interest in this research, only these relevant welfare measures will be discussed further.

3.3 Theoretical welfare measures

The theoretical structure provided by the indirect utility function and expenditure function is most commonly broken down in to *Compensating Surplus* (CS) and *Equivalent Surplus* (ES) for changes in **q** (correspondingly, Compensating Variation and Equivalent Variation for changes in **p**) (Freeman, 2003). The CS measure refers to the compensating payment that is necessary for the individual to be indifferent between an exogenous change in **q**, and remaining at the original utility level u^0. Assuming reduced environmental quality from q^0 to q^1 (where $\Delta q \equiv q^1 - q^0 < 0$), CS can be illustrated both from a "primal" perspective with the indirect utility function

$$u^0 \equiv v^0 = V(\mathbf{p}, M, \mathbf{q^0}) = V(\mathbf{p}, M+CS, \mathbf{q^1}) \quad (7)$$

and from a "dual" perspective using the expenditure function

$$CS = e(\mathbf{p}, u^0, \mathbf{q^0}) - e(\mathbf{p}, u^0, \mathbf{q^1}) > 0. \quad (8)$$

From equation (7) the initial utility level, v^0, is indicated as the relevant benchmark for analysis. On the right-hand-side CS represents the payment additional to income necessary (M+CS) so that the consumer is ensured the same utility level as before the decline in **q**.

The ES measure refers to the compensating payment required to keep the individual as well off as if the change actually took place, thus at u^1, although assuming that it did not. This can also be illustrated from the primal perspective

$$u^1 \equiv v^1 = V(\mathbf{p}, M, \mathbf{q^1}) = V(\mathbf{p}, M\text{-}ES, \mathbf{q^0}) \quad (9)$$

as well as from the dual perspective

$$ES = e(\mathbf{p}, u^1, \mathbf{q^0}) - e(\mathbf{p}, u^1, \mathbf{q^1}) > 0 \quad (10)$$

where now the utility level v^1 is the reference point corresponding to lower environmental quality. The required payment embodied by ES can in this situation be interpreted as the individual´s maximum willingness-to-pay (WTP) to avoid the reduction in **q**. Similarly, the CS measure is the minimum willingness-to-accept (WTA) compensation for tolerating the reduced environmental quality. Correspondingly, for an *increase* in **q**, ES will be interpreted as the WTA compensation to forego the improvement, while CS is WTP to achieve the improvement.

In climate policies, measures typically attempt to reduce the magnitude of negative impacts from climate change through mitigation, or simply to deal with the consequences by adaptation. ES is the WTP to mitigate the effects of climate change, or the WTA compensation to adapt to climate change effects when they happen. Thus, the implied property rights are in the future, reflected in a lower **q**, all else equal.

3.4 Negative externalities

The theoretical welfare measures form the basis of cost-benefit analysis conducted by public decision-makers when to decide upon projects, investments or implementing policies. All the individual´s valuations must be included in order to

derive an aggregated welfare measure for the whole population. Such an analysis should include all relevant opportunity costs and benefits, thus both market and non-market costs. For the public to take action and implement projects or policies, the basic decision rule is that the *Total Social Benefits* (TSB) must exceed *Total Social Costs* (TSC).

In environmental non-market valuation the focus of measurement is on the benefits of environmental amenities and quality improvements, and on costs of pollution and environmental damage, in other words, on public goods and negative externalities. With attention to climate policies, valuation involves the non-market benefits for an increase in **q** or the non-market cost of **q** decreasing. Other concerns that need to be addressed when valuating climate policies are the uncertainty and irreversibility related to climate change and the future. Relevant environmental non-market valuation methods will be discussed further in the next chapter.

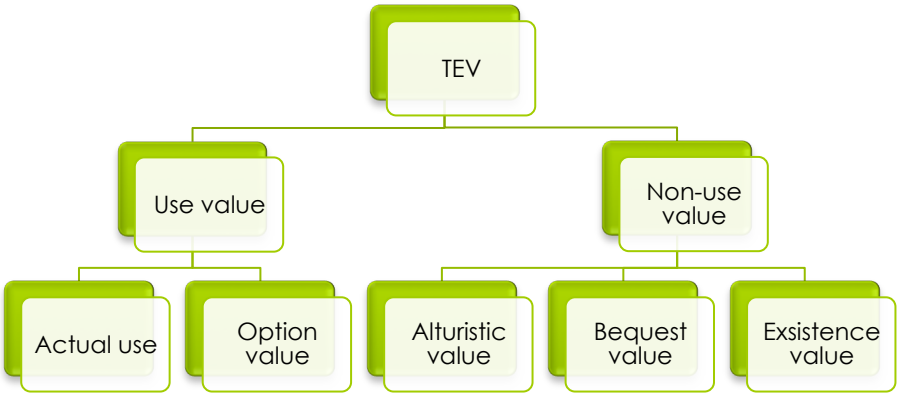
4. Environmental Valuation

Environmental valuation can be defined as the process of adding a monetary value on environmental goods and services (Perman et al, 2011). Environmental goods and services can be both market and non-market goods as they account for both state and use of natural resources and the environment. Unlike normal goods and services traded in the marketplace, the market does not provide the same information about all environmental goods and services. Environmental goods are often considered classical examples of public goods (such as air quality, landscape or biodiversity), which have inherent values that are far more difficult to price due to missing price signals, and therefore lack of transactions, in the market. In economic theory this is referred to as market failure, a problem that will result in altered incentives and inefficient allocation of scarce resources in the society (Varian, 2003).

To address this problem, non-market valuation employs a much broader definition of value. Hence, environmental valuation pursues to find the **Total Economic Value** (**TEV**) of the environmental good, program or policy. This means the value derived through both consumption and any other benefits given from consuming environmental goods and services. TEV is most commonly decomposed into use values and non-use values (Bateman et al., 2002). As illustrated in Figure 4.1, **use values** refer to both values derived from extractive consumption trough activities such as timber harvesting, fishing or hunting, and non-extractive consumption where use values arise from services accommodated by natural resources (e.g. enjoying a landscape, bird watching, hiking etc.). Harold Hotelling´s letter sent to the US National Park Services (Hotelling, 1949) with a proposition on how to measure the use values associated with park recreation is considered a keystone in conceptualizing this idea.

Option value is the value of preserving an option of using something available for the future (Bateman et al., 2002). **Non-use values** can be subdivided into **altruistic value** (value derived from keeping a good available for use of the current generation),

Figure 4.1 – Taxonomies of TEV



bequest values (value from preserving the environment for use of future generations), and **existence values** (the value of knowing that something exists, even though it is not necessarily utilized). The importance of existence value was pointed out by Krutilla (1967) in "Conservation Reconsidered" where he argued that the knowledge itself about a natural resource is enough for it to be associated with economic value. With this article Krutilla was a contributor in establishing the notion of non-use values.

From the previous chapter we know that individuals have a WTP for increased environmental output and quality or to avoid an equivalent decrease, and equally a WTA compensation for a worsened outcome or to forego an improvement. Through attitudes and behavior consumers demonstrate their preferences for goods and services, which reflect the value put on environmental resources. Based on these preferences, a number of methods have been developed within environmental economics in order to place a value on the environment.

4.1 Classification of Environmental Valuation Methods

Non-market based valuation distinguishes between two different approaches; **Revealed Preference (RP) methods** and **Stated Preference (SP) methods** (Perman et al, 2011).

4.1.1 Revealed Preference Methods

The individual´s preference is revealed through observed actions, thus through consumption of goods and services which reflect utility maximization. The RP methods utilize this information and provide estimates for use values. However, it is

not possible to obtain non-use values with RP methods as they are based on observed behavior. The most commonly used RP techniques are the Hedonic Pricing method and Travel Cost Method. The **Hedonic Pricing** (**HP**) method is a well-known technique for RP valuation and with its basic idea stemming from micro economic consumer theory. The method seek to explain the value of a market good or service as a bundle of various attributes where the consumer value the attributes rather than the good itself. A typical example is housing prices where the value of characteristics like the size of the property, number of bedrooms, local air pollution levels or proximity to parks and shops are decomposed econometrically by estimating a hedonic price function. With environmental quality as an attribute, the HP method can determine how WTP will change in relation to a change in environmental quality (for instance how much WTP increases with improved local air quality, which is reflected through increased house price). The **Travel Cost Method** (**TCM**) is based on the belief that individuals respond to travel costs in a similar way to how they respond to market prices, thus they are negatively related. By observing consumers´ travel behavior and travel costs to recreation sites, the TCM method is used to value recreational benefits of environmental resources (e.g. wildlife reserves, forests, and national parks). The idea, famously presented by and credited to Hotelling (1949), is based on the knowledge that people incur various costs and time expenditures when traveling to recreation sites, and so the distance to the site is an important factor to explain number of visits.

4.1.2 Stated Preferences Methods

Another way to elicit the individual´s preferences is through their stated behavior. This is useful when the environmental goods or services are not traded in the market, and their value cannot be derived with more traditional approaches. Therefore the SP methods use constructed scenarios (market situations or policies) to uncover the consumers' contingent choices or contingent preference expressions. In this way economists are able to capture the total economic value. This is the reason why these techniques are both methodological attractive and widely popular in empirical research (Perman et al, 2011), especially within environmental valuation. However, other potential applications can be cost-benefit analysis of projects, priority-settings within or across sectors, estimating damages before implementing an environmental tax or cost or green national income accounting.

The SP methods are survey-based and when doing an environmental valuation study, the most common technique is present a environmental good or policy in which the individual is asked to state how much they are willing to pay or how much compensation is needed, in order to accept a change in environmental quality or quantity. Nevertheless, these methods are also applied in other areas as besides environmental valuation such as transportation, marketing and health (Louviere et al, 2000). The two most important and widespread methods are Choice Experiment (CE) and Contingent Valuation (CV). They are extensively used in research when valuing environmental goods. In **Choice Experiments (CE)** respondents are presented with a number of discrete alternatives and asked to choose their preferred alternative in a sequence of choices, given the scenario of several competing projects or policies. A number of attributes are used to describe each alternative, including a monetary value. This way the individual is implicitly asked about their WTP, an advantage in avoiding vague answers and refusals to participate in surveys.

In **Contingent Valuation (CV)** the respondents are asked directly to express their preferences, their WTP or WTA compensation, for a given policy, commodity or environmental change by answering questions based on hypothetical scenarios. The CV method has its essence from welfare economics, as discussed in Chapter 3, and therefore, when analyzing the answers from the questionnaire, one can elicit the Hicksian welfare measures in money terms. The method originates from Ciriacy-Wantrup´s article on the economics of soil conservations (1947) where he argued that public opinion surveys could be used as a valid instrument to value public goods. However, the first economic application of CV was in 1963 by Davis in his dissertation on value of recreation in the Maine woods (Davis, 1963). After the 1989 Exxon Valdez disaster the National Oceanic and Atmosphere Administration (NOAA) Blue Ribbon panel declared the survey´s reliability conditioned on elaborated guidelines (Arrow et al., 1993), and since then this method has become the most broadly applied within environmental valuation. In Richard Carson´s more recent bibliography of CV studies over 7, 500 studies and papers were cited which used this method (Carson, 2012a).

When conducting an SP study the main choice is between the CE and CV methods. The advantage with these, compared with RP methods, is that one is able to capture non-use value. The CE method offers advantages related to attributes,

control of experimental design, its implicitness, and the control and flexibility associated with survey design, whereas the CV method is less appealing (Perman et al, 2011). However, according to current literature the use of CE is limited and so researchers are not yet confident about its use (Bateman et al, 2002). Generally Kling et al (2012) and Carson (2012b) advice choosing the CV method when a researcher wants to understand WTP for an environmental good or service in total, and CE when more specifically seeking answers with respect to the WTP for an individual attribute. CV can provide policy-makers with critical information and qualification of nontrivial cost and benefits essential to policy analysis and optimal allocation of scarce public resources.

4.1.3 Contingent Valuation (CV)

While researchers have conducted studies using the CV method with the purpose of diversifying its employment, others have strived to improve its methodology, and hence its major issues are frequently debated. For simplicity, the current best practice from Bateman et al (2002) will be adopted in the following discussion. However, it is stressed that other researchers such as Cummings, Brookshire, and Schulze (1986), Mitchell and Carson (1989), and NOAA Blue Ribbon Panel (Arrow et al., 1993) have provided important and landmark contributions to this methodology. Mitchell and Carson (1989) and the NOAA Panel (Arrow et al., 1993) will naturally be reflected in this described methodology, along with the Tailored Design Methods embedded from Dillman (2000). A noteworthy recent discussion is found in "*Contingent Valuation: A Practical Alternative When Prices Aren't Available*" (Carson, 2012b).

The stages of designing a CV study can be presented in three parts as illustrated in figure 4.2. The first stage consists of identifying the research problem in order to construct a market and policy scenario, as well as deciding on the method of payment. Regarding payment, the researcher needs to consider the following factors; benefit, or welfare measure, choice of payment vehicle, elicitation format, who is paying and timing for payment. In the second stage the researcher should formulate questions, with a recommendation to design questions for debriefing and follow-up.

Figure 4.2 – Stages of CV questionnaire design

1. **Formulating the valuation problem**
    a. What is the policy change being valued
    b. Constructing the valuation scenario
    c. Eliciting monetary values
2. **Additional questions**
    a. Debriefing and follow-up questions
    b. Attitudes, opinions, knowledge and uses
    c. Demographics
    d. Questionnaire structure
3. **Pre-testing the questionnaire**
    a. Focus groups
    b. One-to-one interviews
    c. Verbal protocols
    d. Pilot surveys

(Bateman et al., 2002)

Such question would ask why one is or is not willing to pay as well as the views of presented scenario, attitudes, opinions, knowledge and uses of the relevant topic or policy, and demographics in order to ascertain representativeness of sample. The order of questions is important, because it is common to present attitudinal, behavioral and lifestyle questions in the introductory section, valuation scenario, elicitation questions and debriefing questions in valuation section, and the final section should consist of socio-economic characteristics. Stage three stresses the importance of testing the survey before implementation through use of focus groups, one-to-one interviews and verbal protocols. In addition, application of pilot surveys is useful to fine-tune the questionnaire.

Despite the growing literature and number of studies to ensure the validity of the CV method, there are several issues that are subject to criticism. Jerry A. Hausman is one of the major opponents of the CV method, and his book *Contingent Valuation: A Critical Assessment* (1993) provides a more thorough outline of the method´s shortcomings where key concerns such as the hypothetical effect, substitution effect, warm glow effect, and protest voters are addressed. These shortcomings are reassessed in "*Contingent Valuation: From Dubious to Hopeless*", (Hausman, 2012).

Moreover, commonly debated in relation with the design of CV surveys are the method´s reliability and validity. Whereas **reliability** refers to the degree of accuracy within the measurements, **validity** concerns whether a method correctly measures the value for which it is intended to estimate (Champ et al., 2003). According to the status discussion in Kling et al (2012) the four validity concepts that

most often are investigated are criterion, convergent, construct, and content validity. **Criterion validity** compares the estimates derived from the CV survey to other, external measures that are considered legitimate. The **convergent validity** investigates the consistency of CV estimates and how well they correlate with other nonmarket valuation measures of same economic value, for instance, if a WTP for a policy is the same with SP methods as with RP methods. **Construct validity** examine if the CV estimates are consistent with assumptions and expectations predicted by economic theory and intuition. Lastly, **content validity** tests whether a valid estimate of the construction under valuation is obtained and if the measure is sufficiently covering its domain. In other words if the right questions were asked in a clear, understandable, sensible and appropriate manner, which is also referred to as face validity by Bateman et al (2002).

5. Survey and Data Collection

5.1 About the survey

The research problem of interest formed the basis of the survey design, and suggested the CV method would be the best tool of valuation. This entailed the necessity of identifying the target sample in the conceptual phase. Early sample selection makes it possible to conduct a valid CV study within the framework of a Master´s thesis. Also, with the intention of performing a study of such magnitude that it could be considered a contribution to the international research on climate change required a sample of a certain size and that is representative of the Norwegian population. In order to carry out such an ambitious project, we were in need of funds. We were able to identify two potential grants, which we applied for. A conditional answer from one potential sponsor (GreeNudge) led to considerate revision of the already identified research problem. Unfortunately, the application was not approved, as our thesis was not considered to be the kind of project the foundation was looking to sponsor. Nevertheless, through an additional effort we were able to identify a different funding scheme that supported the initial research problem.

Considering our objectives to investigate the Norwegian household´s preferences for climate policy, the baseline for the valuation problem and constructed market is naturally the current Norwegian climate policy. Since people can have preferences for different types of climate policies, several valuation scenarios were created in order to allow for heterogeneous preferences. For the interested reader is the final questionnaire found in Appendix A.

5.2 Designing the CV questionnaire

Most CV questionnaires follow a specific order (Bateman et al., 2002). First an **introductory section** typically presents the respondent with an introductory briefing followed by warm-up questions to identify attitudes, opinions, and behavior, as well as the uses of good/service and related good/services that are related to the topic. Second, the **valuation section** is presented along with value elicitation questions and

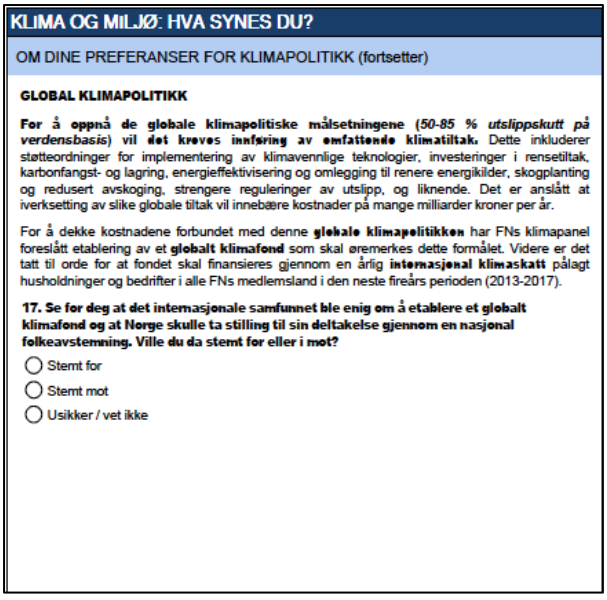
then debriefing questions. Lastly, the **final section** identifies socio-economic and demographic characteristics of the respondents. However, the design process of the questionnaire starts with the valuation section. The valuation section must be designed first because the most important decisions regarding the design and methodology must be determined in order to describe the hypothetical scenario.

5.2.1 The valuation section

Before the valuation scenario, the respondent was presented information on climate change from both a global and Norwegian perspective. The purpose was to introduce and frame the scenario, as well as present the current thought on climate change in an objective, understandable and meaningful way to the respondent (Bateman et al., 2002). We were particularly conscious of using generally approved and accepted sources of information such as the IPCC and the Norwegian Ministry of the Environment. Each information section was followed up with a question asking the respondent about her knowledge on the topic.

Five different valuation scenarios were formulated, and the jointly layout and design are illustrated in figure 5.1 and 5.2. Note that all scenarios are enclosed in Appendix A.

Figure 5.1 – Global climate policy scenario



KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

GLOBAL KLIMAPOLITIKK

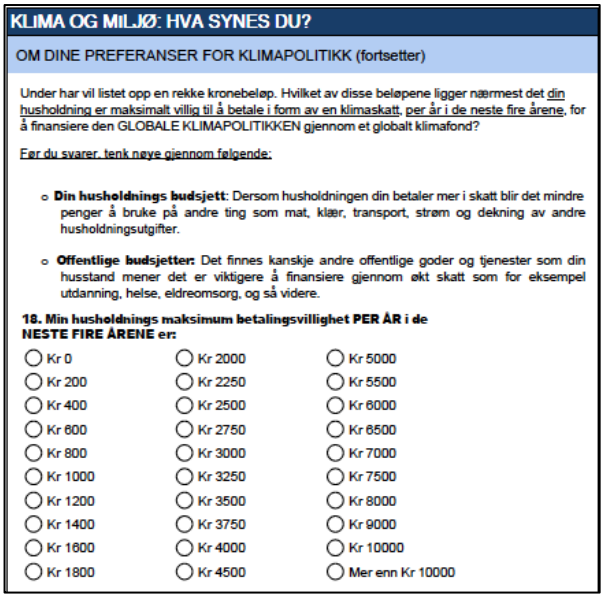
For å oppnå de globale klimapolitiske målsetningene (*50-85 % utslippskutt på verdensbasis*) vil det kreves innføring av omfattende klimatiltak. Dette inkluderer støtteordninger for implementering av klimavennlige teknologier, investeringer i rensetiltak, karbonfangst- og lagring, energieffektivisering og omlegging til renere energikilder, skogplanting og redusert avskoging, strengere reguleringer av utslipp, og liknende. Det er anslått at iverksetting av slike globale tiltak vil innebære kostnader på mange milliarder kroner per år.

For å dekke kostnadene forbundet med denne **globale klimapolitikken** har FNs klimapanel foreslått etablering av et **globalt klimafond** som skal øremerkes dette formålet. Videre er det tatt til orde for at fondet skal finansieres gjennom en årlig **internasjonal klimaskatt** pålagt husholdninger og bedrifter i alle FNs medlemsland i den neste fireårs perioden (2013-2017).

17. Se for deg at det internasjonale samfunnet ble enig om å etablere et globalt klimafond og at Norge skulle ta stilling til sin deltakelse gjennom en nasjonal folkeavstemning. Ville du da stemt for eller i mot?

- ◯ Stemt for
- ◯ Stemt mot
- ◯ Usikker / vet ikke

Figure 5.2 – Elicitation question



KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

Under har vil listet opp en rekke kronebeløp. Hvilket av disse beløpene ligger nærmest det din husholdning er maksimalt villig til å betale i form av en klimaskatt, per år i de neste fire årene, for å finansiere den GLOBALE KLIMAPOLITIKKEN gjennom et globalt klimafond?

Før du svarer, tenk nøye gjennom følgende:

- **Din husholdnings budsjett**: Dersom husholdningen din betaler mer i skatt blir det mindre penger å bruke på andre ting som mat, klær, transport, strøm og dekning av andre husholdningsutgifter.
- **Offentlige budsjetter:** Det finnes kanskje andre offentlige goder og tjenester som din husstand mener det er viktigere å finansiere gjennom økt skatt som for eksempel utdanning, helse, eldreomsorg, og så videre.

18. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

◯ Kr 0	◯ Kr 2000	◯ Kr 5000
◯ Kr 200	◯ Kr 2250	◯ Kr 5500
◯ Kr 400	◯ Kr 2500	◯ Kr 6000
◯ Kr 600	◯ Kr 2750	◯ Kr 6500
◯ Kr 800	◯ Kr 3000	◯ Kr 7000
◯ Kr 1000	◯ Kr 3250	◯ Kr 7500
◯ Kr 1200	◯ Kr 3500	◯ Kr 8000
◯ Kr 1400	◯ Kr 3750	◯ Kr 9000
◯ Kr 1600	◯ Kr 4000	◯ Kr 10000
◯ Kr 1800	◯ Kr 4500	◯ Mer enn Kr 10000

Three of the scenarios utilize a mitigation policy, and two utilize an adaptation policy. Of the three mitigation policies two were made with exclusively Norwegian policies,

while the third used a global perspective. The first policy, named "Norway 2/3", represents status quo; the Norwegian climate policy as it is today (for further reading on climate policies, refer to section 2.3.2). The second, "Norway FI", represents an alternative mitigation policy where all emission reductions are made solely through foreign investments. The last mitigation policy, "Global", represents a global collaboration to reduce CO_2 emissions, and requires participation of all UN member states. In the two remaining scenarios, "Adaptation" and "Adaptation with Geoengineering", the measures are aimed at reducing exposure and vulnerability to climate change in Norway, hence adapting to changes as they happen. "Adaptation with Geoengineering" includes foreign investments in the science of geoengineering (refer to section 2.2.1 for more information). Each respondent is asked about one of the valuation scenarios, and questions were randomized across the sample.

Each mitigation scenario described emission target levels and necessary measures in accordance with the institutional policy (IPCC or Norwegian government), whereas the adaptation scenarios described equivalent adaptive measures. Further it was specified that the measures would be financed by either a domestic or international climate fund (depending on the policy the respondent was facing). Following current best practice, the fund is a "climate tax" levied on every Norwegian household and paid to the Norwegian government (Mitchell and Carson, 1989; Bateman et al., 2002). The tax would be paid annually over the next four-year period which corresponds to the next term of the Norwegian Parliament; The Storting. The tax design is based on the upcoming election in Norway this fall and that Norwegians are accustomed to paying taxes. In addition, the Storting announced the establishment of a Norwegian climate fund in 2012, and therefore this scenario is feasible and realistic (Mitchell and Carson, 1989; Bateman et al., 2002).

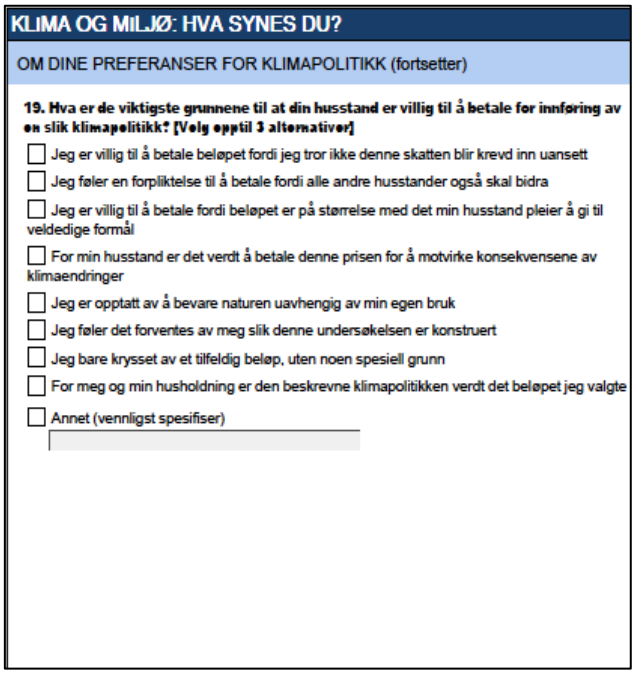
Before presenting the elicitation question, two things were pointed out to the respondent. First, that the income spent on the climate tax would not be available for other uses. Second, there might be other public goods and services which the household would prefer to finance, if given the option.

After receiving this information, the respondent was presented with the elicitation question and asked to determine how much she was willing to pay for the proposed policy. The chosen payment vehicle was payment card. Ideally and most commonly chosen by researchers, is the single-bounded dichotomous choice, which

asks the respondent a yes-no question if she would be willing to pay a certain amount every year for a given period. This represents an interval randomized across the sample (Mitchell and Carson, 1989; Bateman et al., 2002). Due time frame and total budget for our study, this was not possible to incorporate within our survey.

To identify protest voters the respondents had to answer a debriefing question, illustrated in figure 5.3 and 5.4. One was presented to respondents with zero WTP and one for respondents with positive WTP.

Figure 5.3 – Reasons for positive WTP

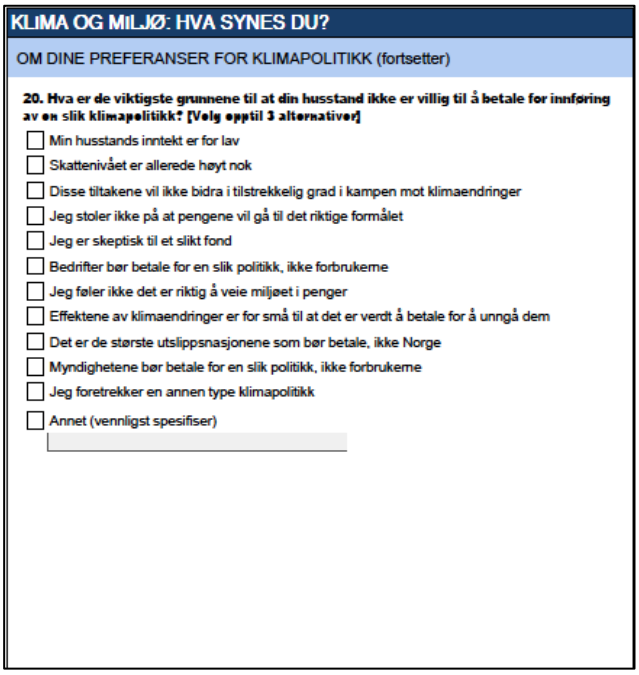

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

19. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett
- ☐ Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra
- ☐ Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål
- ☐ For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer
- ☐ Jeg er opptatt av å bevare naturen uavhengig av min egen bruk
- ☐ Jeg føler det forventes av meg slik denne undersøkelsen er konstruert
- ☐ Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn
- ☐ For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte
- ☐ Annet (vennligst spesifiser)

Figure 5.4 – Reasons for zero WTP


KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

20. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Min husstands inntekt er for lav
- ☐ Skattenivået er allerede høyt nok
- ☐ Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer
- ☐ Jeg stoler ikke på at pengene vil gå til det riktige formålet
- ☐ Jeg er skeptisk til et slikt fond
- ☐ Bedrifter bør betale for en slik politikk, ikke forbrukerne
- ☐ Jeg føler ikke det er riktig å veie miljøet i penger
- ☐ Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem
- ☐ Det er de største utslippsnasjonene som bør betale, ikke Norge
- ☐ Myndighetene bør betale for en slik politikk, ikke forbrukerne
- ☐ Jeg foretrekker en annen type klimapolitikk
- ☐ Annet (vennligst spesifiser)

Protest voters are those who are willing or unwilling to pay for illegitimate reasons, meaning that the elicited welfare measure does not truly reflect the individual´s welfare change. For instance, a respondent who has zero WTP because she thinks the government should pay for mitigation, instead of consumers, may in reality still have a positive WTP.

Since each respondent was asked to state her WTP for only one policy, a second debriefing question was given all respondents to spur the respondent´s true preferences by letting her choose freely between all policies. This broader choice question briefly described each policy along with the options of choosing "None of the above" or "No climate policy at all". The respondent was asked to indicate her most preferred alternative.

5.2.2 The introductory section

The introduction to the survey described the questionnaire, its domain and purpose. We clarified that no answers are right or wrong, and stressed the importance of answering as completely and honestly as possible to every question, even though a respondent may not be interested in the topic. Further, it was emphasized that all answers would be treated confidentially and anonymous.

Six introductory questions were bestowed and formulated using the CV design best practice (Mitchell and Carson, 1989; Bateman, et al., 2002). Potential order bias was addressed by randomizing the order of multiple choice answer alternatives in questions one and three, where the respondent was asked to indicate her preference for public budget priorities. To avoid habituation we used various answer alternatives such as rating and agreement scale (Likert scale). In question five, statements regarding climate change were presented to the respondent, asking her to indicate to which extent she agreed or disagreed in the claims. Both positive and negative statements were composed and presented, forcing the respondent to use both ends of the scale in order to avoid strategic answering.

5.2.3 The final section

The purpose of the demographic questions was both to get an indication of whether the sample was representative of the Norwegian population, but more importantly if it was possible to say something about the relationship of policy preferences and WTP with factors like gender, age, or education. Questions on industry of employment, political affiliation, and membership in an environmental organization, were added to complement the fundamental demographic variables.

5.3 Testing

5.3.1 Focus group

One focus group was held locally in Stavanger on March the 5th with individuals who had different socio-demographic background. There were 6 participants in the group. Each respondent received a paper copy of the survey, and was observed and interviewed by a member of the research team while completing it.

The focus group provided important information about the CV section regarding the order of policy scenarios. Each respondent was presented with two

climate policies, and expressed that the order of the scenarios did influence their WTP for each climate policy. This lead to the choice of only presenting one scenario to each respondent, differing from the common practice in Environmental Resource Economics (ERE) papers.

5.3.2 Pre-test and soft-launch

Obtaining data through specialized firms like Survey Sampling International (SSI) is expensive, and thus a pre-test was executed in order to ensure that any design issues or technicalities were identified before soft-launch and implementation. By distributing the online survey within the research team's social network we received important information on the comprehension and duration of the questionnaire, which confirmed feedback from the focus group. The pre-test suggested that the respondents should be presented to only one policy to avoid sequence bias (Bateman et al., 2002), and thus the CV section was amended before the soft-launch.

SSI executed the soft-launch, which included 200 respondents from the sample. Assessment of the first responses was promising and indicated no unexpected results.

5.4 Implementation

Based on information from the focus group and the pre-test, the final survey was marginally modified before the final launch, which was also conducted by SSI. The policies; "Norway 2/3", "Global" and "Adaptation", analogous with the main research problems, were phased in upon implementation of the questionnaire, thus yielding a higher response rate than the remaining two. The "Norway FI" and "Adaptation with Geoengineering" policies were phased in when counting 500 respondents.

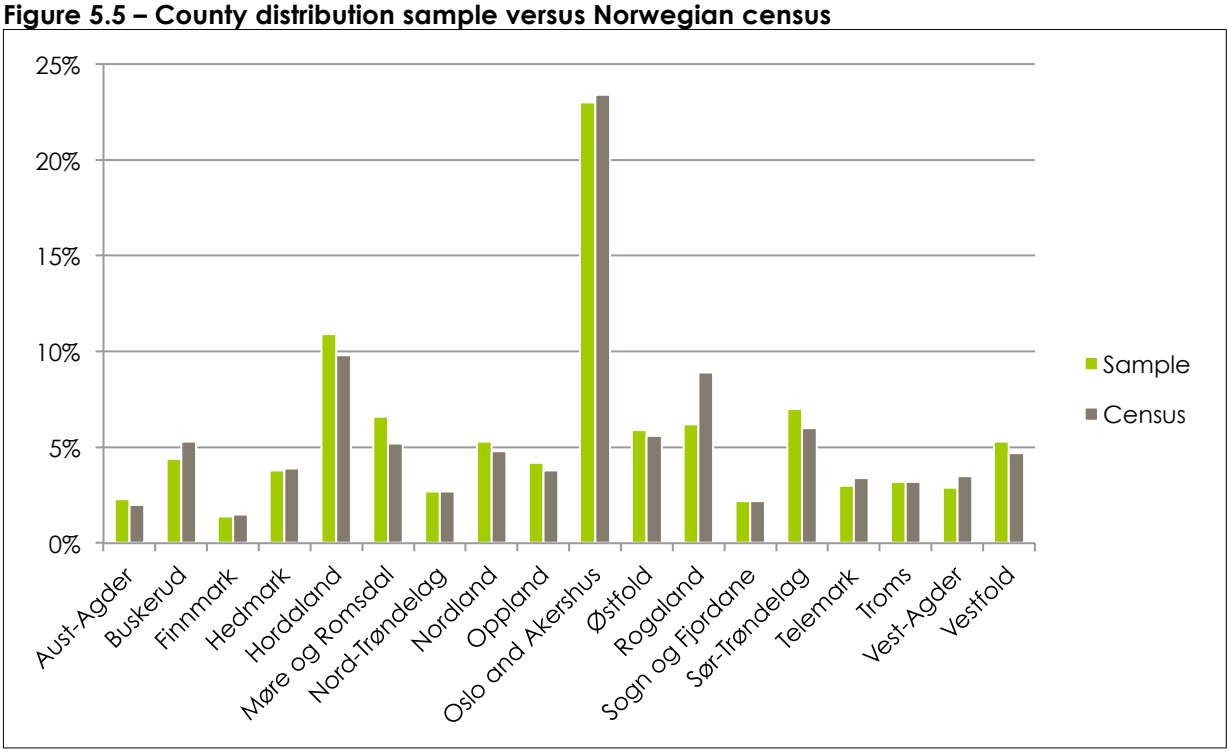
5.5 Descriptive statistics of sample

As SSI was hired to collect data we contracted for a minimum of 1000 respondents representing the Norwegian population. A total of 1164 respondents participated in the survey, however, with an overall completion rate of 87.7 percent. Considering

that it is not, by definition, an entirely random sample (because the people in such panels are not completely random), we compared our sample with the official statistics of Norway to check the representativeness of the sample.

All 19 counties of Norway were all represented with a fairly even distribution compared to the Norwegian census, as depicted in figure 5.5. Noteworthy is Rogaland, the only county where the sample is under-represented by 3 percent, whereas Hordaland, Møre og Romsdal, and Sør-Trøndelag is over-represented by 1-2 percent.

Figure 5.5 – County distribution sample versus Norwegian census



Source of Norwegian census: Statistics Norway (2011a)

A summary of demographic data from the sample is found in table 5.1. Both gender and age were found estimable. It is stressed that "Below 18" was not intended to be included in the survey, and therefore not a significant finding. Nevertheless, the 22.8 percent of respondents aged 60-69 is twice as high as the census. This is most likely because retirees are typical participants in panels due to free time. Generally, the sample is highly educated whereas 38.7 percent had attained 1–5 years of university or college, compared to the Norwegian population where 21.7 percent attained 1–4 years of higher education.

Table 5.1 – Sample characteristics compared with Norwegian census

Variables	Sample	Census
Gender		
Male	48.7%	50.2%
Female	51.3%	49.8%
Age		
Below 18	0.6%	22.2%
18-21	7.0%	5.2%
22-25	6.6%	5.4%
26-29	7.2%	5.3%
30-39	13.4%	12.0%
40-49	16.0%	14.6%
50-59	19.0%	12.6%
60-69	22.8%	10.9%
70-79	7.1%	6.0%
Above 80	0.5%	4.4%
Education		
Elementary School	8.5%	26.1%
High School	27.1%	40.8%
Certificate/Vocational school	16.2%	
University/College 1-3 years	22.0%	
University/College 3-5 years	16.7%	21.7%[a]
University/College above 5 years	9.5%	7.4%[a]
Household income		
0 - 300 000 NOK	21.7%	44.9%
300 001 - 600 000 NOK	36.9%	42.0%
600 001 - 900 000 NOK	26.7%	8.8%
900 001 - 1200 000 NOK	10.5%	3.8%
1200 001 - 1500 000 NOK	2.3%	2.7%[b]
1500 001 - 1800 000 NOK	0.7%	2.7%[b]
1800 001 - 2000 000 NOK	0.2%	2.7%[b]
Above 2 000 000 NOK	1.0%	0.5%
Marital status		
Single	31.9%	51.1%[c]
In a relationship	7.6%	51.1%[c]
Cohabitation	17.7%	51.1%[c]
Married	39.5%	35.0%
Widow	3.3%	4.8%
Household size		
1	25.0%	39.7%
2	43.8%	27.9%
3	13.4%	12.6%
4	11.8%	12.7%
5	4.0%	5.5%
6	1.4%	1.2%
Above 6	0.6%	0.4%

Source of Norwegian census: Statistics Norway (2011a, b, c, 2012)

a) Statistics Norway categorization of higher education is "1-4 years" and "Above 4 years"

b) Statistics Norway categorization "1-2 000 000 NOK"

c) Statistics Norway categorization "Unmarried"

The household income distributions are slightly different, particularly in the range of 600 000 NOK to 1 200 000 NOK, which is relatively high for the sample. This is explained by the well-educated and slightly over-represented young aged respondents. The

majority of the Norwegian households are situated in the income groups 0–300 000 NOK, 301 000–600 000 NOK, or 600 001–900 000 NOK. Further, a majority of the sample is full-time workers (37.5 %) or, as assumed, retired (22.3%).

Table 5.1 continued – Sample characteristics compared with Norwegian census

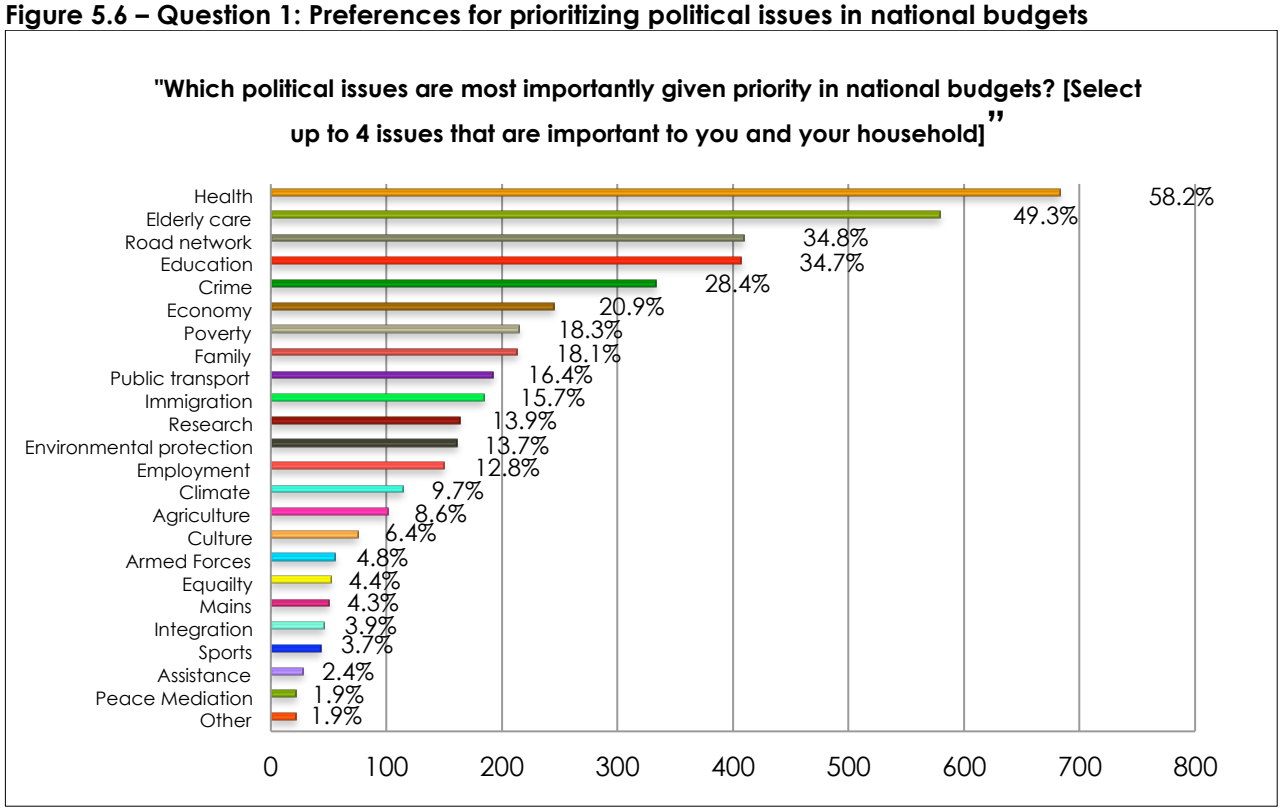
Variables		Sample	Census
Occupation			
	Work full-time	37.5%	36.6%
	Work part-time	14.2%	14.0%
	Unpaid/Volunteer work	2.5%	
	Currently not working	8.6%	
	Student	10.5%	
	Retired	22.3%	21.3%
	Homemaker	2.9%	
	Maternity/Temporary leave	1.5%	
	Other	7.5%	
Sector of occupation			**2012**
	Renewable energy	0.6%	
	Oil and gas	2.2%	1.0%
	Healthcare	16.9%	7.0%
	Banking and Finance	3.3%	
	Education and Research	11.6%	6.2%
	Public Administration	8.0%	
	Construction	4.9%	7.1%
	Other industry	6.4%	
	Agriculture	1.9%	1.1%
	Fishing, aquaculture and forestry	1.1%	0.7%
	Retail, sale and service	13.1%	
	IT, communication and telecommunication	6.6%	
	Other	23.4%	
Member of environmental organization			
	Yes	4.10%	

Source of Norwegian census: Statistics Norway (2011)

Other occupational sectors are "Healthcare", "Education and Research", and "Other" with 16.9, 11.6, and 23.4 percent, respectively. The high response rate for "Other" sectors appears to be due to either a technical error in the branching of questions, or that the respondent misunderstood or failed to find a suitable option.

The respondent´s attitudes and beliefs towards global climate change were examined throughout various questions. In question 1 the respondent was asked to specify her preferences for which political issues should be prioritized in national budgets. As illustrated in figure 5.6, Health and Elderly care were considered by far the two most important affairs

Figure 5.6 – Question 1: Preferences for prioritizing political issues in national budgets



Nonetheless, environmental protection and climate were favored moderately with respectively 13.7 and 9.7 percent.

Questions 2 and 3 asked the respondent to explicitly indicate the importance of environmental and climate policies, and their associated priority areas. On a scale from -5 to 5, the value "3" was signified by a majority of 20.63 percent with an average of 1.72. Increased efforts on development of renewable energy, reduction of GHG emissions, and self-sufficiency of food in Norway were among the main areas of importance.

Figure 5.7 – Question 4: Attitudes towards global climate change

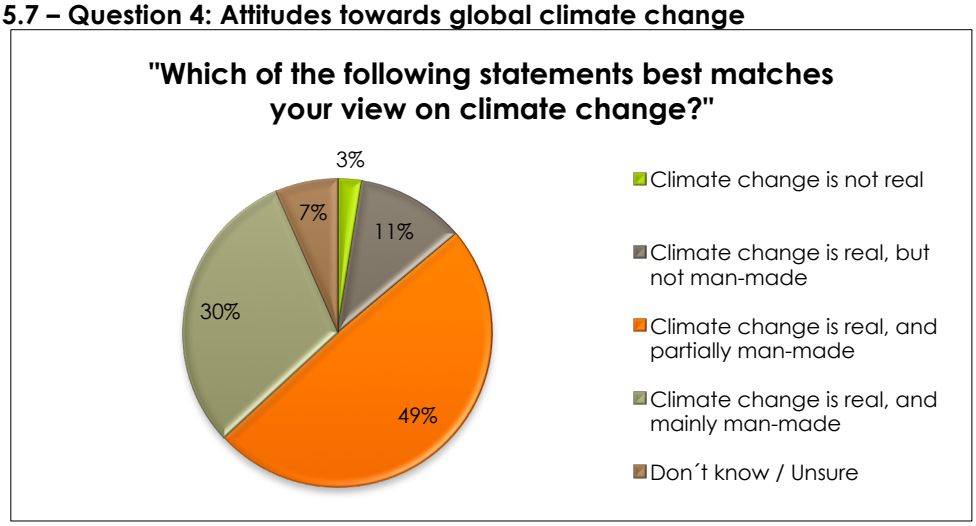


Figure 5.7 illustrates question 4, which represents the sample´s attitudes about global climate change. As illustrated in the figure, most people (49 percent of those who answered the question) think climate change is real, however only to a certain extent caused by human actions. 30 percent think that climate change is real and primarily related to and caused by human action, and 11 percent feel that climate change is real although not man-made, which suggests that almost 90 percent of the respondents believes that climate change is real.

Lastly, we presented some statements intended to identify various characteristics of the respondent that are not necessarily related to climate but may have an impact on WTP. The statements were supplemented with a 5-point agreement scale bounded by "agree" and "disagree". Only 5.6 percent of the sample agrees to a statement saying that world community has resolved most environmental problems within the next 20 years. 14.1 percent disagrees while the rest are roughly evenly distributed between the extremes. About 45 percent is partially or fully disagreeing with that their personal economy will be worse in five years than it is today. 9 percent agrees to this statement. Only 6 percent agrees to that the elected politicians prioritize in the best interest of the community, while over 50 percent expresses some degree of disagreement. About 65 percent did have a good day today and considered themselves to be happy. The majority of the sample indicated some kind of personal responsibility for their actions on the environment while 26 percent is neutral. 8 percent does not feel any kind of personal responsibility. Finally, about 50 percent thinks it is okay that Norway takes on responsibility in global affairs, whereas 28 percent is neutral and 9 percent signals a total disagreement.

6. Econometric Specification and Models

As described in section 5.2.1, the sample´s preferences for five different climate policies are investigated. WTP for each of the five policies is treated as a dependent variable. In addition, three additional dependent variables were constructed from the five policies; "Mitigation", "Adaptation", and "AggWTP, addressing the main research problem, yielding a total of eight models which are summarized in table 6.1.

Table 6.1 – Description of dependent variables

Y – variables	Description	Scale
WTPNorway2/3	Stated WTP for Norwegian 2/3 status quo mitigation policy	0 – 10 000
WTPNorwayFI	Stated WTP for Norwegian mitigation policy solely through foreign investments	0 – 10 000
WTPGlobal	Stated WTP for global cooperation mitigation policy	0 – 10 000
WTPAdapt	Stated WTP for Norwegian adaptation policy	0 – 10 000
WTPAdaptGeo	Stated WTP for Norwegian adaptation policy with investments in geoengineering	0 – 10 000
AggWTP	Overall WTP for climate policies expressed by the five core models	0 – 10 000
Mitigation	WTP for mitigation policies expressed by WTPNorway2/3, WTPNorwayFI, and WTPGlobal	0 – 10 000
Adaptation	WTP for adaptation policies expressed by WTPAdap and WTPAdapGeo	0 – 10 000

Two approaches were used to investigate the estimated predictors for every model, eliminating those containing a lot of noise. Moreover, all regressions were treated with the two filters designed to omit protest voters discussed in section 5.2.1.

A total of 39 explanatory variables were constructed and included in the regression analysis (table 6.2). Variables X_1 to X_4 are dummies used in the regression for AggWTP in order to investigate differences WTP across policies, using Norway2/3 as baseline. Variables X_5 to X_{13} are standard socio-economic demographic variables. Specific profession and sector explanatory effects are accounted for by X_{14} to X_{19}, whereas political preferences in terms of affiliation and policy areas of importance are covered by X_{20} to x_{27}. The remaining variables capture attitudes towards climate change, degree of knowledge, and other climate psychology aspects such as confidence in decision-makers, degree of happiness, feeling of personal responsibility, or opinion about Norway taking responsibility in global issues.

Table 6.2 – Description of explanatory variables

X-variables (independent)		Description	Scale
X_1	DumWTPNorwayFI_IfQ	Respondent asked about WTP Norway w/foreign investments policy	If 1, else 0
X_2	DumWTPGlobal_IfQ	Respondent asked about WTP for Mitigation Global	If 1, else 0
X_3	DumWTPAdap_IfQ	Respondent asked about WTP for Adaptation in Norway	If 1, else 0
X_4	DumWTPAdapGeo_IfQ	Respondent asked about WTP for Adaptation w/Geoengineering	If 1, else 0
X_5	Female	Respondent is female	If 1, else 0
X_6	Age	Respondent's age	
X_7	Age^2	Respondent's age squared	
X_8	Married	Respondent shares household with partner	If 1, else 0
X_9	HHSize	Respondent's household size	
X_{10}	Education	Respondent's # of years of education	
X_{11}	$Educ^2$	Respondent's # of years of education squared	
X_{12}	IncomeMed	Respondent's household has medium income	NOK
X_{13}	IncomeHigh	Respondent's household has high income	NOK
X_{14}	Dummy Engineer	Respondent is educated or trained as engineer or architect	If 1, else 0
X_{15}	Dummy Economist	Respondent is educated or trained as economist	If 1, else 0
X_{16}	Dummy FarmFish	Respondent is educated or trained as farmer or fisher	If 1, else 0
X_{17}	Dummy WorkFull	Respondent work full time	If 1, else 0
X_{18}	Dummy Environorg	Respondent is member of environmental organization	If 1, else 0
X_{19}	Dummy Fossil	Respondent work within oil and gas industry	If 1, else 0
X_{20}	Dummy Center	Respondent has a center oriented political view	If 1, else 0
X_{21}	Dummy Right	Respondent has a right oriented political view	If 1, else 0
X_{22}	Dummy Other	Respondent are not politically interested or do not wish to answer	If 1, else 0
X_{23}	Dummy PrioClimate	Climate should be prioritized in public budgets	If 1, else 0
X_{24}	Dummy PrioPublTra	Public transportation should be prioritized in public budgets	If 1, else 0
X_{25}	Dummy PrioEnvirPro	Conventional environmental protection should be prioritized in public budgets	If 1, else 0
X_{26}	ImportanceEnvClim	How important is environmental and climate politics to me	-5 to 5
X_{27}	SumEnviron	Sum of preferred environmental and resource policy priority areas	0 to 4
X_{28}	Dummy NotManM	Climate change are real but not man-made	If 1, else 0
X_{29}	Dummy NotReal	Climate change are not real	If 1, else 0
X_{30}	Dummy CCNotaffmeandfam	Climate change will not affect me or my family	If 1, else 0
X_{31}	Dummy CO2redNoraffgloCC	Reduction in CO_2 emissions in Norway will affect global climate change	If 1, else 0
X_{32}	Dummy FoodShortCCRel	Developing countries' shortage of food and water are caused by climate change	If 1, else 0
X_{33}	SumKnowledge	Degree of knowledge of climate related terms	0 to 19
X_{34}	Dummy Worldsolvedenvprob	World community has solved most environmental problems within the next 20 years	If 1, else 0
X_{35}	Dummy In5yrsperseconworse	In five years, my personal economy will be worse than today	If 1, else 0
X_{36}	Dummy Trustpoliticians	Confidence in that elected officials make priorities for the better of the community	If 1, else 0
X_{37}	Dummy Ihadagoodday	I have had a very good day	If 1, else 0
X_{38}	Dummy Personalrespon	I feel personal responsible for the effects of my actions on the environment	If 1, else 0
X_{39}	Dummy AgainstNorGloProbl	I am against that Norway takes on responsibility in global affairs	If 1, else 0

**Note that the variables DumWTPNorway23_IfQ, IncomeLow, and Dummy Left are included as baseline dummies in all relevant models.*

6.1 Multiple linear OLS regression and hypotheses

To analyze the influence of the independent variable on WTP results, linear OLS regressions are run using the statistical software SPSS. The general specification for a multiple OLS regression is

$Y_i = \boldsymbol{\beta}\mathbf{x}_i+\varepsilon_i$, i = 1, 2,…n,

where Y_i is the dependent variable that represents individual i´s stated WTP for a given policy, explained by independent variables $\mathbf{x_i}$ given their regression coefficients $\boldsymbol{\beta}$. The term ε represents the error term assumed to be normally distributed with zero mean and variance σ^2. Thus, the dependent variables are

$Y = \{WTP_{AGG}, WTP_{MITIGATION}, WTP_{ADAPTATION}, WTP_{NORWAY2/3}, WTP_{NORWAY}, WTP_{GLOBAL}, WTP_{ADAPTATION}, WTP_{ADAPTATIONGEO}\}$,

while the explanatory independent variables can be summarized as

$X = \{x_1, \ldots, x_{39}\}$.

This provide the following framework for estimating the general model

$\widehat{WTP} = \hat{\beta}_0 + \hat{\beta}_i X_i$

The main statistical hypotheses are presented in table 6.3. Hypothesis I addresses research question 1, while Hypotheses II to IV are associated with research question 2. Research question 3 is addressed by the hypotheses formulated for the explanatory variables listed in table 6.4.

Table 6.3 – Hypotheses tested with core models

Hypothesis	Description
I	WTP is higher for mitigation compared to adaptation
II	WTP is higher for Norway 2/3 compared to Norway FI
III	WTP is higher for Global compared to Norway 2/3
IV	WTP is higher for Adaptation compared to Adaptation with Geoengineering

Hypothesis I is that mitigation climate policies are preferred over adaptation policies. The intuition behind this hypothesis is based on several arguments. First, we believe that the general environmental and climate awareness observed among

Norwegians increases the likelihood that they prefer preventive actions rather than dealing with the impacts of climate change when they happen. This is mainly due to the potential non-use values associated with preserving and protecting the environment. Second, the benefits (use values) derived from implementation of mitigation measures. For instance such measures can involve facilitation of public transportation, or eco-friendly household technologies. However, because adaptation strategies comprise large-scale infrastructure changes or behavioral changes, it can be argued that adaptation results in greater use values. Though, from an overall perspective the advantages of mitigation are presumably outweighing adaptation.

The second hypothesis (Hypothesis II) is that the Norway 2/3 policy is favored over Norway FI. The argument is the potential use values associated with implementing measures domestically. In addition, we anticipate that Norwegians prefer to maintain "life as it is", meaning they are affected by status quo bias.

We predict in Hypothesis III that Norwegian households support a global cooperative mitigation strategy before Norway 2/3. This is based on the intuition that a global strategy, applicable to all emitting countries, is most likely to actually counteract climate change. Also, this policy addresses the international responsibility that should be taken, especially by the major emitters, to solve this global problem, which we expect is a common attitude among Norwegians.

Finally, Hypothesis IV is that the Adapt is preferred over Adapt Geo. The science of geoengineering is still associated with great uncertainty, and the potential consequences from implementing such measures wrongly can be disastrous, thus it involves great risk-taking. In addition, when considering to deliberately manipulate the environment one needs to assess to what extent it is ethical to take such actions. Therefore we expect that Norwegians will be skeptic towards supporting a policy that includes geoengineering.

Table 6.4 – Hypothesis table for explanatory variables

X-variables		Agg WTP	Nor 2/3	Nor FI	Global	Adap	Adap Geo
		H_A	H_A	H_A	H_A	H_A	H_A
X_1	DumWTPNorwayFI_IfQ	< 0					
X_2	DumWTPGlobal_IfQ	> 0					
X_3	DumWTPNorwayAdapt_IfQ	< 0					
X_4	DumWTPNorwayAdaptGeo_IfQ	< 0					
X_5	Female	> 0	> 0	> 0	> 0	> 0	> 0
X_6	Age	> 0	> 0	> 0	> 0	> 0	> 0
X_7	Age^2	< 0	< 0	< 0	< 0	< 0	< 0
X_8	Married	> 0	> 0	> 0	> 0	> 0	> 0
X_9	HHSize	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0
X_{10}	Education	> 0	> 0	> 0	> 0	> 0	> 0
X_{11}	$Educ^2$	> 0	> 0	> 0	> 0	> 0	> 0
X_{12}	IncomeMed	> 0	> 0	> 0	> 0	> 0	> 0
X_{13}	IncomeHigh	> 0	> 0	> 0	> 0	> 0	> 0

The hypotheses concerning the explanatory variables are presented in table 6.4. The variables X_1 to X_4 in the aggregate regression addresses research question 1 and 2; that there will exists heterogeneous preferences for climate policies, and thus the expected effects will be different from zero. Using current policy as baseline, we believe that the respondents will have less WTP for NorwayFI (Hypothesis II), higher WTP for Global (Hypothesis III), and less WTP for both adaptation policies (Hypothesis I). All hypotheses concerning socio-economic and demographic variables (X_5 to X_{13}) are based on economic theory and intuition, or previous empirical findings. For instance, previous statistical evidence shows that women in general are more likely to have a positive WTP than men.

Hypotheses for X_{14} to X_{17}, found in the continued table 6.4 below, address the effect of working as engineer, economist, farmer or fisherman, and the effect of working in a fulltime job. Economists have, for example, shown to have a tendency of not being very concerned about climate change and may therefore have lower WTP for climate policies. On the contrary, being engineer, farmer or fisherman is expected to affect WTP positively.

Table 6.4 continued – Hypothesis table for explanatory variables

X-variables		Agg WTP	Nor 2/3	Nor Fl	Global	Adap	Adap Geo
		H_A	H_A	H_A	H_A	H_A	H_A
X_{14}	Dummy Engineer	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0
X_{15}	Dummy Economist	< 0	< 0	< 0	< 0	< 0	< 0
X_{16}	Dummy FarmFish	> 0	> 0	> 0	> 0	> 0	> 0
X_{17}	Dummy WorkFull	> 0	> 0	> 0	> 0	> 0	> 0
X_{18}	Dummy Environorg	> 0	> 0	> 0	> 0	< 0	< 0
X_{19}	Dummy Fossil	< 0	< 0	< 0	< 0	> 0	> 0
X_{20}	Dummy Center	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0
X_{21}	Dummy Right	< 0	< 0	< 0	> 0	> 0	> 0
X_{22}	Dummy Other	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0
X_{23}	Dummy PrioClimate	> 0	> 0	> 0	> 0	> 0	> 0
X_{24}	Dummy PrioPublTra	> 0	> 0	> 0	> 0	> 0	> 0
X_{25}	Dummy PrioEnvirPro	< 0	< 0	< 0	< 0	< 0	< 0
X_{26}	ImportanceEnvClim	> 0	> 0	> 0	> 0	> 0	> 0
X_{27}	SumEnviron	< 0	< 0	< 0	< 0	< 0	< 0
X_{28}	Dummy NotManM	< 0	< 0	< 0	< 0	> 0	> 0
X_{29}	Dummy NotReal	< 0	< 0	< 0	< 0	< 0	< 0
X_{30}	Dummy CCNotaffmeandfam	< 0	< 0	< 0	< 0	< 0	< 0
X_{31}	Dummy CO_2RedNoraffgloCC	> 0	> 0	< 0	≠ 0	< 0	< 0
X_{32}	Dummy FoodShortCCRel	> 0	> 0	> 0	> 0	> 0	> 0
X_{33}	SumKnowledge	> 0	< 0	> 0	> 0	> 0	< 0
X_{34}	Dummy Worldsolvedenvprob	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0	≠ 0
X_{35}	In5yrsperseconworse	< 0	< 0	< 0	< 0	< 0	< 0
X_{36}	Dummy Trustpoliticians	> 0	> 0	> 0	> 0	> 0	> 0
X_{37}	Dummy Ihadagoodday	> 0	> 0	> 0	> 0	> 0	> 0
X_{38}	Dummy Personalrespon	> 0	> 0	> 0	> 0	> 0	> 0
X_{39}	Dummy AgainstNorGloProbl	< 0	> 0	< 0	< 0	> 0	< 0

For variables X_{23} to X_{27} we hypothesize that if the respondent prefers conventional environmental protection, she is less willing to pay for climate policies. For those who believe that climate change is not caused by human actions (X_{28}), it is assumed that they are not willing to pay for any mitigation policy, thus only adaptation. This anticipated effect is explained by that if the respondent does believe that climate change is part of a natural progression, nothing can be done to stop it besides adapting to the changes. Correspondingly it is argued for hypothesis for X_{29} that if the respondent does not believe that climate change actually is happening, then there is no reason to pay for implementing any climate policy.

The remainder of hypotheses addresses the effects on WTP from the general climate attitudes and beliefs of the respondents. For example we predict that if the respondent believe that the reduction of emissions in Norway can contribute to counteract climate change, then this may positively affect WTP for Norway 2/3.

6.2 Implementing filters

After answering the elicitation question, the respondent was allowed to state a maximum of three reasons to justify her choice of WTP. With basis in this information, two filters were designed and incorporated into the research to identify potential protest voters and reduce their influence on the results. Recall section 5.2.1.; *protest voters* are respondents who indicate zero WTP when they in reality have a positive WTP, or conversely, indicate a positive WTP but, due to illegitimate reasons, overstate their WTP (Bateman et al., 2002).

One filter was designed *strict* and flagged protest voters with zero WTP when indicating that: (1) they felt it is not appropriate to put a monetary value on the environment; (2) the tax rates are already too high; (3) Norwegian authorities or firms should pay for it, not consumers; (4) they did not trust that their payment would go to the right purpose; (5) they were skeptic to such a climate fund; or (6) the major global emitters should pay, not Norway. For a positive WTP, the respondents were flagged as protesters when: (1) the chosen amount was equivalent to what they usually give to charity; (2) they did not think the tax would actually be claimed; (3) they selected a random amount for no particular reason; (4) they felt an obligation because other households would pay as well; or (5) that it was expected from them due to the design of the questionnaire. This strict filter flagged the respondent as a protester if the respondent stated *one* of the above reasons.

The other filter was *semi-strict*. This implied that the protest answers (3) and (6) were included as legitimate reasons for having no WTP and protest answer (1) considered legitimate for those with positive WTP. The semi-strict filter allowed for the respondent to state one non-legitimate alternative without being flagged as protester, meaning that the filter flagged when *two* illegitimate reasons were stated.

6.3 Regression with Manual elimination

A manual elimination rule was implemented in order to dismiss variables whose coefficients generated a lot of noise in the regression models. Such variables were evicted when the absolute value of the estimated t-statistic was below 0.5, in absolute value, in the full model including all variables. As this rule was fairly conservative, a reasonable alternative would have been evicting variables when the estimated t-statistic was below 1. This value would be appropriate considering

that in SPSS the overall model fit (R^2) increases for t-values above 1, and decreases for t-values below 1. However, our idea was to investigate the effect on R^2 by removing the most disturbing variables. The procedure was carried out for all eight models.

6.4 Regression with Backwards elimination

Backwards elimination is an automated variable selection procedure where SPSS (or statistical software) iteratively removes the variable with the highest p-value (alternatively F-value). Starting with a full model, including all explanatory variables, SPSS repeat the procedure until only variables that meet the predetermined p-value criteria, remain. Backwards elimination and other step-wise methods are widely used by researchers to identify the best independent predictors of an outcome (Hocking, 1976; Miller, 1984). These methods are still subject to concerns, mainly because noisy variables tend to be identified as true predictors, and it is therefore recommended to apply such techniques with caution (Derksen and Keselman, 1992; Flack and Chang, 1987). A more recent study, using larger samples than previous studies, partially supports such concerns. Nevertheless, the argument remains that noise variables, as a part of the total number of selected predictors, decreases with sample size (Austin, 2008). The study also points out that the bias of goodness-of-fit estimates is negligible in large samples, such as ours.

Backwards elimination in SPSS has a default p-value at 0.10. However, this value can be modified, and most often it is, when utilizing the method. For example Yen et al (2013) used p-value 0.20, in addition to forcing the inclusion of all demographic variables. Since our motivation was simply to examine if the variable coefficients with high t-values from the other regressions would persist in the backwards elimination procedure, we chose to run the procedure without modifications or forcing of variables in our data.

7. Results

This chapter presents detailed descriptive statistics for the WTP responses and results from the regression analysis. Section 7.1 provides the main basis for the reflections concerning research question 1 and 2, while the regression results in section 7.2 relate mainly to answering research question 3.

7.1 Preference Distributions

The purpose of this analysis is to uncover any differences in climate policy preferences by comparing mean and median WTP, relevant to the hypotheses. The mean value is total WTP divided by the number of respondents and the median value is the center value when the WTPs are organized in ascending order.

7.1.1 WTP for Mitigation versus Adaptation

The main findings, with referral to Hypothesis I, are reported in table 7.1. Observing the table, the majority of the sample has a positive WTP for climate policy. A substantial minority does, however, indicate zero WTP which suggests that a proportion of the Norwegian population desires a policy different from the presented scenarios or no climate policy at all.

Looking at the unfiltered CV responses, aggregate mean WTP is estimated to 1376 NOK, while the median respondent is willing to pay 400 NOK. Together this implies that the majority of respondents with positive WTP chose an amount at the lower range of the payment card interval.

Among the total of 1037 respondents, 662 were randomly assigned a mitigation policy and 375 an adaptation policy. Recognizing Hypothesis I, the results are not as predicted. The mean figures themselves suggest that Adaptation is valued higher than Mitigation. Nevertheless, the estimated confidence intervals implied by the standard error of the means are overlapping, thus indicating that there are no statistical differences in preferences for mitigation versus adaptation.

Implementation of strict filter leads to an increase in both estimated mean and median WTP, and reverses the order of the preferences. Mitigation is now valued higher than Adaptation, yet the difference is not statistically significant. An interesting finding is that the proportion of respondents expressing zero WTP is substantially reduced, indicating an overweight of zero WTP protest voters in the

sample. It can also be noted that Adaptation now carries the higher proportion of zero WTP voters.

Table 7.1 – WTP comparison Mitigation versus Adaptation

Dependent variable	Aggregate WTP	Mitigation WTP	Adaptation WTP
	Unfiltered		
% WTP = 0	36.5	**37.8**	34.1
WTP Mean	1376.28	1351.51	**1420.00**
WTP Std Error of mean	66.99	82.32	115.01
WTP Std Deviation	2157.35	2118.06	2227,21
WTP Median	400	400	**600**
N=1037	1037	662	375
Choice of policy*		**63.0 %**	13.3 %
N = 1026**		N = 646	N = 136
	Strict filtered		
% WTP = 0	11.8	10.7	**13.9**
WTP Mean	2056.26	**2131.07**	1917.55
WTP Std Error of mean	120.15	149.50	202.11
WTP Std Deviation	2494.45	2501.53	2483.57
WTP Median	1000	**1200**	1000
N = 431	431	280	151
Choice of policy*		**76.1 %**	14.7 %
N = 426**		N = 324	= 63
	Semi-strict filtered		
% WTP = 0	17.4	16.6	**18.8**
WTP Mean	1831.05	**1863.71**	1776.54
WTP Std Error of mean	88.10	111.59	143.76
WTP Std Deviation	2320.94	2324.70	2318.10
WTP Median	1000	**1000**	**1000**
N = 694	694	434	260
Choice of policy*		**69.4 %**	14.0 %
N = 686**		N = 476	N = 96

* Distribution of preferences when presented to all climate policy options (Question 29)
** Number includes respondents preferring a different climate policy or no policy at all

Applying the semi-strict filter yields results close to those for the strict model. Estimated mean WTP for Mitigation amounts to 1864 NOK, 86 NOK above mean WTP for Adaptation, suggesting that Mitigation is still preferred. However, the difference is again not statistical significant. The median WTP is even at 1000 NOK, while Adaptation displays the highest rate of respondents with zero WTP, at 18.8%. The response rate figures increase in the semi-strict model, naturally, as more preference reasons are deemed legitimate and included in the analysis.

Finally, the areas marked in green in table 7.1 summarize the respondents' answer to question 29. This question yields a far more heterogeneous preference distribution. A majority share of respondents chose a mitigation policy as their most preferred climate policy in this question, varying from 63 percent to 76 percent depending on the use of filters. In contrast, the equivalent share of preferences for the adaptation policies is only about 14 percent throughout the implementation of

filters. This observation is consistent with Hypothesis I. This result also suggests that the share of respondents who prefer a different climate policy than the presented scenarios, or no climate policy at all, is lower than the share of respondents with zero WTP.

7.1.2 WTP core policies

The results for each of the core policies are presented in table 7.2. In accordance with the unfiltered findings in table 7.1, the adaptation policy AdaptGeo is most preferred in terms of highest mean WTP, which is estimated to 1695 NOK. This result is opposing Hypotheses I and IV. If we look at the median WTP, we find that Global is valued highest at 900 NOK. At the opposite end, Norway2/3 is valued at 200 NOK and additionally holds the highest rate of respondents indicating zero WTP, which conflicts with Hypotheses I and II, but corresponds with Hypothesis III. The implied confidence intervals around the means are overlapping, which mean we cannot reject the possibility of equal WTP across all five policies.

Table 7.2 – WTP comparison core policies

Dependent variable	Norway 2/3	Norway FI	Global	Adaptation	Adaptation Geo
	Unfiltered				
% WTP = 0	**40.5**	39.6	33.6	35.6	30.7
WTP Mean	1333.03	1185.76	1470.08	1299.81	**1695.18**
WTP Std Error of mean	137.83	148.26	135.22	130.92	229.70
WTP Std Deviation	2281.56	1779.10	2112.25	2115.09	2452.52
WTP Median	200	400	**900**	400	800
N=1037	N = 274	N = 144	N = 244	N = 261	N = 114
Choice of policy*	14.6 %	4.0 %	**44.4 %**	8.0 %	5.3 %
N = 1026**	N = 150	N = 41	N = 455	N = 82	N = 54
	Strict Filtered				
% WTP = 0	4.8	**20.3**	11.2	17.1	6.5
WTP Mean	**2549.52**	1516.10	2065.09	1649.05	2530.43
WTP Std Error of mean	282.78	224.36	222.30	221.63	419.33
WTP Std Deviation	2897.64	1723.30	2394.23	2271.03	2844.01
WTP Median	1200	1000	1200	1000	**1300**
N = 431	N = 105	N = 59	N = 116	N = 105	N = 46
Choice of policy*	20.7 %	2.8 %	**52.6 %**	7.7 %	7.0 %
N = 426**	N = 88	N = 12	N = 224	N = 33	N = 30
	Semi Strict Filtered				
% WTP = 0	31.6	**32.0**	26.6	31.1	26.0
WTP Mean	1906.40	1614.36	1959.52	1580.73	**2209.26**
WTP Std Error of mean	194.65	194.82	177.72	157.88	298.03
WTP Std Deviation	2552.86	1888.88	2303.47	2112.26	2682.25
WTP Median	1000	1000	**1200**	1000	1000
N = 694	N = 172	N = 94	N = 168	N = 179	N = 81
Choice of policy*	17.8 %	4.1 %	**47.5 %**	7.9 %	6.1 %
N = 686**	N = 122	N = 28	N = 326	N = 54	N = 42

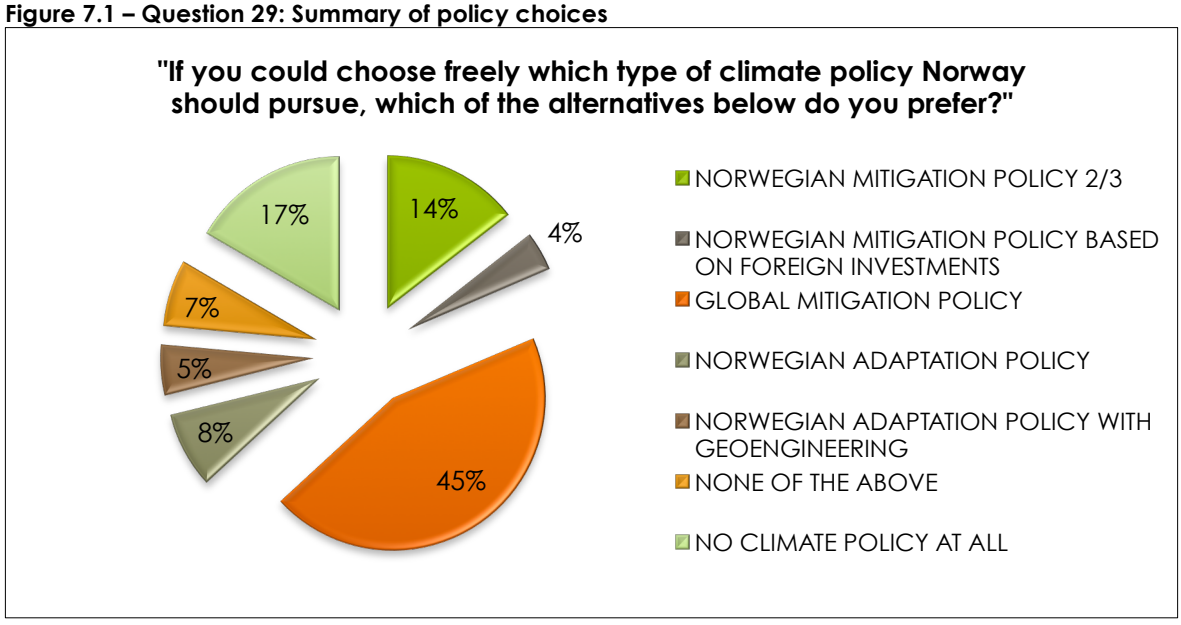
* Distribution of preferences when presented to all climate policy options
** Number includes respondents wanting a different climate policy or no policy at all

When the strict filter is implemented, the order of preferences is reorganized, now holding Norway2/3 as the most preferred policy based on estimated mean WTP. The strictly filtered data perspective exhibits a greater range in estimated mean WTP but the differences are still not statistically significant. Note that even when protest voters are removed, the percentage of respondents who express zero WTP for NorwayFI and AdaptGeo is still fairly high. This implies that most of the respondents stating zero WTP for these policies had legitimate reasons to do so. The strict filter makes the median WTP significantly smoother and more homogenous, with AdaptGeo valued on top at 1300 NOK.

The semi-strict filter, allowing for the respondent to check one non-legitimate reason, induces a considerable increase in zero WTP response rate. This indicates that the initial illegitimate reasons for having zero WTP, now deemed legitimate in the semi-strict model, were frequently checked by the respondents. AdaptGeo is the most valued policy considering the estimated mean WTP, while the median WTP is highest for Global and equal for the other policies. Nevertheless, the semi-strict filter gives the same result as regards to statistically insignificant differences.

Observing the distribution of preferences in the discrete policy-choice question, the Global policy is by far the most preferred option both with and without filters. Besides Global, the current climate policy is preferred over the remaining policies. The full distribution of policy preferences based on the unfiltered data is illustrated in figure 7.1.

Figure 7.1 – Question 29: Summary of policy choices



Note that 17% voted for no climate policy at all, and 7% preferred a different climate policy than the ones presented, which sums to 24% of the sample.

To summarize, estimated WTP appear to be fairly homogenous across all climate policies. However, the spread of distributions in WTP, as a measure of within-policy preference heterogeneity, is large and remains when filters are implemented (see standard deviation statistics). The distributions of WTP based on the unfiltered data are further investigated in figures 7.2 to 7.6. These graphs plot the reversed cumulative percent associated with the elicited WTP amounts for each policy. In other words, they show the additive percentage of respondents willing to pay up to each payment card amount. A visual inspection reveals that the trends are similar to downwards-sloping inverse demand curves, consistent with basic economic theory of preferences.

Figure 7.2 – WTP distribution Norway2/3

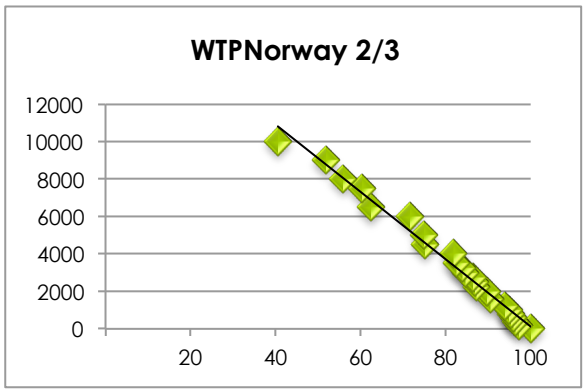


Figure 7.3 – WTP distribution NorwayFI

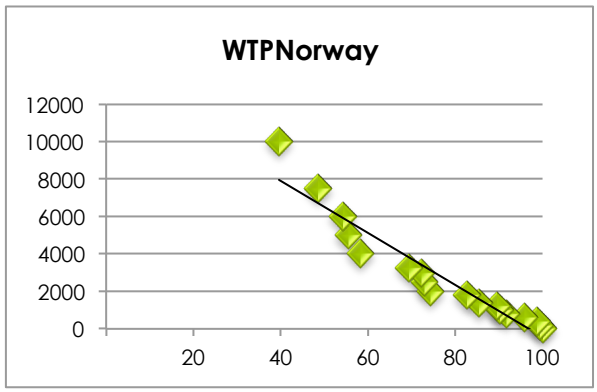


Figure 7.4 – WTP distribution Global

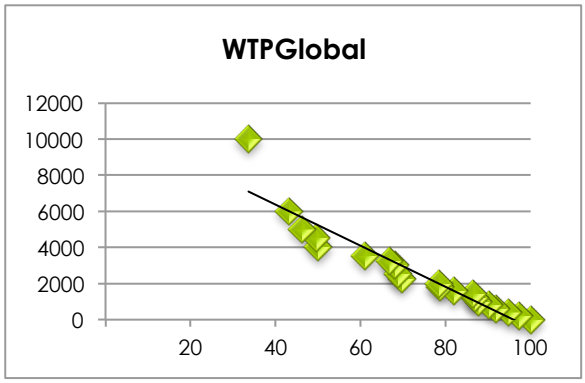


Figure 7.5 – WTP distribution Adaptation

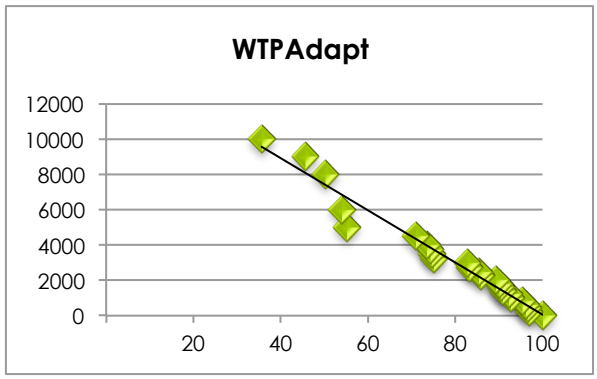
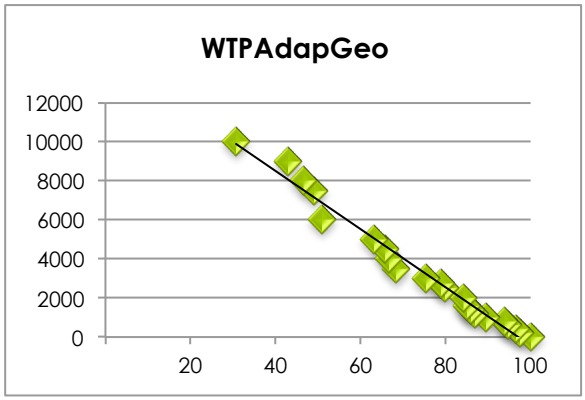


Figure 7.6 – WTP distribution AdaptationGeo



7.2 Regression results

The regression analysis holds two roles. Firstly, it acts as an additional approach to addressing the hypotheses. Secondly, it highlights the factors that influence WTP; similarities and differences in what affect the different policies. A regression provides an all-else-equal estimation of the explanatory variables' effects on WTP.

A total of 72 regressions were run in order to analyze the eight dependent variables presented in Chapter 6, and the results are reported in the tables below. All tables follow the same structure and include nine regressions performed for each dependent variable. They are divided into three sections, representing regressions for the unfiltered, strict filtered, and semi-strict filtered data, with the explanatory variables placed in the leftmost column. Each section is further divided into three parts, exhibiting the full model, the manual elimination model, and the backwards elimination model. The results are presented in terms of the coefficient estimates and the t-statistics. Note that coefficient estimates are reported in NOK. At the bottom of each table the overall model fit is reported in terms of R^2, adjusted R^2, F-statistics, and number of observations (N). For the backward elimination regressions, the last row of the table indicates the number of regressions SPSS performed in advance of the final model.

Tables 7.3 to 7.5 report the regression output from the aggregated models, which is Aggregate WTP (AggWTP), Mitigation, and Adaptation, respectively. Because these regressions are less flexible and introduce more noise in the estimates, each core model is presented as well in tables 7.6 to 7.10.

Table 7.3 – Regression Model 1: Aggregate WTP

Model 1 - Aggregated WTP																		
	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	8293.82	1.515	7884.66	1.478	3927.931	2.046	5223.34	0.535	4943.39	0.527	2614.48	2.726	8545.05	1.176	8723.46	1.249	1241.23	1.993
DumWTPNorway_IfQ	-134.57	-0.616	-124.61	-0.577			-898.88	-2.194	-847.71	-2.127	-812.34	-2.348	-119.87	-0.396				
DumWTPGlobal_IfQ	100.52	0.536	98.00	0.525			-273.68	-0.800	-231.03	-0.690			76.34	0.298				
DumWTPAdap_IfQ	18.71	0.102	20.16	0.111			-451.96	-1.287	-458.87	-1.344	-472.61	-1.695	-15.94	-0.064				
DumWTPAdapGeo_IfQ	202.23	0.864	193.28	0.832			275.55	0.631	273.75	0.642			298.39	0.960	288.68	1.083		
Female	-384.55	-2.562	-389.29	-2.623	-368.618	-2.529	-757.12	-2.679	-736.05	-2.701	-809.73	-3.187	-487.04	-2.409	-471.64	-2.444	-424.47	-2.216
Age	96.44	1.973	92.77	2.046	95.599	2.147	64.69	0.748	50.99	0.606			79.71	1.259	74.01	1.272		
Age^2	-1411.55	-2.198	-1359.14	-2.276	-1366.264	-2.333	-1192.40	-1.054	-979.27	-0.890	-256.68	-2.608	-1191.79	-1.437	-1110.01	-1.453	-137.74	-1.872
Married	58.53	0.374	54.58	0.350			-193.25	-0.686	-182.96	-0.662			-22.39	-0.107	-16.81	-0.082		
HHSize	5.70	0.088	10.86	0.170			13.41	0.108	14.74	0.122			37.46	0.438	31.44	0.380		
Education	317.26	0.965	300.07	0.926			52.82	0.089	82.65	0.144			338.05	0.773	374.29	0.884		
$Educ^2$	-2250.57	-0.868	-2119.60	-0.830			-248.00	-0.053	-489.46	-0.108			-2529.35	-0.731	-2803.77	-0.838		
IncomeMed	206.76	1.220	214.07	1.310	283.718	1.931	789.93	2.508	805.70	2.642	780.24	2.965	387.73	1.686	414.78	1.907	493.77	2.509
IncomeHigh	296.65	0.585	306.29	0.611			38.71	0.031	71.19	0.063			-334.13	-0.497	-384.96	-0.597		
Dummy Engineer	-144.78	-0.609	-168.34	-0.724			-724.40	-1.633	-717.72	-1.682			-99.72	-0.306				
Dummy Economist	58.32	0.327					-6.49	-0.019					62.42	0.259				
Dummy FarmFish	187.15	0.442					-391.59	-0.526	-400.70	-0.553			-109.35	-0.191				
Dummy WorkFull	20.16	0.131					160.00	0.566	105.09	0.381			49.29	0.243				
Dummy Environorg	204.06	0.583	202.20	0.581			648.79	1.167	670.26	1.225			103.32	0.241	123.79	0.300		
Dummy Fossil	73.09	0.125					-628.03	-0.507	-747.95	-0.673			686.27	0.667	487.44	0.518		
Dummy Center	-319.19	-1.351	-306.48	-1.313			-562.71	-1.457	-520.92	-1.404			-515.92	-1.739	-537.75	-1.905		
Dummy Right	-354.71	-1.908	-347.86	-1.897	-281.652	-2.000	-245.57	-0.706	-257.56	-0.776			-194.11	-0.769	-218.48	-0.908		
Dummy Other	-141.85	-0.709	-141.49	-0.711			-441.82	-1.256	-362.72	-1.086			-159.52	-0.618	-170.61	-0.695		
Dummy PrioClimate	668.45	2.856	679.36	2.920	765.881	3.382	825.89	2.263	832.65	2.356	750.67	2.179	797.11	2.737	820.58	2.920	822.99	2.957
Dummy PrioPublTra	-55.35	-0.311					-337.97	-1.044	-328.83	-1.050			-186.09	-0.824	-188.97	-0.861		
Dummy PrioEnvirPro	276.50	1.347	276.32	1.353			486.65	1.441	505.58	1.551			457.14	1.777	449.67	1.818	439.59	1.795
ImportanceEnvClim	46.21	1.345	45.69	1.357	56.126	1.727	123.51	1.685	114.36	1.646	134.98	2.023	56.94	1.162	56.63	1.205	98.32	2.244
SumEnviron	-121.24	-1.683	-124.66	-1.748	-124.642	-1.777	-225.27	-1.545	-228.96	-1.620	-244.25	-1.802	-198.97	-1.993	-201.55	-2.125	-211.80	-2.244
Dummy NotManM	-46.89	-0.197					357.30	0.556	135.60	0.226			-381.63	-1.001	-433.25	-1.197		
Dummy NotReal	220.38	0.488					-2048.20	-0.840	-1933.45	-0.805			39.80	0.048				
Dummy CCNotaffmeandfam	-33.21	-0.522	-34.76	-0.550			24.47	0.208					-41.56	-0.477				
Dummy CO2redNoraffgloCC	149.72	2.175	150.78	2.249	187.050	2.923	7.88	0.060					54.72	0.581	52.51	0.577		
Dummy FoodShortCCRel	233.80	3.432	230.73	3.410	239.472	3.609	287.89	2.262	280.18	2.268	284.96	2.398	280.87	2.971	296.98	3.293	300.48	3.382
SumKnowledge	45.99	1.928	45.05	1.907	55.917	2.566	43.54	1.025	51.01	1.245			45.49	1.429	47.20	1.544	52.04	1.798
Dummy Worldsolvedenvprob	59.38	0.946	59.47	0.954			138.23	1.176	146.29	1.317			159.51	1.792	162.09	1.958	181.16	2.209
Dummy 5yrsperseconworse	112.78	2.007	114.65	2.057	89.533	1.654	234.92	2.280	227.03	2.257	194.65	1.989	217.49	2.878	212.78	2.908	200.53	2.761
Dummy Trustpoliticians	105.40	1.630	104.56	1.628	130.892	2.207	-19.98	-0.165					3.28	0.038				
Dummy Ihadagodday	58.49	0.931	60.53	0.972			88.09	0.755	101.07	0.913			103.28	1.217	101.33	1.246		
Dummy Personalrespon	100.23	1.481	96.83	1.443	123.569	1.881	213.29	1.499	185.62	1.370	230.78	1.782	111.94	1.137	101.32	1.072		
Dummy AgainstNorGloProbl	-82.96	-1.253	-80.25	-1.229			-163.80	-1.287	-147.06	-1.228	-200.00	-1.851	-103.00	-1.122	-101.73	-1.161	-165.07	-2.025
	N	982	**N**	982	**N**	982	**N**	405	**N**	413	**N**	405	**N**	656	**N**	667	**N**	656
	R^2	0.152	**R^2**	0.151	**R^2**	0.136	**R^2**	0.195	**R^2**	0.194	**R^2**	0.158	**R^2**	0.142	**R^2**	0.144	**R^2**	0.121
	$R^{2\,Adj}$	0.116	**$R^{2\,Adj}$**	0.122	**$R^{2\,Adj}$**	0.126	**$R^{2\,Adj}$**	0.109	**$R^{2\,Adj}$**	0.119	**$R^{2\,Adj}$**	0.132	**$R^{2\,Adj}$**	0.088	**$R^{2\,Adj}$**	0.105	**$R^{2\,Adj}$**	0.105
	F	4.316***	**F**	5,271***	**F**	11,077***	**F**	2,262***	**F**	2.596***	**F**	6.139***	**F**	2,624***	**F**	3,703***	**F**	7,375***
					Model	26					**Model**	28					**Model**	28

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: DumWTPNorway23_IfQ, IncomeLow, Dummy Left

Table 7.4 – Regression Model 2: WTP Mitigation

Model 2 - Mitigation	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	8320.574	1.201	8515.826	1.295	4957.792	2.142	8733.921	0.689	8553.597	0.707	196.710	0.219	7244.282	0.751	8402.391	0.907	4970.98	1.616
DumWTPNorwayFI_ifQ	-134.277	-0.629	-118.159	-0.567			-852.452	-2.030	-839.567	-2.066	-708.578	-2.045	-213.602	-0.690	-231.740	-0.853		
DumWTPGlobal_ifQ	77.967	0.427	77.878	0.436			-249.124	-0.718	-221.448	-0.656			78.866	0.303				
Female	-449.185	-2.446	-483.989	-2.860	-439.12	-2.652	-1164.169	-3.226	-1108.582	-3.270	-860.944	-2.840	-702.227	-2.694	-694.642	-2.890	-604.30	-2.608
Age	119.187	1.960	125.010	2.275	133.35	2.482	74.565	0.663	74.346	0.727			103.086	1.237	118.749	1.557	136.73	1.849
Age^2	-1732.146	-2.170	-1796.652	-2.483	-1857.93	-2.615	-1351.487	-0.920	-1344.802	-1.005			-1489.149	-1.366	-1687.358	-1.687	-1850.77	-1.910
Married	5.429	0.027	13.030	0.067			-129.286	-0.345	-130.719	-0.360			-51.556	-0.179	-43.178	-0.155		
HHSize	-62.768	-0.772	-59.057	-0.742			-114.691	-0.686	-105.343	-0.651			-53.376	-0.469	-48.803	-0.444		
Education	299.810	0.731	294.845	0.741	69.24	2.519	290.323	0.380	301.697	0.408	89.410	1.903	260.016	0.452	293.168	0.524	87.67	2.311
$Educ^2$	-1823.930	-0.563	-1767.636	-0.562			-1560.590	-0.256	-1660.460	-0.281			-1392.008	-0.306	-1670.552	-0.378		
IncomeMed	103.645	0.495	128.314	0.652			566.827	1.448	535.780	1.463			274.522	0.915	256.219	0.918		
IncomeHigh	25.253	0.043	-13.248	-0.023			557.122	0.362	652.925	0.435			-733.232	-0.823	-758.842	-0.881		
Dummy Engineer	-323.881	-1.154	-318.030	-1.191			-935.697	-1.717	-961.694	-1.842			-521.091	-1.240	-512.823	-1.278		
Dummy Economist	76.575	0.337					113.878	0.263					35.695	0.110				
Dummy FarmFish	355.269	0.748	331.541	0.722			-277.933	-0.307					180.918	0.262				
Dummy WorkFull	-9.114	-0.048					-39.197	-0.108					-105.316	-0.395				
Dummy Environorg	355.405	0.818					413.720	0.584	437.816	0.632			448.105	0.787	446.973	0.828		
Dummy Fossil	254.370	0.348	209.362	0.292			-304.847	-0.210					185.432	0.138				
Dummy Center	-302.895	-1.034	-307.267	-1.085			-274.603	-0.560	-215.505	-0.481			-254.952	-0.652	-260.033	-0.700		
Dummy Right	-405.936	-1.765	-438.889	-2.033			-167.244	-0.388					-207.344	-0.636	-214.065	-0.688		
Dummy Other	-246.122	-0.994	-272.123	-1.142			-671.510	-1.521	-572.450	-1.496			-311.919	-0.932	-301.768	-0.946		
Dummy PrioClimate	410.493	1.332	434.918	1.460	618.36	2.726	916.289	1.864	929.305	1.942	902.599	2.068	553.979	1.379	548.960	1.416	793.58	2.765
Dummy PrioPublTra	-108.131	-0.481					-536.141	-1.283	-509.275	-1.268			-176.939	-0.594	-188.672	-0.654		
Dummy PrioEnvirPro	639.600	2.650	677.951	2.950			1033.439	2.519	1002.368	2.511	1161.839	3.334	870.513	2.753	883.130	2.971		
ImportanceEnvClim	16.381	0.396					68.570	0.721	68.564	0.748			8.208	0.129				
SumEnviron	-78.247	-0.899	-88.704	-1.070			-173.530	-0.972	-179.946	-1.030			-164.447	-1.279	-154.954	-1.280		
Dummy NotManM	-22.264	-0.077					-705.207	-0.893	-660.932	-0.878	-1171.549	-1.848	-584.875	-1.170	-671.209	-1.427	-929.64	-2.095
Dummy NotReal	163.145	0.290											-681.821	-0.626	-714.267	-0.676		
Dummy CCNotaffmeandfam	25.418	0.323					73.866	0.505	67.981	0.487			1.547	0.014				
Dummy CO2redNoraffgloCC	152.192	1.789	148.291	1.882	187.63	2.431	-60.141	-0.349					50.729	0.410	39.227	0.334		
Dummy FoodShortCCRel	342.236	4.051	348.626	4.308	374.83	4.745	338.564	2.068	332.110	2.089	283.417	1.925	296.984	2.339	297.310	2.461	360.90	3.167
SumKnowledge	13.492	0.464					-21.191	-0.393					-7.734	-0.186				
Dummy Worldsolvedenvprob	64.802	0.841	68.029	0.931			161.395	1.014	163.527	1.085			176.196	1.470	171.404	1.505		
Dummy 5yrsperseconworse	79.474	1.147	76.073	1.126			227.955	1.757	226.466	1.818			139.741	1.424	145.906	1.541		
Dummy Trustpoliticians	10.384	0.135					-179.827	-1.207	-155.868	-1.111			-88.849	-0.821	-84.584	-0.821		
Dummy Ihadagodday	49.035	0.637	60.998	0.818			120.041	0.810	106.346	0.746			97.522	0.894	103.910	0.999		
Dummy Personalrespon	115.660	1.449	122.565	1.628	127.70	1.724	147.818	0.839	127.608	0.764			130.922	1.060	123.357	1.081	192.29	1.763
Dummy AgainstNorGloProbl	-123.146	-1.543	-132.676	-1.752	-145.49	-2.035	-191.426	-1.180	-186.454	-1.251			-141.901	-1.195	-137.794	-1.216		
	N	618	**N**	626	**N**	618	**N**	260	**N**	260	**N**	260	**N**	404	**N**	410	**N**	404
	R^2	0.179	**R^2**	0.180	**R^2**	0.160	**R^2**	0.229	**R^2**	0.227	**R^2**	0.158	**R^2**	0.156	**R^2**	0.158	**R^2**	0.119
	$R^{2\ Adj}$	0.127	**$R^{2\ Adj}$**	0.145	**$R^{2\ Adj}$**	0.147	**$R^{2\ Adj}$**	0.105	**$R^{2\ Adj}$**	0.130	**$R^{2\ Adj}$**	0.135	**$R^{2\ Adj}$**	0.071	**$R^{2\ Adj}$**	0.094	**$R^{2\ Adj}$**	0.101
	F	3.429***	**F**	5.072***	**F**	12.871***	**F**	1.844***	**F**	2.331***	**F**	6.778***	**F**	1.831***	**F**	2.466***	**F**	6.663***
					Model	29					**Model**	30					**Model**	30

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: DumWTPNorway23_IfQ, IncomeLow, Dummy Left

Table 7.5 – Regression Model 3: WTP Adaptation

Model 3 - Adaptation																		
	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	4531.052	0.478	5420.763	0.605	-742.72	-1.346	-6604.092	-0.384	-4981.654	-0.313	-1703.653	-1.990	12847.882	1.085	12389.542	1.119	-1672.91	-2.670
DumWTPAdapGeo_IfQ	179.102	0.689	187.588	0.740			480.735	0.991	506.198	1.089			401.172	1.237	431.441	1.373		
Female	-200.479	-0.728	-144.878	-0.549			11.051	0.021	18.211	0.037			-54.000	-0.155	-26.470	-0.078		
Age	37.028	0.434	37.655	0.488			44.516	0.286	46.444	0.336			36.425	0.352	18.296	0.193		
Age^2	-463.883	-0.413	-469.488	-0.462			-757.710	-0.373	-797.377	-0.443			-474.128	-0.349	-234.996	-0.189		
Married	142.597	0.541	127.742	0.500			-577.399	-1.174	-563.580	-1.216			-256.479	-0.774	-299.894	-0.951		
HHSize	175.990	1.560	181.671	1.660	242.95	2.613	180.362	0.851	166.521	0.861			244.694	1.750	251.007	1.863	247.75	2.099
Education	248.539	0.429	295.359	0.533			-553.851	-0.542	-460.600	-0.481			677.303	0.943	712.575	1.049		
$Educ^2$	-1996.381	-0.437	-2341.228	-0.535			4081.655	0.507	3351.700	0.444			-5828.501	-1.025	-6064.288	-1.127		
IncomeMed	348.340	1.178	351.033	1.247			1363.446	2.361	1369.432	2.482	1202.84	2.707	745.017	1.997	760.868	2.113	545.18	1.719
IncomeHigh	779.479	0.731	645.084	0.640			-1732.673	-0.629	-1858.142	-0.720			153.436	0.128	123.736	0.111		
Dummy Engineer	311.681	0.680	289.659	0.656			-478.197	-0.523	-421.256	-0.481			465.315	0.836	484.685	0.907		
Dummy Economist	3.255	0.011					-144.979	-0.241					78.913	0.204				
Dummy FarmFish	-237.459	-0.255					-499.776	-0.344					-841.605	-0.780	-841.362	-0.809		
Dummy WorkFull	-77.841	-0.290					-55.749	-0.108					19.103	0.058				
Dummy Environorg	337.597	0.548	216.271	0.367			755.160	0.734	800.298	0.836			218.907	0.314				
Dummy Fossil	-481.876	-0.465					-2296.569	-0.861	-2006.044	-0.797			995.657	0.573	792.672	0.473		
Dummy Center	-262.273	-0.640	-269.704	-0.732			-1137.742	-1.664	-1030.051	-1.719	-889.60	-1.700	-772.399	-1.609	-674.347	-1.638	-840.74	-2.154
Dummy Right	-295.351	-0.893	-297.971	-1.105			-352.320	-0.542	-227.739	-0.431			-182.346	-0.426				
Dummy Other	47.592	0.136					-182.257	-0.287					25.990	0.060				
Dummy PrioClimate	1067.678	2.808	1055.446	2.863	1382.06	4.070	1131.935	1.846	1091.543	1.865	1398.01	2.814	1164.692	2.589	1163.582	2.702	1584.25	4.084
Dummy PrioPublTra	11.477	0.038					-380.912	-0.640	-339.653	-0.596			-252.071	-0.693	-219.329	-0.624		
Dummy PrioEnvirPro	-667.883	-1.646	-701.071	-1.804			-801.195	-1.190	-795.508	-1.231			-639.698	-1.287	-708.276	-1.539		
ImportanceEnvClim	62.040	0.979	70.634	1.219			98.427	0.733	103.160	0.812			71.236	0.872	77.485	1.009		
SumEnviron	-202.321	-1.486	-178.979	-1.372			-153.705	-0.525	-166.531	-0.605			-272.280	-1.543	-284.286	-1.674		
Dummy NotManM	-341.656	-0.780	-337.065	-0.805			1476.032	1.120	1450.642	1.196			-316.717	-0.500	-282.576	-0.476		
Dummy NotReal	323.203	0.390					-1349.236	-0.506	-1165.922	-0.460			1256.819	0.924	1117.561	0.859		
Dummy CCNotaffmeandfam	-196.452	-1.688	-179.890	-1.633	-211.96	-2.166	-163.677	-0.709	-153.840	-0.719			-196.803	-1.325	-189.708	-1.329		
Dummy CO2redNoraffgloCC	96.573	0.783	91.562	0.769			57.282	0.248					-23.586	-0.148				
Dummy FoodShortCCRel	90.956	0.759	94.321	0.814			309.691	1.340	318.023	1.434			339.282	2.229	343.036	2.323	274.62	2.011
SumKnowledge	106.895	2.474	106.729	2.640	126.91	3.641	170.277	2.157	170.763	2.413	130.43	2.211	118.481	2.223	118.884	2.399	129.85	3.082
Dummy Worldsolvedenvprob	68.668	0.616	64.588	0.600			121.325	0.582	112.936	0.579			131.003	0.898	101.698	0.732		
Dummy 5yrsperseconworse	153.513	1.522	140.966	1.476	147.67	1.651	166.477	0.828	163.600	0.890			250.717	1.931	236.742	1.975	234.35	2.153
Dummy Trustpoliticians	280.668	2.323	278.478	2.483	409.75	4.166	391.190	1.677	404.542	1.912	500.15	2.885	134.045	0.880	161.863	1.187	261.14	2.138
Dummy Ihadagodday	33.390	0.298					-135.149	-0.651	-117.321	-0.595			21.241	0.148				
Dummy Personalrespon	49.870	0.384					319.361	1.211	327.658	1.327	361.39	1.801	87.541	0.511	83.773	0.506		
Dummy AgainstNorGloProbl	24.286	0.201					61.104	0.259					-24.657	-0.158				
	N	363	**N**	364	**N**	363	**N**	145	**N**	146	**N**	145	**N**	252	**N**	254	**N**	252
	R^2	0.191	**R^2**	0.187	**R^2**	0.148	**R^2**	0.324	**R^2**	0.323	**R^2**	0.217	**R^2**	0.245	**R^2**	0.233	**R^2**	0.187
	$R^{2\ Adj}$	0.101	**$R^{2\ Adj}$**	0.124	**$R^{2\ Adj}$**	0.133	**$R^{2\ Adj}$**	0.099	**$R^{2\ Adj}$**	0.146	**$R^{2\ Adj}$**	0.183	**$R^{2\ Adj}$**	0.118	**$R^{2\ Adj}$**	0.138	**$R^{2\ Adj}$**	0.160
	F	2.134***	**F**	2.973***	**F**	10.283***	**F**	1.441*	**F**	1.828***	**F**	6.389***	**F**	1.933***	**F**	2.444***	**F**	6.996***
					Model	31					**Model**	31					**Model**	29

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: DumWTPAdapt_IfQ, IncomeLow, Dummy Left

Table 7.6 – Regression Model 4: WTP Norway 2/3

Model 4 - WTP Norway 2/3																		
	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	14593.39	1.187	14833.54	1.312	94.32	0.084	23895.75	0.743	24353.48	0.948	4656.15	2.658	17221.73	1.007	14638.69	0.924	-1896.16	-1.048
Female	-684.48	-2.155	-699.70	-2.412	-612.10	-2.175	-1352.25	-1.662	-1429.78	-2.013	-1268.09	-2.153	-986.16	-2.112	-953.06	-2.169	-755.18	-1.871
Age	131.35	1.192	149.67	1.457			42.03	0.170	77.29	0.358			74.39	0.465	50.93	0.358		
Age^2	-2013.69	-1.378	-2230.73	-1.633	-351.55	-3.152	-1029.38	-0.310	-1496.32	-0.520	-626.19	-2.854	-1359.69	-0.639	-1019.65	-0.541	-284.02	-1.864
Married	-11.56	-0.032	-60.43	-0.177			-646.89	-0.659	-827.75	-1.043			387.19	0.639	301.83	0.543		
HHSize	-63.56	-0.438	-71.85	-0.540			70.13	0.173	124.95	0.359			-105.18	-0.469	-96.67	-0.453		
Education	649.58	0.893	630.97	0.944	88.34	1.977	1314.36	0.652	1303.02	0.821			1040.63	1.000	991.28	1.030	133.32	2.055
$Educ^2$	-4649.17	-0.812	-4585.69	-0.873			-9924.19	-0.617	-9797.57	-0.772			-7428.14	-0.909	-6853.00	-0.905		
IncomeMed	-31.41	-0.084	73.84	0.212			752.60	0.787	899.85	1.115			-89.12	-0.151	32.99	0.060		
IncomeHigh	470.20	0.511	338.29	0.414			-647.55	-0.232	-720.08	-0.377			-1279.01	-0.960	-1152.60	-1.013		
Dummy Engineer	-213.24	-0.431					-664.64	-0.476					307.93	0.375				
Dummy Economist	-191.60	-0.462					-918.07	-0.974	-806.83	-0.987			-412.39	-0.678	-488.60	-0.881		
Dummy FarmFish	-638.48	-0.691	-594.29	-0.673			-733.59	-0.430					-815.60	-0.613	-755.62	-0.596		
Dummy WorkFull	211.35	0.601	266.12	0.836			422.29	0.533	386.90	0.539			211.96	0.410				
Dummy Environorg	713.12	0.961	684.02	0.975			441.63	0.318	301.09	0.250			320.01	0.321	464.31	0.507		
Dummy Fossil	7.11	0.007					2776.04	0.782	2822.18	0.931			2435.64	0.900	2632.45	1.041		
Dummy Center	-812.04	-1.587	-683.31	-1.565	-786.46	-1.833	-531.54	-0.476					-1122.69	-1.630	-1010.70	-1.761	-1010.33	-1.874
Dummy Right	-447.10	-1.090	-323.57	-1.076	-545.95	-1.870	-305.27	-0.314					-23.50	-0.039				
Dummy Other	-119.50	-0.270					-333.06	-0.340					-138.41	-0.224				
Dummy PrioClimate	-152.77	-0.283					-850.90	-0.633	-986.15	-0.949			89.35	0.115				
Dummy PrioPublTra	-580.47	-1.389	-587.34	-1.492			-936.13	-0.864	-788.92	-0.905			-639.05	-1.070	-649.27	-1.146		
Dummy PrioEnvirPro	481.80	1.115	508.80	1.241			159.36	0.187					607.97	1.063	595.26	1.099		
ImportanceEnvClim	136.19	1.884	139.56	2.149	191.42	3.281	357.85	1.570	376.11	1.897	338.98	2.179	236.24	1.890	231.31	1.952	282.46	3.012
SumEnviron	-154.18	-1.029	-156.67	-1.133			-313.59	-0.791	-331.16	-0.930	-545.18	-1.829	-358.40	-1.558	-348.50	-1.632		
Dummy NotManM	-75.65	-0.145					-1335.01	-0.670	-1377.41	-0.841			-1096.42	-1.130	-978.67	-1.118		
Dummy NotReal	-267.77	-0.294											-1709.34	-0.835	-1722.09	-0.885		
Dummy CCNotaffmeandfam	240.30	1.694	229.10	1.757	226.28	1.798	199.87	0.644	163.15	0.619			343.96	1.622	347.89	1.768	474.77	2.570
Dummy CO2redNoraffgloCC	127.54	0.842	143.74	1.057			-45.10	-0.108					179.91	0.736	203.78	0.941	339.99	1.743
Dummy FoodShortCCRel	445.45	2.823	414.62	2.963	459.87	3.401	910.34	2.245	940.61	2.655	538.63	1.781	350.66	1.329	372.80	1.509		
SumKnowledge	-6.53	-0.121					-166.64	-1.321	-186.44	-1.678			-89.20	-1.140	-83.44	-1.145		
Dummy Worldsolvedenvprob	238.71	1.742	215.46	1.727	260.91	2.127	655.41	1.886	639.64	2.076	515.84	1.998	521.38	2.215	559.71	2.543	410.16	2.141
Dummy 5yrsperseconworse	26.87	0.221					-196.67	-0.670	-241.72	-0.922			141.44	0.797	111.14	0.667		
Dummy Trustpoliticians	-52.59	-0.381					-385.04	-1.162	-396.21	-1.374			-201.82	-1.002	-213.69	-1.130		
Dummy Ihadagodday	8.18	0.063					-71.42	-0.229					90.04	0.479				
Dummy Personalrespon	150.98	1.029	188.47	1.392			215.12	0.515	254.35	0.682			191.40	0.784	193.25	0.828		
Dummy AgainstNorGloProbl	-60.19	-0.445					-30.39	-0.092					-26.08	-0.119				
	N	256	**N**	261	**N**	256	**N**	97	**N**	99	**N**	97	**N**	161	**N**	163	**N**	161
	R^2	0.215	**R^2**	0.210	**R^2**	0.171	**R^2**	0.332	**R^2**	0.323	**R^2**	0.203	**R^2**	0.257	**R^2**	0.253	**R^2**	0.170
	$R^{2\,Adj}$	0.090	**$R^{2\,Adj}$**	0.133	**$R^{2\,Adj}$**	0.141	**$R^{2\,Adj}$**	-0.035	**$R^{2\,Adj}$**	0.091	**$R^{2\,Adj}$**	0.150	**$R^{2\,Adj}$**	0.049	**$R^{2\,Adj}$**	0.096	**$R^{2\,Adj}$**	0.126
	F	1.722**	**F**	2.735***	**F**	5.650***	**F**	0.905	**F**	1.394	**F**	3.821***	**F**	1.233	**F**	1.618**	**F**	3.889***
					Model	27					**Model**	29					**Model**	28

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: IncomeLow, Dummy Left

Table 7.7 – Regression Model 5: WTP Norway FI

Model 5 - WTP Norway FI																		
	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	4299.54	0.307	3577.31	0.283	13440.14	3.216	-24995.74	-1.001	-26725.43	-1.253	22449.01	3.751	5315.88	0.233	-2275.02	-0.129	17870.12	2.971
Female	-165.73	-0.495	-213.48	-0.716			-432.45	-0.714	-499.21	-1.071			-23.36	-0.048	37.43	0.097		
Age	333.99	2.729	356.14	3.229	368.54	3.915	374.26	1.265	361.34	1.535	614.37	4.269	426.42	1.963	398.86	2.588	455.57	3.240
Age^2	-4369.14	-2.688	-4645.56	-3.176	-4727.95	-3.741	-4406.02	-1.168	-4350.88	-1.447	-7825.66	-4.133	-5224.95	-1.816	-4894.79	-2.375	-5719.36	-3.042
Married	-42.82	-0.121	-116.27	-0.366			716.05	1.264	822.89	1.774			127.94	0.252	152.13	0.355		
HHSize	32.25	0.185	77.22	0.509			-122.98	-0.290	-196.19	-0.575			-22.64	-0.074	15.19	0.066		
Education	-436.22	-0.517	-533.15	-0.703			-1921.43	-1.404	-1962.30	-1.699			-476.73	-0.347	-904.63	-0.856		
$Educ^2$	4160.40	0.618	4969.78	0.820			17672.71	1.568	18176.90	1.936	1147.13	2.463	4774.22	0.432	8021.43	0.944		
IncomeMed	-263.06	-0.598	-255.93	-0.641			-257.42	-0.238	-85.46	-0.097			-849.38	-1.165	-772.43	-1.535		
IncomeHigh	-57.05	-0.062	202.34	0.255			933.26	0.341	1252.66	0.646			527.32	0.294	1414.28	1.106		
Dummy Engineer	-855.58	-1.350	-897.10	-1.629			-1070.54	-0.893	-1088.60	-1.105			137.63	0.119				
Dummy Economist	-70.59	-0.174					-1032.11	-1.066	-1046.74	-1.478			-16.66	-0.026				
Dummy FarmFish	175.11	0.276					1143.84	1.009	1052.24	1.191			1002.20	1.103	853.61	1.146		
Dummy WorkFull	-488.90	-1.246	-539.26	-1.528			-546.19	-0.531	-808.62	-1.042			137.70	0.213				
Dummy Environorg	495.79	0.518	607.06	0.690			-825.79	-0.696	-727.94	-0.755			16.65	0.013	250.57	0.269		
Dummy Fossil	2055.92	1.133	1911.90	1.123														
Dummy Center	-410.80	-0.670	-347.54	-0.738			-716.73	-0.554	-829.29	-0.922			-421.24	-0.483				
Dummy Right	27.90	0.065					324.40	0.393					127.02	0.187				
Dummy Other	-229.41	-0.521	-272.79	-0.809			1953.05	2.103	1818.34	2.787			157.42	0.228				
Dummy PrioClimate	1231.76	1.859	1136.06	1.951	1675.90	3.166	-757.62	-0.878	-833.11	-1.159			983.97	1.128	975.36	1.421		
Dummy PrioPublTra	971.83	2.293	990.67	2.483	975.47	2.752	1396.56	1.687	1530.00	2.565	1436.65	2.729	824.94	1.394	812.75	1.797	795.86	1.849
Dummy PrioEnvirPro	818.27	1.795	796.60	1.887	914.66	2.398	743.75	0.901	639.37	0.959			941.01	1.510	799.12	1.549		
ImportanceEnvClim	-234.77	-2.996	-214.13	-3.205	-203.41	-3.258	-386.68	-2.071	-387.71	-2.552			-281.04	-2.199	-280.28	-2.985	-171.93	-2.019
SumEnviron	45.93	0.256					-56.69	-0.154					26.68	0.086				
Dummy NotManM	-449.13	-0.880	-378.94	-0.845			-148.74	-0.121					-1160.59	-1.128	-979.85	-1.206		
Dummy NotReal	870.84	0.784	931.42	0.973									-4354.55	-1.778	-3528.67	-1.773		
Dummy CCNotaffmeandfam	-184.56	-1.192	-199.27	-1.504			-325.89	-1.080	-317.79	-1.393	-328.69	-1.886	-239.77	-0.902	-250.87	-1.274	-351.85	-2.013
Dummy CO2redNoraffgloCC	298.66	1.847	311.60	2.240	378.71	3.011	325.15	0.810	327.30	1.124			207.87	0.789	173.33	0.860		
Dummy FoodShortCCRel	66.22	0.441					305.15	0.918	406.41	1.527			-110.60	-0.450				
SumKnowledge	9.53	0.184					7.47	0.075					-24.31	-0.304				
Dummy Worldsolvedenvprob	-88.65	-0.585	-56.83	-0.448			-150.59	-0.462					-80.19	-0.321				
Dummy 5yrsperseconworse	6.77	0.048					-28.57	-0.088					-207.72	-0.920	-146.71	-0.841		
Dummy Trustpoliticians	66.17	0.428					-286.43	-0.961	-342.82	-1.466	-327.73	-1.919	20.17	0.087				
Dummy Ihadagodday	-16.79	-0.111					-179.62	-0.541	-196.70	-0.745			-23.33	-0.095				
Dummy Personalrespon	286.18	1.826	322.94	2.357	288.24	2.341	295.54	0.914	331.50	1.391			335.29	1.250	367.43	1.868	519.00	2.965
Dummy AgainstNorGloProbl	-35.77	-0.231					-85.07	-0.214					87.33	0.347				
	N	138	**N**	140	**N**	138	**N**	57	**N**	57	**N**	57	**N**	88	**N**	90	**N**	88
	R^2	0.417	**R^2**	0.409	**R^2**	0.335	**R^2**	0.685	**R^2**	0.674	**R^2**	0.455	**R^2**	0.455	**R^2**	0.436	**R^2**	0.304
	$R^{2\ Adj}$	0.217	**$R^{2\ Adj}$**	0.280	**$R^{2\ Adj}$**	0.294	**$R^{2\ Adj}$**	0.233	**$R^{2\ Adj}$**	0.391	**$R^{2\ Adj}$**	0.390	**$R^{2\ Adj}$**	0.105	**$R^{2\ Adj}$**	0.262	**$R^{2\ Adj}$**	0.253
	F	2.082**	**F**	3.161***	**F**	8.118***	**F**	1.154	**F**	2.382**	**F**	6.957***	**F**	1.300	**F**	2.508***	**F**	5.909***
					Model	28					**Model**	28					**Model**	29

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: IncomeLow, Dummy Left

Table 7.8 – Regression Model 6: WTP Global

Model 6 - WTP Global	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	-2622.01	-0.237	-2468.06	-0.235	823.46	1.437	7639.24	0.442	1707.87	0.106	2832.45	2.259	-12012.75	-0.728	-11123.68	-0.749	1080.42	1.181
Female	-705.17	-2.252	-684.31	-2.326	-531.24	-2.162	-1286.27	-2.486	-1189.65	-2.480	-1226.93	-2.730	-853.24	-1.996	-886.83	-2.250	-966.21	-2.628
Age	-74.37	-0.765	-73.82	-0.795			-276.16	-1.902	-288.51	-2.051	-31.46	-2.742	-183.66	-1.465	-189.04	-1.587	-18.25	-1.886
Age^2	780.26	0.621	769.45	0.639			3213.99	1.716	3380.36	1.862			2116.74	1.309	2186.57	1.423		
Married	-85.97	-0.265	-55.54	-0.178			-771.38	-1.570	-868.92	-1.843			28.66	0.066	17.98	0.044		
HHSize	-53.59	-0.424	-59.45	-0.488			128.92	0.598	142.68	0.726			-41.13	-0.257	-11.28	-0.077		
Education	10.73	0.016	25.52	0.041			1198.99	1.155	829.40	0.861			-423.72	-0.434	-363.66	-0.416		
$Educ^2$	411.95	0.080	270.78	0.055			-8966.38	-1.091	-6114.72	-0.799			3399.02	0.439	2878.16	0.416		
IncomeMed	867.54	2.612	844.47	2.697	659.55	2.468	1130.89	2.384	1215.78	2.724	999.30	2.555	1381.90	3.173	1347.59	3.235	1245.30	3.423
IncomeHigh	-840.40	-0.588	-839.23	-0.607									-505.18	-0.201	-612.98	-0.275		
Dummy Engineer	-418.81	-0.966	-425.30	-1.030			-1701.40	-2.743	-1686.27	-2.816	-1048.96	-1.958	-1077.14	-1.972	-1121.92	-2.157	-920.17	-1.882
Dummy Economist	752.48	1.988	793.01	2.200	810.19	2.373	2373.83	3.750	2379.97	3.855	1627.87	3.208	1152.91	2.190	1160.12	2.395	1078.62	2.376
Dummy FarmFish	956.44	0.886	830.11	0.840									2113.27	0.932				
Dummy WorkFull	-205.94	-0.647	-200.85	-0.678			-891.51	-1.823	-814.36	-1.742			-540.82	-1.311	-546.97	-1.442		
Dummy Environorg	-63.62	-0.090	34.32	0.053			-7.03	-0.005	-66.54	-0.057			103.22	0.100	189.17	0.212		
Dummy Fossil	-1450.02	-1.050	-1472.17	-1.098			-2276.82	-1.627	-2236.97	-1.639	-2778.64	-2.113	-2422.77	-1.609	-2392.88	-1.642	-2485.89	-1.766
Dummy Center	22.72	0.047					315.64	0.501	57.75	0.102			290.65	0.470				
Dummy Right	-585.09	-1.585	-626.00	-1.949	-468.93	-1.723	81.70	0.139					-323.30	-0.667	-431.64	-1.008		
Dummy Other	-318.45	-0.732	-373.66	-0.990			-688.85	-1.120	-786.35	-1.608			-343.83	-0.641	-411.67	-0.891		
Dummy PrioClimate	226.68	0.453			845.90	2.612	1012.04	1.505	1049.89	1.695	1072.00	1.894	314.02	0.524	323.41	0.562		
Dummy PrioPublTra	-381.93	-1.087	-373.56	-1.106			-988.20	-1.984	-945.28	-1.964	-966.69	-2.051	-669.24	-1.503	-650.75	-1.526		
Dummy PrioEnvirPro	645.28	1.728	603.60	1.721			1842.59	3.421	1833.80	3.837	1974.02	4.693	970.16	2.018	965.37	2.218	717.01	1.730
ImportanceEnvClim	111.62	1.517	113.22	1.644			-14.97	-0.124					101.34	0.964	99.41	1.116	136.32	1.693
SumEnviron	-216.57	-1.397	-197.69	-1.393			-544.48	-2.221	-620.84	-2.750	-346.58	-1.672	-310.30	-1.495	-314.50	-1.735		
Dummy NotManM	365.10	0.739	372.72	0.786			1406.32	1.363	1583.33	1.625			0.35	0.000				
Dummy NotReal	-263.79	-0.249											311.48	0.178				
Dummy CCNotaffmeandfam	-29.42	-0.230					-34.63	-0.172					14.33	0.077				
Dummy CO2redNoraffgloCC	149.42	1.066	161.04	1.215			329.67	1.376	402.15	1.804			122.49	0.652	150.03	0.873		
Dummy FoodShortCCRel	368.16	2.621	399.26	3.031	486.80	4.047	42.71	0.196					356.33	1.868	376.34	2.234	439.55	2.711
SumKnowledge	46.25	0.969	46.26	1.023			118.60	1.544	117.76	1.590	158.91	2.435	135.06	1.967	128.10	1.969	122.53	2.148
Dummy Worldsolvedenvprob	31.42	0.245					319.58	1.553	278.58	1.434			195.38	1.089	196.22	1.172		
Dummy 5yrsperseconworse	198.87	1.828	203.49	1.934	187.71	2.022	474.57	2.953	478.74	3.116	446.69	3.172	383.42	2.659	402.17	2.976	377.90	2.969
Dummy Trustpoliticians	-63.31	-0.515	-69.71	-0.613			-295.55	-1.614	-335.89	-1.931			-151.69	-0.934	-195.50	-1.331		
Dummy Ihadagodday	111.65	0.837	110.72	0.871			445.30	2.140	429.38	2.129	348.07	1.988	153.78	0.843	182.66	1.068		
Dummy Personalrespon	-14.38	-0.113					279.77	1.192	303.11	1.358			17.18	0.095				
Dummy AgainstNorGloProbl	-418.40	-2.917	-401.18	-3.014	-485.91	-4.286	-738.82	-2.825	-718.29	-3.131	-774.67	-4.474	-598.13	-3.009	-594.72	-3.287	-632.62	-4.167
	N	225	**N**	229	**N**	225	**N**	106	**N**	107	**N**	106	**N**	155	**N**	158	**N**	155
	R^2	0.345	**R^2**	0.344	**R^2**	0.286	**R^2**	0.611	**R^2**	0.604	**R^2**	0.528	**R^2**	0.430	**R^2**	0.426	**R^2**	0.365
	$R^{2\,Adj}$	0.223	**$R^{2\,Adj}$**	0.248	**$R^{2\,Adj}$**	0.259	**$R^{2\,Adj}$**	0.441	**$R^{2\,Adj}$**	0.462	**$R^{2\,Adj}$**	0.455	**$R^{2\,Adj}$**	0.262	**$R^{2\,Adj}$**	0.296	**$R^{2\,Adj}$**	0.311
	F*	2.841***	**F***	3.594***	**F***	10.803***	**F***	3.584***	**F***	4.246***	**F***	7.259***	**F***	2.563***	**F***	3.280***	**F***	6.800***
					Model	28					**Model**	19					**Model**	24

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: IncomeLow, Dummy Left

Table 7.9 – Regression Model 7: WTP Adapt

Model 7 - WTP Adapt	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	4954.98	0.455	4131.24	0.403	306.90	0.630	-5405.95	-0.285	-3922.84	-0.220	615.36	0.833	8506.32	0.653	9032.38	0.720	2290.17	1.566
Female	-423.26	-1.305	-380.10	-1.230			-576.92	-1.011	-565.97	-1.058			-307.23	-0.788	-315.59	-0.848		
Age	-31.04	-0.298	-53.97	-0.556			-212.75	-1.170	-223.41	-1.283			-128.02	-1.051	-126.51	-1.071		
Age^2	533.96	0.395	826.97	0.654			2803.25	1.190	2926.84	1.295			1798.41	1.134	1746.35	1.138		
Married	230.26	0.760	235.16	0.818			-594.38	-1.055	-626.62	-1.181			-87.13	-0.239	-102.01	-0.291		
HHSize	108.96	0.888	110.50	0.934			-249.13	-1.027	-241.52	-1.138			53.72	0.358	52.87	0.368		
Education	292.60	0.442	310.22	0.494			-356.37	-0.318	-244.68	-0.235			546.02	0.692	585.83	0.777		
$Educ^2$	-2751.82	-0.530	-2863.05	-0.581			1355.36	0.154	478.46	0.058			-5359.77	-0.864	-5649.22	-0.952	-768.49	-2.078
IncomeMed	58.03	0.162	49.30	0.144			1861.17	2.552	1794.53	2.616			502.44	1.127	526.14	1.211		
IncomeHigh	225.95	0.142	224.40	0.146			784.75	0.291	528.82	0.210			455.21	0.278	304.07	0.194		
Dummy Engineer	-106.72	-0.193					-1425.07	-1.342	-1355.99	-1.348			-97.67	-0.160				
Dummy Economist	-63.50	-0.178					-122.18	-0.182					-49.21	-0.111				
Dummy FarmFish	-475.11	-0.427					-135.48	-0.070					-913.48	-0.709	-1011.16	-0.812		
Dummy WorkFull	-304.22	-0.980	-295.73	-0.993			-577.75	-0.984	-594.87	-1.066			-462.37	-1.267	-448.44	-1.264		
Dummy Environorg	311.82	0.429	196.76	0.289			-331.15	-0.296	-275.70	-0.264			-208.50	-0.260	-199.43	-0.258		
Dummy Fossil	-1245.94	-0.969	-1212.47	-0.984			-2003.14	-0.778	-1852.70	-0.761			-1310.07	-0.597	-1401.55	-0.660		
Dummy Center	-261.06	-0.538	-220.33	-0.481			-922.22	-1.156	-849.81	-1.133			-850.14	-1.579	-889.28	-1.698	-760.69	-1.784
Dummy Right	-367.42	-0.950	-330.92	-0.894			-624.17	-0.809	-470.58	-0.679			-482.54	-0.975	-438.31	-0.928		
Dummy Other	-273.27	-0.680	-246.69	-0.647			-464.89	-0.616	-408.87	-0.568			-440.61	-0.905	-447.37	-0.947		
Dummy PrioClimate	874.05	1.922	859.54	2.005	927.98	2.312	530.46	0.757	468.52	0.717			1096.43	2.076	1117.11	2.185	1379.09	3.145
Dummy PrioPublTra	195.28	0.519	241.27	0.673			-261.29	-0.392					-232.89	-0.555	-237.22	-0.583		
Dummy PrioEnvirPro	-641.96	-1.303	-634.74	-1.365			-1221.52	-1.412	-1198.15	-1.452			-739.33	-1.246	-744.26	-1.290		
ImportanceEnvClim	16.48	0.219					113.43	0.664	93.67	0.578			-11.36	-0.121				
SumEnviron	-104.47	-0.666	-105.43	-0.709			-163.69	-0.523	-160.94	-0.541			-170.42	-0.868	-179.46	-0.935		
Dummy NotManM	-521.49	-0.983	-616.85	-1.266			-363.44	-0.248					-524.67	-0.721	-523.70	-0.774		
Dummy NotReal	274.40	0.333					1442.20	0.549	1642.25	0.661			1649.71	1.281	1521.32	1.241		
Dummy CCNotaffmeandfam	-257.14	-1.897	-255.55	-2.002	-246.52	-2.248	-262.98	-1.002	-263.84	-1.094	-457.24	-2.487	-281.16	-1.655	-272.09	-1.682		
Dummy CO2redNoraffgloCC	19.81	0.143					-216.19	-0.883	-231.12	-1.035			-134.90	-0.785	-128.78	-0.814		
Dummy FoodShortCCRel	24.37	0.176					423.17	1.557	418.82	1.622			328.34	1.874	328.87	1.915	273.76	1.831
SumKnowledge	142.49	2.924	140.40	3.070	142.80	3.762	183.36	2.356	174.29	2.410	178.61	3.131	164.93	2.938	162.70	3.077	197.43	4.433
Dummy Worldsolvedenvprob	-41.04	-0.308					-292.90	-1.112	-317.04	-1.269			-118.99	-0.701	-125.92	-0.766		
Dummy 5yrsperseconworse	-106.97	-0.868	-112.57	-0.970			-316.61	-1.202	-287.55	-1.170			-73.50	-0.458				
Dummy Trustpoliticians	324.57	2.282	333.96	2.581	396.14	3.523	356.22	1.234	348.60	1.342	541.87	2.700	240.19	1.367	230.44	1.430	262.00	1.953
Dummy Ihadagodday	-15.27	-0.111					-210.11	-0.858	-201.88	-0.893			-105.60	-0.630	-95.22	-0.588		
Dummy Personalrespon	85.78	0.560	97.70	0.722			223.22	0.749	250.67	0.927			101.59	0.513	112.35	0.603		
Dummy AgainstNorGloProbl	78.84	0.560	62.80	0.487			115.59	0.420					1.90	0.010				
	N	252	**N**	255	**N**	252	**N**	101	**N**	101	**N**	101	**N**	174	**N**	174	**N**	174
	R^2	0.197	**R^2**	0.193	**R^2**	0.140	**R^2**	0.409	**R^2**	0.406	**R^2**	0.183	**R^2**	0.284	**R^2**	0.282	**R^2**	0.200
	$R^{2\ Adj}$	0.066	**$R^{2\ Adj}$**	0.101	**$R^{2\ Adj}$**	0.126	**$R^{2\ Adj}$**	0.091	**$R^{2\ Adj}$**	0.151	**$R^{2\ Adj}$**	0.158	**$R^{2\ Adj}$**	0.102	**$R^{2\ Adj}$**	0.131	**$R^{2\ Adj}$**	0.171
	F	1.510**	**F**	2.096***	**F**	10.047***	**F**	1.288	**F**	1.592*	**F**	7.250***	**F**	1.561**	**F**	1.873***	**F**	6.948***
					Model	32					**Model**	33					**Model**	30

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: IncomeLow, Dummy Left

Table 7.10 – Regression Model 8: WTP AdaptGeo

Model 8 - WTP AdaptGeo	Unfiltered regressions						Strict Filter Regression						Semi Strict Filter					
	All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination		All variables included		Var t>0.5		Backward elimination	
Explanatory variables	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	3749.49	0.161	8066.59	0.406	11592.13	1.931	53089.67	0.784	32253.45	0.859	19888.65	2.286	30631.10	0.801	20243.36	0.703	8948.86	1.291
Female	335.10	0.610	303.66	0.644			1922.50	1.216	915.42	1.161			401.69	0.458	425.07	0.558		
Age	202.07	1.007	239.26	1.629	316.42	2.357	1071.90	2.236	780.89	2.895	472.58	2.432	471.00	1.830	396.29	1.765	297.25	1.906
Age^2	-2571.00	-0.962	-3121.83	-1.576	-4363.92	-2.404	-14296.08	-2.258	-10558.08	-2.944	-6613.74	-2.533	-6122.24	-1.785	-5184.82	-1.735	-4158.67	-1.977
Married	-860.81	-1.521	-929.47	-1.784			-1955.06	-1.266	-1781.53	-2.219			-1765.82	-1.912	-2050.15	-2.644		
HHSize	709.43	2.294	595.02	2.283	450.07	2.092	1241.31	1.844	1174.39	2.728	1191.64	3.134	1165.27	2.738	994.01	2.653	703.15	2.490
Education	119.25	0.090	282.62	0.235			1128.34	0.315	411.58	0.201			1064.37	0.506	615.42	0.377		
$Educ^2$	-534.71	-0.050	-1675.16	-0.173			-8125.76	-0.278	-3008.10	-0.182			-8638.87	-0.504	-4295.22	-0.324		
IncomeMed	1025.85	1.722	919.21	1.745	934.62	2.089	997.64	0.655	1284.05	1.509			1922.11	2.411	1745.06	2.341	1615.46	2.930
IncomeHigh	191.87	0.108	-562.99	-0.375									-4377.04	-1.557	-3488.52	-1.655		
Dummy Engineer	1066.58	1.088	1155.81	1.368	1196.43	1.685	-322.35	-0.109					1674.97	1.059	1482.84	1.282		
Dummy Economist	-208.55	-0.350					2024.14	1.253	1538.66	1.637			256.30	0.316				
Dummy FarmFish	-582.22	-0.322					-4408.17	-1.449	-4103.88	-2.183	-3418.19	-2.099	-1573.67	-0.720	-1442.93	-0.731		
Dummy WorkFull	-140.39	-0.227					1151.15	0.719	1321.04	1.494			584.61	0.669	341.47	0.461		
Dummy Environorg	168.18	0.122	79.63	0.068			5955.61	1.191	5892.81	2.455	7557.58	3.657	-912.62	-0.513	-599.21	-0.381		
Dummy Fossil	2066.31	0.936	473.70	0.260									7458.60	1.865	2111.06	0.790	5560.33	2.551
Dummy Center	-27.86	-0.035					-762.75	-0.413					-385.63	-0.362				
Dummy Right	-168.02	-0.250					-373.53	-0.233					379.61	0.417				
Dummy Other	976.68	1.329	990.38	1.834			-1825.91	-1.107	-1234.65	-1.416			369.16	0.371				
Dummy PrioClimate	973.44	1.284	899.66	1.362			3264.25	1.838	3034.22	3.210	2500.35	3.013	450.34	0.460				
Dummy PrioPublTra	582.37	0.987	583.82	1.099			-918.49	-0.436					978.33	1.221	692.67	0.959		
Dummy PrioEnvirPro	-1101.11	-1.406	-1069.54	-1.605			1050.41	0.529	524.10	0.503			-832.47	-0.771	-1319.23	-1.396		
ImportanceEnvClim	130.21	0.972	141.76	1.228	235.35	2.636	34.00	0.114					35.45	0.175				
SumEnviron	-590.37	-2.060	-643.98	-2.460	-639.17	-2.627	-585.00	-0.469					-345.83	-0.791	-533.78	-1.467		
Dummy NotManM	61.51	0.071					5718.98	0.725	3590.35	1.125			-255.42	-0.155				
Dummy NotReal																		
Dummy CCNotaffmeandfam	49.82	0.205					813.74	0.963	703.75	1.549			113.47	0.320				
Dummy CO2redNoraffgloCC	248.33	0.787	179.12	0.742			-234.63	-0.200					181.55	0.368				
Dummy FoodShortCCRel	683.64	2.311	798.11	3.293	746.39	3.454	1211.46	1.398	841.13	2.042			851.49	2.181	1003.29	3.186	597.11	2.388
SumKnowledge	-6.59	-0.067					253.93	0.480					-76.12	-0.509	-44.11	-0.336		
Dummy Worldsolvedenvprob	471.22	1.913	507.02	2.549	566.70	3.073	396.49	0.541	267.94	0.752			766.02	2.209	690.84	2.208	594.65	2.688
Dummy Syrsperseconworse	419.19	1.998	412.42	2.265	539.16	3.451	624.04	1.114	629.77	2.278	678.61	2.796	502.74	1.825	584.95	2.613	651.55	3.498
Dummy Trustpoliticians	33.91	0.128					-273.37	-0.403					-527.38	-1.470	-362.89	-1.230		
Dummy Ihadagodday	-51.26	-0.236					94.07	0.162					268.66	0.826	111.49	0.406		
Dummy Personalrespon	135.64	0.557	74.05	0.337			-255.03	-0.283					132.07	0.348				
Dummy AgainstNorGloProbl	-133.82	-0.542	-157.64	-0.726	-319.83	-1.715	146.11	0.232					-303.41	-0.971	-233.19	-0.820		
	N	111	**N**	112	**N**	111	**N**	44	**N**	44	**N**	44	**N**	78	**N**	79	**N**	78
	R^2	0.499	R^2	0.477	R^2	0.419	R^2	0.813	R^2	0.778	R^2	0.607	R^2	0.606	R^2	0.533	R^2	0.454
	$R^{2\,Adj}$	0.274	$R^{2\,Adj}$	0.333	$R^{2\,Adj}$	0.354	$R^{2\,Adj}$	0.269	$R^{2\,Adj}$	0.586	$R^{2\,Adj}$	0.530	$R^{2\,Adj}$	0.295	$R^{2\,Adj}$	0.325	$R^{2\,Adj}$	0.390
	F	2.223**	**F**	3.308***	**F**	6.476***	**F**	1.494	**F**	4.040***	**F**	7.934***	**F**	1.946**	**F**	2.566***	**F**	7.162***
					Model	24					**Model**	26					**Model**	27

*Significant at 10% **Significant at 5% ***Significant at 1%

Excluded (baseline) variables: IncomeLow, Dummy Left

7.2.1 General observations

The majority of the estimated models are found to be statistically significant overall, with the F-statistics significant at 99% in most cases. The overall model fit, expressed by R^2 and adjusted R^2, are generally acceptable although some variation across models can be observed. For example, regressing Norway2/3 strictly filtered yields a negative adjusted R^2, which means that the model does not predict the dependent variable very well. The sign of the estimated coefficients is in most cases as expected.

Looking at the manual elimination models, the initial regressions yields an average of nine variables with t-statistics lower than the predetermined limit of 0.5. These variables were removed, leaving an average of 26 variables to the subsequent regression. The number of included observations increases in the manual elimination regressions due to removal of variables, which causes SPSS to allow for more respondents with missing items.

The backward elimination procedure executes 28 regressions on average, before arriving at the final model. The strictly filtered Global iterations provide the highest number of significant variables (14), while the strictly filtered Adapt iterations yield fewest (3).

7.2.2 Aggregate WTP

All regressions for AggWTP (Model 1), exhibited in table 7.3, show to be statistically significant at a 99% confidence level, and capture an average of 15% of the variation in the dependent variable. The adjusted R^2 is only slightly weaker, implying that the explanatory variables contain an acceptable level of noise. Note that the policy indicators (i.e. the dummy variables for the policies) are insignificant in most cases. However, the negative and significant coefficients for NorwayFI and Adapt dummies in the strict filter regressions suggest that the WTP is lower for these policies, as compared to Norway2/3 (baseline). This is consistent with the results and analysis of mean WTPs in section 7.1. Considering the full, unfiltered regression we find nine significant explanatory variables, all but Female and Dummy 5yrsperseconworse with estimated coefficients consistent with their predicted effects. Implementation of filters does not yield any particularly unexpected effects on the estimations. The coefficients for Female, Dummy PrioClimate, Dummy FoodShortCCRel, and Dummy 5yrsperseconworse seem to be most robust across the regressions.

7.2.3 Mitigation and Adaptation

Tables 7.4 and 7.5 display results for Mitigation (Model 2) and Adaptation (Model 3). The estimated coefficients for Female, Age, Age^2, Dummy FoodShortCCRel, and Dummy PrioEnvirPro are reported significant in the full, unfiltered Mitigation regression, in which the coefficients for Female and Dummy PrioEnvirPro contradict our predicted effect. A positive Dummy FoodShortCCRel coefficient suggests that respondents who think that shortage of food and water are mainly caused by climate change will have higher WTP. Being female seems to have a robust, negative impact on WTP for Mitigation, which is conflicting with a normally predicted sign for this coefficient. The estimated negative and significant coefficient for DumWTPNorwayFI_ifQ in the strict filter regression supports the estimation of this coefficient in the Aggregate WTP model. The opposite signs of Age and Age^2 may indicate a non-linear relationship between age and WTP for mitigation, which is largely supported by the estimated backward elimination coefficients.

All regressions in the Adaptation model yield positive and significant estimated coefficients for Dummy PrioClimate, SumKnowledge and Dummy Trustpoliticians, all supporting the hypothesized effect. The sign and significance of these coefficients are supported by the estimated model from the backward elimination procedure. The estimated coefficient for Dummy CCNotaffmeandfam is found significant and negative in the unfiltered regression; however, it becomes insignificant when implementing filters. The estimated coefficient for IncomeMed does on the other hand become significant when implementing filters. None of the estimated coefficients for Female in Adaptation are significant, in contrast to the estimates in the Mitigation model.

7.2.4 Norway2/3 and NorwayFI

Norway2/3 (Model 4) and NorwayFI (Model 5) regression results are presented in table 7.6 and 7.7. The adjusted R^2s for Norway 2/3 suggest that the explanatory variables do not predict the dependent variable well. The unfiltered regression comprising all variables yields four positive and significant estimated coefficients. The sign of the coefficient for Dummy CCNotaffmeandfam opposes our prediction, as it indicates a positive WTP for mitigation if the respondents think that climate change will not affect them or their family. The significant coefficient estimations are supported in the estimated backward elimination model.

Norway FI estimates demonstrate better overall predictions of WTP, in terms of the F-statistics. The full, unfiltered regression estimates two negative and six positive

significant explanatory variables, which is largely supported by both the manual and the backward elimination regressions. Only the dummy coefficients for ImportanceEnvClim, FoodShortCCRel, and Worldsolvedenvprob were robust across the filters, accommodating the estimations of the coefficients in Norway2/3. All the significant coefficient estimates in the unfiltered model, with the exception of Dummy PrioEnvirPro, have signs in alignment with the hypothesis for each variable.

7.2.5 Global

Table 7.8 outlines the results from regressions on Global (Model 6). All models report to be significant at the 99% level. Regressing with filters increases the number of estimated significant coefficients, which is also observed in both the manual and backward elimination models. For example, a strict filtered manual elimination regression estimates 17 significant coefficients, as opposed to seven estimated by the unfiltered, full model regression. The signs of the estimated coefficients are mainly in accordance with hypotheses. Holding a job as an economist seems to have a positive impact on WTP for a global mitigation policy. Also worth noticing is the negative and significant coefficient estimate for Dummy AgainstNorGloProbl, strongly suggesting that an adverse attitude towards Norwegian engagement in global affairs affect WTP for a global climate policy negatively.

7.2.6 Adaptation and AdaptationGeo

The regressions on Adapt (Model 7) and AdaptGeo (Model 8) are presented in table 7.9 and 7.10. The models display a fairly high R^2, but provide mixed results in terms of the F-statistic. Only four explanatory variables are estimated to be significant in the unfiltered, all-inclusive Adapt model. The coefficients for SumKnowledge and Dummy Trustpoliticians are in addition estimated to be positive and significant in all backward elimination models, the latter indicating that confidence in politicians has a positive effect on WTP.

The unfiltered AdaptGeo regression containing all variables estimates six significant coefficients, which is supported by the manual and backward elimination estimates. None of the coefficients are conflicting with the expected effect. Both the Adapt and AdaptGeo model contains estimated independent variable coefficients, such as IncomeMed, Dummy PrioClimate, Dummy CCNotaffmeandfam, Dummy FoodShortCCRel, and Dummy Trustpoliticians, which is significant in one or two of the filter-treated regressions. Lastly, even though not significant, Female has a positive estimated coefficient in AdaptGeo.

7.2.7 Some last remarks on the regressions

Observing some of the independent variables not mentioned in the above analysis, the estimated coefficients for economists have the predicted negative sign in most cases, and being member of an environmental organization is estimated to have a positive effect on WTP, as expected. The coefficient estimations on political affiliation do not, on the other hand, comply completely with our hypotheses, as we expected right oriented respondents to have a higher WTP for adaptation policies compared with left oriented (baseline). In addition, the estimated effects of being farmers and fishermen are surprisingly found to be negative in half of the scenarios, conflicting with our expectation. Finally, believing that climate change is not real nor man-made do, as suspected, affect WTP for climate policies negatively to some degree, however the coefficients is not significant.

Several of these regressions may have confounded effects due to multicollinearity, which we deemed to be beyond our research scope to fully diagnose and address. Additional econometric work towards arriving at more parsimonious model specifications, without relying on backward elimination (or other mechanical model selection procedure) is left for the future. One possible avenue to explore would be factor analysis to reduce the dimensionality of the exploratory data.

8. Discussions

8.1 Summary of main results

The purpose of this section is to address the three main research questions. First we wanted to examine if WTP for mitigation was different from or equal to WTP for adaptation. Secondly, we sought to investigate whether WTP for different policies varied within the policy categories. Thirdly, we wanted to explore what factors affect the magnitude of WTP and differences in WTP for across policies.

To narrow the following analysis we focus on findings from using the semi-strictly filtered WTP data.

The main result for research question 1 is that there is no statistical difference in WTP for mitigation (Plan A) versus adaptation (Plan B). This was evidenced by overlapping confidence intervals for the means, similar medians, and generally insignificant policy dummies in the regression analysis. In total, this suggests that Hypothesis I can be rejected. However, an additional analysis offered in section 8.2 challenges this suggestion.

The overall positive WTP for climate policies is interesting, and indicates a general support for implementation of policy measures to address the effects of climate change. However, the overall median WTP is substantially lower than average WTP, which comes from the nontrivial share of respondents who have zero WTP (even when protest respondents are excluded). Hypothesis I, the expectation that WTP is higher for mitigation than WTP for adaptation, is based on the ideas of reluctance towards change, and use and non-use values associated with mitigation. On the other hand, use values are also associated with adaptive measures, such as improved infrastructure or farming technologies, suggesting that the WTP could be higher for adaptation. It is also unclear in retrospect, whether risk-averse people should prefer mitigation or adaptation. Another possible explanation for our finding is that we chose not to explicitly focus on the attributes of climate policies, nor to implement experimental variation in attribute levels in the CV design. This may have led to more homogenous preferences in terms of WTP than would be the case had we utilized a choice experiment.

Regarding research question 2, analysis of the core policies provides results similar to the aggregated models, meaning that no statistically difference in WTP was found between the five climate policies. Some useful observations can, however, be drawn from the results. First, AdaptGeo exhibits an estimated average WTP about 40 percent higher than Adapt, a provocative finding that opposes Hypothesis IV. The idea behind this hypothesis was an a priori belief in a general skepticism among Norwegians towards disrupting the course of nature through actions such as geoengineering. Second, mean WTP estimated for Norway 2/3 is close to 20 percent higher than Norway FI, in line with Hypothesis II that predicts higher WTP for measures from which Norwegians can potentially benefit directly through consumption.

Attitudes, beliefs, knowledge and socio-economic characteristics of the respondents are factors addressed by research question 3. Our analysis reveals determination of heterogeneous preferences for climate policies. The respondents demonstrate a general concern about the effects of climate change, which confirms the findings from TNS Gallup (2012) and Synovate (2012). On the other hand, there are stronger preferences for prioritizing other public policy areas such as healthcare and education over climate in national budgets. This result may be partially explained by an over-representation of respondents working in these sectors in the sample, compared to the Norwegian census, or, more likely, by the effects of climate change not being perceived as an imminent threat. The latter idea coincides with results from a similar study conducted in the Basque Country, Spain (Longo et al., 2012), and is possibly also a reason for the rejection of Hypothesis I. Furthermore, Synovate (2012), argues that the increasing awareness of climate issues and implementation of small-scale, domestic initiatives may cause Norwegians to feel they already contribute to reducing climate change and that more comprehensive mitigation measures can be deferred to sometime in the future. Hypothesis I is, however, most likely rejected because of the determinants´ effects which work in opposite direction, inducing the actual impact on WTP to be confounded.

8.2 One additional analysis

An important caveat to the discussion of these findings is that the respondents were randomly assigned one policy in the CV scenario, and not offered the discrete

policy-choice question. Thus, a closer analysis of the discrete policy-choice question offers some interesting additional insights. When the response pattern from this question is examined, compelling preferences for mitigation strategies are found, contradicting the previous rejection of Hypothesis I. There is a large gap between respondents that expressed a positive WTP for an adaptation policy and the respondents who chose an adaptation policy in the discrete policy-choice question. This implies that a significant percentage of respondents who expressed positive WTP for adaptation actually prefer either mitigation, none of the described climate policies or no climate policy at all. Thus, the respondent´s true WTP for adaptation is possibly lower than the WTP expressed in the assigned CV question. An inconsistency between implied preferences in the WTP question and the discrete policy-choice question most likely has an impact on the outcome. A plausible assumption may be that if the respondent did choose a different policy in the discrete policy-choice question than the assigned policy for which she had positive WTP, then the true, or unrestricted, WTP in the elicitation question is equal to zero. This suggests that a conditional, or restrictive, WTP may exist.

This conditional WTP can be found by recoding zero WTP to the respondents with positive WTP who chose a different policy in the discrete policy-choice question. A summary of the original and conditional results for such an analysis based on the semi-strict filtered data is presented in table 8.1.

Table 8.1 – Conditional WTP semi-strict Mitigation versus Adaptation

Dependent variable	Mitigation	Adaptation	Mitigation	Adaptation
	Semi-strict filter		**Conditional semi-strict filter**	
WTP Mean	**1863.71**	1776.54	**569.47**	119.42
WTP Std Error of mean	111.59	143.76	77.69	35.28

Now we find that, in contrast to the initial WTP examination, the conditional WTP for Mitigation has non-overlapping confidence intervals with Adaptation (implied by mean and standard error statistics), meaning that the difference is statistically different from zero. Furthermore, the analysis shows that WTP is almost five times higher for Mitigation than Adaptation. This observation alters the previously conclusion offered to research question 1.

Analogously, this recoding can also be performed for the five core policies, and the result is presented in table 8.2.

Table 8.2 – Conditional WTP semi-strict core policies

Dependent variable	Norway 2/3	Norway FI	Global	Adapt	Adapt Geo
	Semi-strict filter				
WTP Mean	1906.40	1614.36	1959.52	1580.73	**2209.26**
WTP Std Error of mean	194.65	194.82	177.72	157.88	298.03
	Conditional semi-strict filter				
WTP Mean	401.45	88.30	**1010.71**	116.48	125.93
WTP Std Error of mean	104.38	59.70	160.58	42.28	64.35

We observe that the global climate policy has non-overlapping confidence intervals with the other policies, which means that this difference is also statistically different from zero. Thus, we can find support for Hypothesis III. By inspecting the other policies, we see that the WTP distribution varies to a greater extent than the initial mean WTP. None of the other policies, however, are found to be statistically different from each other.

For every policy, mean WTPs are lower as a portion of respondents are recoded to have zero WTP. Interestingly, the mean WTP for Global has not decreased with same magnitude as the other policies. This is explained by those respondents who stated positive WTP for Global and also chose Global as their most preferred policy in the discrete policy-choice question. The largest decrease, however, is for AdaptGeo where the mean WTP decreased by roughly 2000 NOK, implying that most respondents did in fact prefer another policy or no climate policy at all before AdaptGeo when given the choice.

Addressing the overall objective of this study, we find evidence that the preferences of the Norwegian population do not coincide with the current climate policy pursued in Norway. By making plausible assumptions and recoding data it is revealed that the majority prefers and has a higher WTP for a global mitigation policy. It is stressed that ascribing zero WTP to respondents with such differing preferences, given positive WTP, might be speculative since the respondent did in fact state a positive WTP for the assigned policy. This recoding does yield important input with regards to further research and interpretation.

8.3 Research issues of concern

When conducting a CV study, a normal time frame for the design, implementation and gathering of data is six months to one year. Due to time constraints and limited framework, compromises had to be made in the design of this study. For completeness, there are several other points that should be mentioned with respect to the research.

Regarding the valuation section, the respondents were asked to state their WTP using a payment card. The ideal payment vehicle would have been a randomized single-bounded dichotomous choice question, however due to technical and time-consuming challenges this proved not to be feasible.

As mentioned in the above discussion we have chosen not to explicitly focus on the attributes of climate policies, nor to implement experimental variation in attribute levels in the CV design. This could, however, provide valuable and further insights. On the other hand, such design is more natural to implement when conducting a choice experiment. Furthermore, there are many explanatory variables in the analysis that is likely to capture the same effects. In future research, it might be appropriate to utilize factor analysis for grouping of these variables.

This research has not focused on testing validity concepts, such as scope test (content validity), in the analysis. This is common, and thus recommended, when administering a CV survey (Mitchell and Carson, 1989; Arrow et al., 1993; Bateman et al., 2002; Champ et al., 2003; Kling et al., 2012). Nevertheless, we did inspect the WTP distributions in section 7.2.1, which presented the cumulative and reversed distributions for the core policies. Here we observed a pattern corresponding to downwards-sloping demand curves. In addition, most explanatory variables did exhibit the predicted effect based on economic theory and intuition.

As to the survey mode, the NOAA panel generally recommends to use face-to-face interviews when conducting a CV study (Arrow et al., 1993). Since we chose to use an online survey, it would have been interesting to utilize a control group in order to evaluate to which extent the research findings are robust with respect to survey mode.

8.4 Implications for future work

The preferences and WTP for climate policies provide valuable insight for Norwegian policy-makers. Thus, in order to make well-informed decisions when designing and implementing an optimal climate and environmental policy, such knowledge is essential. The WTP estimates and the general preferences revealed from our sample could provide policy-makers with valuable information. However, further examination is necessary in order to fully understand the Norwegian public´s preferences regarding climate policy. It may be appropriate to focus further research on the attributes related to climate policies through implementation of choice experiments.

Regarding the development of multilateral climate policy, the existing valuation literature is insufficient. This is mainly because, so far, climate politics have focused on mitigating the effects of climate change. In the fight against this global problem, it is very likely that future climate policy will be a combination of both mitigation and adaptation strategies, as climate change is already happening. Nevertheless, this research stresses the importance of detecting and determining the publics´ preference for both types of measures in order to design an optimal climate policy.

9. Conclusions

By administering a carefully designed valuation survey this thesis has examined Norwegian households' preferences and WTP for various climate policies. From a representative sample of 1164 Norwegian adults, results show the majority of respondents are generally concerned about the effects of climate change, and believe it is to some extent induced by human behavior. The CV method was used to elicit WTP for mitigating the effects of climate change (Plan A) versus WTP for adapting to climate change (Plan B). The analysis revealed that a majority of respondents have positive WTP for climate policy. The representative Norwegian household is willing to pay on average between 1200 and 2500 NOK annually over the next four year period to support the implementation of a climate policy.

The initial analysis indicates that there is no statistical significant difference between WTP for mitigation versus adaptation, or among the various policies that exist within the mitigation or adaptation categories. However, when we utilize information from a discrete policy-choice question, we find that the majority of the sample supports a global collaborative mitigation policy, and that WTP for mitigation is greater than WTP for adaptation.

These first WTP estimates for climate policy in Norway provide important insights to domestic policy-makers. Based on the highest estimate, the aggregate valuation of a climate policy is about 5.6 billion NOK annually over the next four years. Implementation of measures that cost more than such an amount cannot be justified on a social cost-benefit basis. In addition, the stated preferences in this study do not appear to coincide with the currently pursued climate policy in Norway. This should be an important signal to policy-makers, and provides valuable knowledge with respect to the design of optimal climate and environmental policy for the country.

Lastly, the existing literature on valuation of climate policy is insufficient, mainly because so far, the research has been focused on mitigation. In combating climate change, it is highly probable that climate policy will be a combination of both mitigation and adaptation strategies. Therefore, it is crucial to determine the public's preferences for both types of measures in order to design the best policy. This thesis contributes to this research and provides a path for further studies.

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Appendices

KLIMA OG MILJØ: HVA SYNES DU?

OM DENNE UNDERSØKELSEN

DIN MENING ER VIKTIG!

Takk for at du hjelper oss med denne undersøkelsen som er en del av samfunnsøkonomisk forskning ved Universitetet i Stavanger. Spørreundersøkelsen omfatter temaet *miljø- og klimapolitikk*, som i stadig større grad blir gjenstand for offentlig oppmerksomhet og debatt.

Svarene du gir oss på denne undersøkelsen kan hjelpe myndigheter og offentlige forvaltningsorganer til å få økt forståelse for den norske befolkningens holdninger og preferanser, og dermed bidra i utforming av best mulig miljø- og klimapolitikk for Norge.

Vi er kun interessert i dine meninger. *Det er viktig at alle som får invitasjon til å delta, både de som er interessert og de som ikke er interessert i temaet, svarer så ærlig og fullstendig på undersøkelsen som mulig.* Det finnes ingen riktige eller gale svar**.**

Svarene du gir vil være konfidensielle og som deltaker er du helt anonym. Vi er hovedsakelig interessert i sammenfatning av svarene over alle deltakerne. Det vil ta cirka 10-20 minutter å gjennomføre hele undersøkelsen.

TAKK FOR DIN DELTAKELSE!

KLIMA OG MILJØ: HVA SYNES DU?

INNLEDENDE SPØRSMÅL

1. Hvilke politiske saker er det viktigst at blir prioritert i offentlige, nasjonale budsjetter? [Velg opp til 4 saker som er viktige for deg og din husholdning]

- ☐ Kollektivtransport
- ☐ Eldreomsorg
- ☐ Forskning
- ☐ Fattigdom
- ☐ Likestilling
- ☐ Veinett
- ☐ Strømnett
- ☐ Fredsmekling
- ☐ Helse
- ☐ Sysselsetting
- ☐ Innvandring
- ☐ Utdanning
- ☐ Miljøvern
- ☐ Landbruk
- ☐ Kriminalitet
- ☐ Familie
- ☐ Forsvaret
- ☐ Kultur
- ☐ Klima
- ☐ Idrett
- ☐ Bistand
- ☐ Økonomi
- ☐ Integrering
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

INNLEDENDE SPØRSMÅL (fortsetter)

2. På en skala fra -5 (svært uviktig) til 5 (svært viktig), hvor viktig er miljø- og klimapolitikk for deg og din husholdning?

-5	-4	-3	-2	-1	0	1	2	3	4	5
○	○	○	○	○	○	○	○	○	○	○

KLIMA OG MILJØ: HVA SYNES DU?

INNLEDENDE SPØRSMÅL (fortsetter)

3. Hva er de viktigste miljø- og ressurspolitiske satsingsområdene slik du ser det? [Velg opptil 4 alternativer]

- ☐ Øke vedlikehold av norske naturområder
- ☐ Unngå naturinngrep som for eksempel høyspentmaster
- ☐ Redusere utslipp av klimagasser
- ☐ Øke Norges selvforsyning av mat
- ☐ Verne Lofoten og Vesterålen
- ☐ Elektrifisere offshore installasjoner
- ☐ Verne landets jordbruksarealer
- ☐ Beskytte truede plante- og dyrearter
- ☐ Redusere norsk utvinning av olje og gass
- ☐ Redusere lokal luftforurensning
- ☐ Forbedre håndtering av avfall fra industri og gruvedrift
- ☐ Utbygge mer fornybar energi som vindkraft og småskala vannkraft
- ☐ Bevare kulturminner
- ☐ Utfase hvalfangst som en del av norsk havbruk

- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

INNLEDENDE SPØRSMÅL (fortsetter)

4. Hvilket av utsagnene nedenfor samsvarer best med ditt syn på klimaendringer?

- ◯ Klimaendringer er ikke reelle
- ◯ Klimaendringer er reelle, men ikke menneskeskapt
- ◯ Klimaendringer er reelle og delvis menneskeskapt
- ◯ Klimaendringer er reelle og hovedsaklig menneskeskapt
- ◯ Vet ikke / usikker

KLIMA OG MILJØ: HVA SYNES DU?

INNLEDENDE SPØRSMÅL (fortsetter)

5. Til hvilken grad er du enig eller uenig i følgende påstander om klimaendringer?

	Helt uenig	Delvis uenig	Nøytral	Delvis enig	Helt enig
Økt frekvens av ekstremvær er ikke relatert til klimaendringer	◯	◯	◯	◯	◯
Mat- og vannmangel i u-land er hovedsakelig en følge av klimaendringer	◯	◯	◯	◯	◯
Klimaendringer er uunngåelig. Vi kan ikke gjøre noe for å stoppe dem	◯	◯	◯	◯	◯
Global folkehelse vil forverres de neste 50 årene som en følge av klimaendringer	◯	◯	◯	◯	◯
Klimaendringer utgjør en stor trussel for verden	◯	◯	◯	◯	◯
Dersom ingenting gjøres, vil klimaendringer få negative konsekvenser for fremtidige generasjoner	◯	◯	◯	◯	◯
Klimaendringer vil ikke påvirke meg og min familie	◯	◯	◯	◯	◯
Endringer i ismassen i arktiske og antarktiske strøk er en del av et naturlig forløp	◯	◯	◯	◯	◯
Klimaendringer utgjør ingen trussel for Norge	◯	◯	◯	◯	◯
Reduksjon av klimagassutslipp i Norge kan påvirke globale klimaendringer	◯	◯	◯	◯	◯
Media fremlegger et balansert og troverdig bilde av klimaproblemet	◯	◯	◯	◯	◯
Utvikling innen genmanipulering og bioteknologi vil gjøre fremtidig jordbruk mindre sårbart for klimaendringer	◯	◯	◯	◯	◯
Jeg har stor tro på internasjonal klimaforskning	◯	◯	◯	◯	◯
Klimaendringer vil ha	◯	◯	◯	◯	◯

negative effekter på biologisk
mangfold

KLIMA OG MILJØ: HVA SYNES DU?

INNLEDENDE SPØRSMÅL (fortsetter)

6. Kryss av for alle svaralternativ nedenfor som du har hørt om eller kjenner til.

- ☐ Bjerknessenteret
- ☐ Klimarealistene
- ☐ Jørgen Randers
- ☐ An Inconvenient Truth
- ☐ Cicero
- ☐ Stortingets Klimaforlik
- ☐ The Great Global Warming Swindle
- ☐ Geoengineering
- ☐ El Niño
- ☐ Klimakonvensjonen
- ☐ Kvotehandel
- ☐ Klimameldingen 2012
- ☐ FNs Klimapanel
- ☐ IPCC
- ☐ Kyoto 2-avtalen
- ☐ Albedo
- ☐ Klimakur 2020
- ☐ Togradersmålet
- ☐ Klif
- ☐ Har IKKE hørt om noen av disse

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK

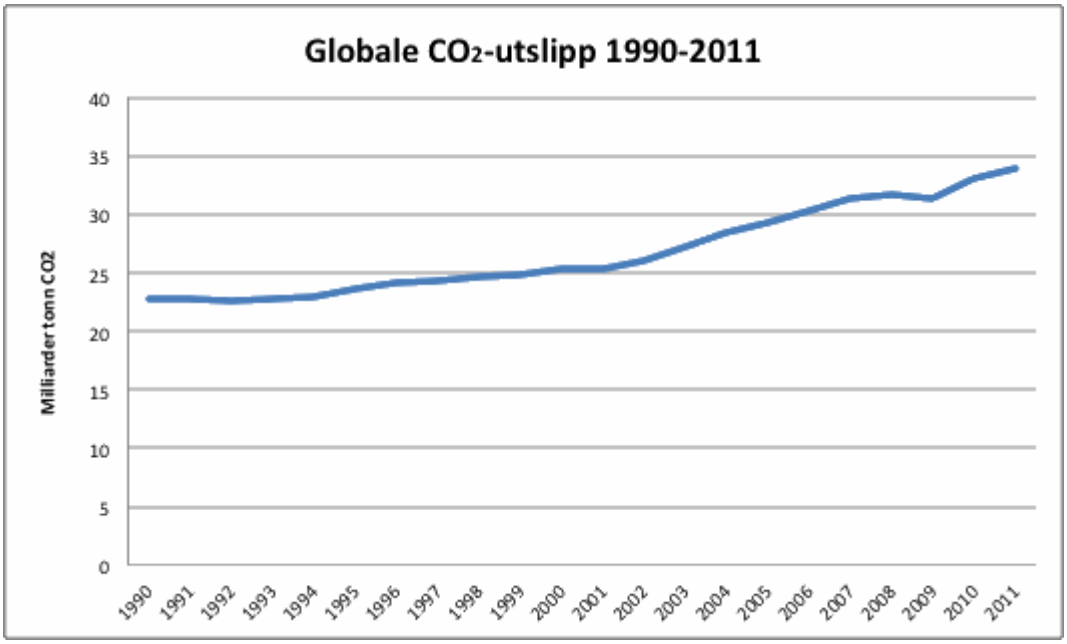
Du vil nå få to sider med informasjon om klimaendringer, med henholdsvis globale og norske perspektiver. Deretter vil du få noen konkrete spørsmål om hva du synes om en bestemt foreslått klimapolitikk for Norge. *Vennligst les informasjonsidene nøye før du går videre til spørsmålene om dine klimapolitiske preferanser.*

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

GLOBALE KLIMAENDRINGER

Selv om både historiske data og prognoser for fremtidige gjennomsnittstemperaturer og klimavariasjon er forbundet med stor usikkerhet, er det et faktum at utslipp av klimagasser (som for eksempel karbondioksid (CO_2)) og deres konsentrasjon i atmosfæren har steget betraktelig de siste tiårene. Utslipp som kan tilskrives menneskelig adferd har økt med om lag 50 % over de siste 20 årene (*se graf under*). Dette skyldes et generelt økt forbruk av fossile energikilder (olje, gass, kull, tre), og aktivitet i skogbruk, industri, jordbruk og transport.



I løpet av den samme 20-årsperioden har den globale gjennomsnittstemperaturen steget, og mange forskere mener dette kan ha sammenheng med utslipp av klimagasser. FNs Klimapanels (IPCC) prognoser anslår at gjennomsnittstemperaturen kan stige med 2-4 grader innen 2050, noe som med stor sannsynlighet vil medføre skadelige konsekvenser for mennesker og miljøet (som for eksempel gjennom økt frekvens av ekstremvær som stormer, orkaner, regn, flommer, tørke og hetebølger som vil føre til mat -og vannmangel, spredning av sykdommer via skadedyr og utrydding av plante -og dyrearter). I følge rapporter fra FNs Klimapanel må utslipp på verdensbasis reduseres med 50-85 % innen 2050 for å stabilisere CO_2-nivået i atmosfæren.

Kilde: FNs Klimapanel (IPCC), 2012

7. I hvilken grad vil du si at du har kunnskap om dette temaet?

- ◯ Svært liten grad
- ◯ Liten grad
- ◯ Middels grad
- ◯ Stor grad
- ◯ Svært stor grad

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

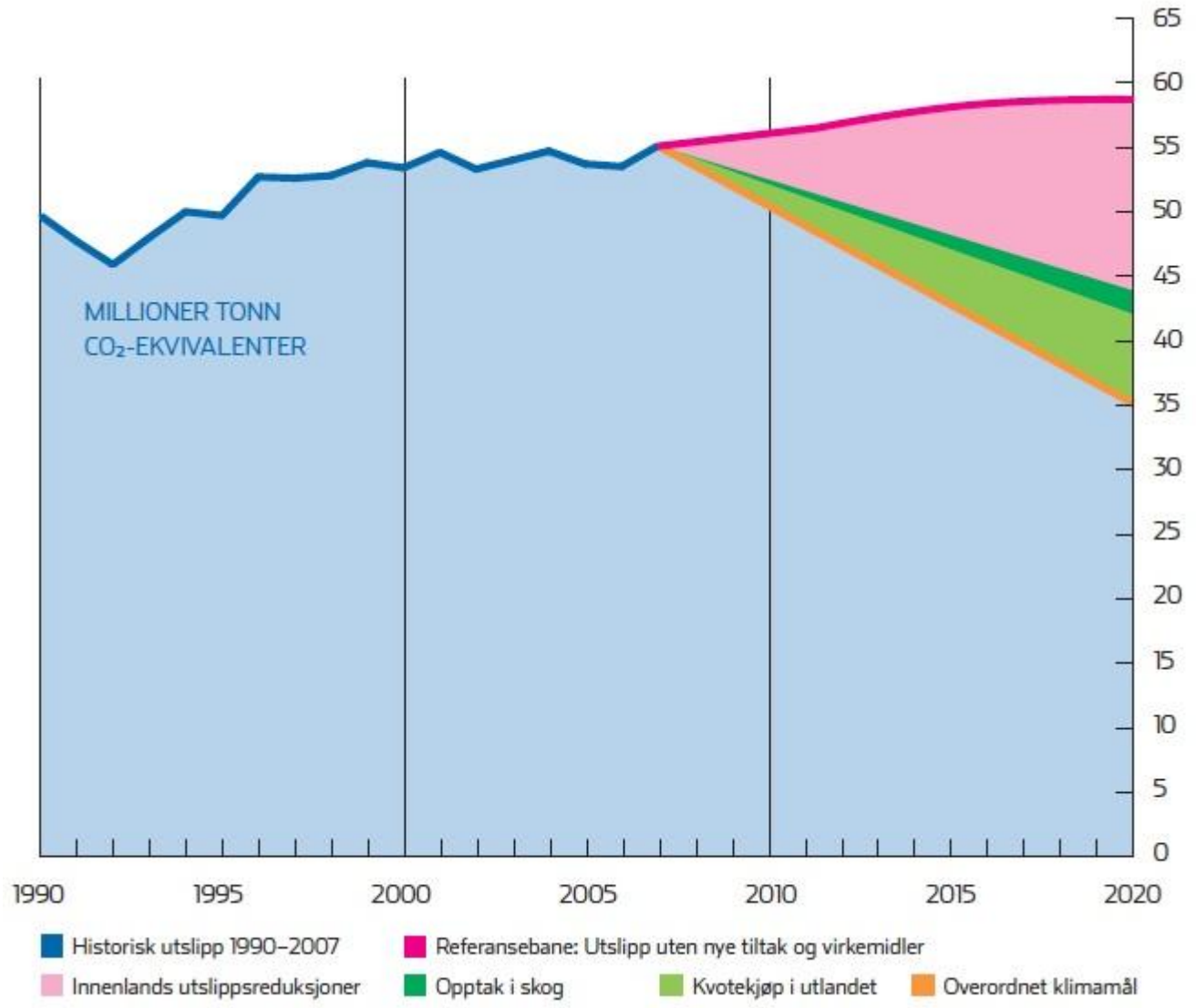
KLIMAENDRINGER OG NORGE

De fleste klimaforskere i dag er enige om at klimaendringer også kan få konsekvenser for Norge. Mer nedbør og vind, økte temperaturer (særlig i Nord-Norge), hyppigere frekvens av ødeleggende stormer og endrede leveområder for dyre- og plantearter som har utbredelse i Norge er blant noen av de negative konsekvensene som forventes.

I løpet av de 20 siste årene har utslipp av klimagasser i Norge økt med cirka 6 %, og tilsvarer per dags dato omtrent 53 millioner tonn CO_2 ekvivalenter, hvor transport, petroleum og industrisektoren er de største utslippskildene.

Selv om utslippene i Norge utgjør mindre enn 0,2 % av de samlede utslippene i verden, er det bred enighet blant norske politikere om at Norge skal føre en ambisiøs nasjonal klimapolitikk. Argumentet er at et rikt land som Norge bør ha et større ansvar for redusering av klimagassutslipp og slik være et foregangsland innen forebygging av klimaendringer.

Den norske klimapolitikken er forankret i Stortingets klimaforlik (2008, 2012) som er basert på internasjonale avtaler Norge har undertegnet (blant andre Kyoto 1 og Kyoto 2). Disse avtalene innebærer at norske utslipp av klimagasser skal reduseres med 22–24 millioner tonn CO_2-ekvivalenter innen 2020, noe som utgjør cirka 30 % reduksjon fra 1990-nivå. Som en del av denne klimamålsetningen er det bestemt at minst 2/3 av denne reduksjonen skal skje innenlands, og opp til 1/3 gjennom kvotekjøp eller investeringer i klimavennlige tiltak utenlands (se graf under).



Målsetting for klimapolitikken - Miljøverndepartementet/Klima- og forurensingsdirektoratet

Kilde: Klimakur 2020 (2010); Klimaforliket (2008, 2012)

8. I hvilken grad vil du si at du har kunnskap om norsk klimapolitikk?

- ◯ Svært liten grad
- ◯ Liten grad
- ◯ Middels grad
- ◯ Stor grad
- ◯ Svært stor grad

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

NORSK KLIMAPOLITIKK

For å oppnå de norske klimapolitiske målsetningene (*30 % utslippskutt, herav 2/3 innenlands*) vil det kreves innføring av omfattende klimatiltak. Dette inkluderer strengere regulering av industri, støtteordninger for investeringer i fornybar energi og implementering av klimavennlige husholdningsteknologier, omstillinger i transportsektor og landbruk, og liknende. Det er anslått at iverksetting av slike innenlands tiltak vil innebære kostnader på flere milliarder kroner i året. I tillegg kommer utlegg forbundet med kvotekjøp og investeringer i utlandet.

For å dekke kostnadene forbundet med den **norske klimapolitikken** vurderer myndighetene nå å etablere et **nasjonalt klimafond** som er øremerket dette formålet. Se for deg at dette fondet skulle finansieres gjennom en årlig **klimaskatt** pålagt alle husstander og bedrifter over den neste fireårs stortingsperioden (2013-2017).

9. Dersom det ble avholdt en folkeavstemning om etablering av et slikt nasjonalt klimafond, ville du da ha stemt for eller i mot?

- ◯ Stemt for
- ◯ Stemt mot
- ◯ Vet ikke / usikker

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

Under har vi listet opp en rekke kronebeløp. Hvilket av disse beløpene ligger nærmest det din husholdning er maksimalt villig til å betale i form av en ny klimaskatt, per år i de neste fire årene, for å finansiere den NORSKE KLIMAPOLITIKKEN gjennom et nasjonalt klimafond?

Før du svarer, tenk nøye gjennom følgende:

- **Din husholdnings budsjett**: Dersom husholdningen din betaler mer i skatt blir det mindre penger å bruke på andre ting som mat, klær, transport, strøm og dekning av andre husholdningsutgifter.

- **Offentlige budsjetter:** Det finnes kanskje andre offentlige goder og tjenester som din husstand mener det er viktigere å finansiere gjennom økt skatt som for eksempel utdanning, helse, eldreomsorg, og så videre.

10. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

◯ Kr 0	◯ Kr 2000	◯ Kr 5000
◯ Kr 200	◯ Kr 2250	◯ Kr 5500
◯ Kr 400	◯ Kr 2500	◯ Kr 6000
◯ Kr 600	◯ Kr 2750	◯ Kr 6500
◯ Kr 800	◯ Kr 3000	◯ Kr 7000
◯ Kr 1000	◯ Kr 3250	◯ Kr 7500
◯ Kr 1200	◯ Kr 3500	◯ Kr 8000
◯ Kr 1400	◯ Kr 3750	◯ Kr 9000
◯ Kr 1600	◯ Kr 4000	◯ Kr 10000
◯ Kr 1800	◯ Kr 4500	◯ Mer enn Kr 10000

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

11. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett
- ☐ For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer
- ☐ Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra
- ☐ Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål
- ☐ Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn
- ☐ Min husstand er villig til å betale for alle gode miljøformål.
- ☐ Jeg føler det forventes av meg slik denne undersøkelsen er konstruert
- ☐ Jeg er opptatt av å bevare naturen uavhengig av min egen bruk
- ☐ For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

12. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Det er de største utslippsnasjonene som bør betale, ikke Norge
- ☐ Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer
- ☐ Jeg føler ikke det er riktig å veie miljøet i penger
- ☐ Jeg stoler ikke på at pengene vil gå til det riktige formålet
- ☐ Jeg er skeptisk til et slikt fond
- ☐ Min husstands inntekt er for lav
- ☐ Skattenivået er allerede høyt nok
- ☐ Bedrifter bør betale for en slik politikk, ikke forbrukerne
- ☐ Myndighetene bør betale for en slik politikk, ikke forbrukerne
- ☐ Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem
- ☐ Jeg foretrekker en annen type klimapolitikk
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

NORSK KLIMAPOLITIKK BASERT PÅ UTENLANDSINVESTERINGER

For å oppnå det norske klimapolitiske hovedmålet (*30 % utslippskutt*) vil det kreves innføring av omfattende klimatiltak. På grunn av de store kostnadene forbundet med å oppnå disse utslippsreduksjonene innenlands, er et annet alternativ å satse hovedsakelig på norsk-finansierte tiltak i utlandet. Dette inkluderer både kvotekjøp, utvikling av klimavennlige energiteknologier, rensetiltak, karbonfangst- og lagring, energieffektivisering, investering i fornybar energi, og støtte til skogplanting og redusert avskoging.

For å dekke kostnadene forbundet med denne **klimapolitikken** vurderes det å etablere et **nasjonalt klimafond** som er øremerket dette formålet. Se for deg at dette fondet skulle finansieres gjennom en årlig **klimaskatt** pålagt alle husstander og bedrifter den neste fireårs stortingsperioden (2013-2017).

13. Dersom det ble avholdt en folkeavstemning om etablering av et slikt nasjonalt klimafond, ville du da ha stemt for eller i mot?

- ◯ Stemt for
- ◯ Stemt mot
- ◯ Vet ikke / usikker

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

Under har vi listet opp en rekke kronebeløp. Hvilket av disse beløpene ligger nærmest det din husholdning er maksimalt villig til å betale i form av en klimaskatt, per år i de neste fire årene, for å finansiere den NORSKE KLIMAPOLITIKKEN gjennom et nasjonalt klimafond?

Før du svarer, tenk nøye gjennom følgende:

- **Din husholdnings budsjett**: Dersom husholdningen din betaler mer i skatt blir det mindre penger å bruke på andre ting som mat, klær, transport, strøm og dekning av andre husholdningsutgifter.

- **Offentlige budsjetter:** Det finnes kanskje andre offentlige goder og tjenester som din husstand mener det er viktigere å finansiere gjennom økt skatt som for eksempel utdanning, helse, eldreomsorg, og så videre.

14. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

◯ Kr 0	◯ Kr 2000	◯ Kr 5000
◯ Kr 200	◯ Kr 2250	◯ Kr 5500
◯ Kr 400	◯ Kr 2500	◯ Kr 6000
◯ Kr 600	◯ Kr 2750	◯ Kr 6500
◯ Kr 800	◯ Kr 3000	◯ Kr 7000
◯ Kr 1000	◯ Kr 3250	◯ Kr 7500
◯ Kr 1200	◯ Kr 3500	◯ Kr 8000
◯ Kr 1400	◯ Kr 3750	◯ Kr 9000
◯ Kr 1600	◯ Kr 4000	◯ Kr 10000
◯ Kr 1800	◯ Kr 4500	◯ Mer enn Kr 10000

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

15. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra
- ☐ Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål
- ☐ For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer
- ☐ Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn
- ☐ Jeg føler det forventes av meg slik denne undersøkelsen er konstruert
- ☐ Jeg er opptatt av å bevare naturen uavhengig av min egen bruk
- ☐ Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett
- ☐ For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

16. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Min husstands inntekt er for lav
- ☐ Jeg er skeptisk til et slikt fond
- ☐ Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer
- ☐ Bedrifter bør betale for en slik politikk, ikke forbrukerne
- ☐ Skattenivået er allerede høyt nok
- ☐ Myndighetene bør betale for en slik politikk, ikke forbrukerne
- ☐ Jeg stoler ikke på at pengene vil gå til det riktige formålet
- ☐ Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem
- ☐ Det er de største utslippsnasjonene som bør betale, ikke Norge
- ☐ Jeg føler ikke det er riktig å veie miljøet i penger
- ☐ Jeg foretrekker en annen type klimapolitikk
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

GLOBAL KLIMAPOLITIKK

For å oppnå de globale klimapolitiske målsetningene (*50-85 % utslippskutt på verdensbasis*) vil det kreves innføring av omfattende klimatiltak. Dette inkluderer støtteordninger for implementering av klimavennlige teknologier, investeringer i rensetiltak, karbonfangst- og lagring, energieffektivisering og omlegging til renere energikilder, skogplanting og redusert avskoging, strengere reguleringer av utslipp, og liknende. Det er anslått at iverksetting av slike globale tiltak vil innebære kostnader på mange milliarder kroner per år.

For å dekke kostnadene forbundet med denne **globale klimapolitikken** har FNs klimapanel foreslått etablering av et **globalt klimafond** som skal øremerkes dette formålet. Videre er det tatt til orde for at fondet skal finansieres gjennom en årlig **internasjonal klimaskatt** pålagt husholdninger og bedrifter i alle FNs medlemsland i den neste fireårs perioden (2013-2017).

17. Se for deg at det internasjonale samfunnet ble enig om å etablere et globalt klimafond og at Norge skulle ta stilling til sin deltakelse gjennom en nasjonal folkeavstemning. Ville du da stemt for eller i mot?

- ◯ Stemt for
- ◯ Stemt mot
- ◯ Usikker / vet ikke

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

Under har vil listet opp en rekke kronebeløp. Hvilket av disse beløpene ligger nærmest det din husholdning er maksimalt villig til å betale i form av en klimaskatt, per år i de neste fire årene, for å finansiere den GLOBALE KLIMAPOLITIKKEN gjennom et globalt klimafond?

Før du svarer, tenk nøye gjennom følgende:

- **Din husholdnings budsjett**: Dersom husholdningen din betaler mer i skatt blir det mindre penger å bruke på andre ting som mat, klær, transport, strøm og dekning av andre husholdningsutgifter.
- **Offentlige budsjetter:** Det finnes kanskje andre offentlige goder og tjenester som din husstand mener det er viktigere å finansiere gjennom økt skatt som for eksempel utdanning, helse, eldreomsorg, og så videre.

18. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

◯ Kr 0	◯ Kr 2000	◯ Kr 5000
◯ Kr 200	◯ Kr 2250	◯ Kr 5500
◯ Kr 400	◯ Kr 2500	◯ Kr 6000
◯ Kr 600	◯ Kr 2750	◯ Kr 6500
◯ Kr 800	◯ Kr 3000	◯ Kr 7000
◯ Kr 1000	◯ Kr 3250	◯ Kr 7500
◯ Kr 1200	◯ Kr 3500	◯ Kr 8000
◯ Kr 1400	◯ Kr 3750	◯ Kr 9000
◯ Kr 1600	◯ Kr 4000	◯ Kr 10000
◯ Kr 1800	◯ Kr 4500	◯ Mer enn Kr 10000

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

19. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett
- ☐ Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra
- ☐ Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål
- ☐ For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer
- ☐ Jeg er opptatt av å bevare naturen uavhengig av min egen bruk
- ☐ Jeg føler det forventes av meg slik denne undersøkelsen er konstruert
- ☐ Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn
- ☐ For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

20. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Min husstands inntekt er for lav
- ☐ Skattenivået er allerede høyt nok
- ☐ Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer
- ☐ Jeg stoler ikke på at pengene vil gå til det riktige formålet
- ☐ Jeg er skeptisk til et slikt fond
- ☐ Bedrifter bør betale for en slik politikk, ikke forbrukerne
- ☐ Jeg føler ikke det er riktig å veie miljøet i penger
- ☐ Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem
- ☐ Det er de største utslippsnasjonene som bør betale, ikke Norge
- ☐ Myndighetene bør betale for en slik politikk, ikke forbrukerne
- ☐ Jeg foretrekker en annen type klimapolitikk
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

NORSK KLIMATILPASNINGSPOLTIKK

En alternativ klimapolitikk er å tilpasse seg endringer i klimaet, *i stedet for innføre tiltak som tar sikte på å redusere klimagassutslipp*. Denne strategien innebærer at land (eller geografiske regioner) iverksetter skreddersydde tiltak for å redusere sin eksponering og sårbarhet overfor de potensielle negative effektene av klimaendringer (havstigning, flom, tørke, tropiske sykloner, mat-/vannknapphet, utrydding av dyr- og plantearter, og liknende). Eksempler på tilpasningstiltak inkluderer kystbeskyttende teknologier (diker, demninger, o.l.), dyrking av mer varierte og robuste jordbruksavlinger, forsterking av infrastruktur (veier, strømforsyningsnett o.l.), samt effektivisering av nåværende energi- og vannforbruk.

For Norge ville en slik **klimatilpasningspolitikk** medføre omfattende kostnader på flere milliarder i året. Se for deg at et **nasjonalt klimatilpasningsfond** skulle øremerkes til å dekke disse kostnadene, og at dette fondet skulle finansieres gjennom en årlig **klimatilpasningsskatt** pålagt alle husstander og bedrifter over den neste fireårs stortingsperioden (2013-2017).

21. Dersom det ble avholdt en folkeavstemning om etablering av et slikt klimatilpasningsfond, ville du da ha stemt for eller i mot?

- ◯ Stemt for
- ◯ Stemt mot
- ◯ Vet ikke / usikker

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

Under har vi listet opp en rekke kronebeløp. Hvilket av disse beløpende ligger nærmest det din husholdning er maksimalt villig til å betale i form av en klimatilpasningsskatt, per år i de neste fire årene, for å finansiere en NORSK KLIMATILPASNINGSPOLITIKK gjennom et klimatilpasningsfond?

Før du svarer, tenk nøye gjennom følgende:

- **Din husholdnings budsjett**: Dersom husholdningen din betaler mer i skatt blir det mindre penger å bruke på andre ting som, mat, klær, transport, strøm og dekning av andre husholdningsutgifter.

- **Offentlige budsjetter:** Det finnes kanskje andre offentlige goder og tjenester som din husstand mener det er viktigere å finansiere gjennom økt skatt, som for eksempel utdanning, helse, eldreomsorg og så videre.

22. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

◯ Kr 0	◯ Kr 2000	◯ Kr 5000
◯ Kr 200	◯ Kr 2250	◯ Kr 5500
◯ Kr 400	◯ Kr 2500	◯ Kr 6000
◯ Kr 600	◯ Kr 2750	◯ Kr 6500
◯ Kr 800	◯ Kr 3000	◯ Kr 7000
◯ Kr 1000	◯ Kr 3250	◯ Kr 7500
◯ Kr 1200	◯ Kr 3500	◯ Kr 8000
◯ Kr 1400	◯ Kr 3750	◯ Kr 9000
◯ Kr 1600	◯ Kr 4000	◯ Kr 10000
◯ Kr 1800	◯ Kr 4500	◯ Mer enn Kr 10000

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

23. Hva er de viktigste grunnene til at din husstand er villig til å betale for en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett
- ☐ Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra
- ☐ Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål
- ☐ Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn
- ☐ For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer
- ☐ Jeg føler det forventes av meg slik denne undersøkelsen er konstruert
- ☐ Jeg er opptatt av å bevare naturen uavhengig av min egen bruk
- ☐ For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

24. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Min husstands inntekt er for lav
- ☐ Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer
- ☐ Myndighetene bør betale for en slik politikk, ikke forbrukerne
- ☐ Jeg er skeptisk til et slikt fond
- ☐ Jeg føler ikke det er riktig å veie miljøet i penger
- ☐ Det er de største utslippsnasjonene som bør betale, ikke Norge
- ☐ Bedrifter bør betale for en slik politikk, ikke forbrukerne
- ☐ Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem
- ☐ Jeg stoler ikke på at pengene vil gå til det riktige formålet
- ☐ Skattenivået er allerede høyt nok
- ☐ Jeg foretrekker en annen type klimapolitikk
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

NORSK KLIMATILPASNINGSPOLITIKK MED INVESTERINGER I GEOENGINEERING

En alternativ klimapolitikk er å tilpasse seg endringer i klimaet, *i stedet for innføre tiltak som tar sikte på å redusere klimagassutslipp*. Denne strategien innebærer at land (eller geografiske regioner) iverksetter skreddersydde tiltak for å redusere sin eksponering og sårbarhet overfor de potensielle negative effektene av klimaendringer (havstigning, flom, tørke, tropiske sykloner, mat-/vannknapphet, utrydding av dyr- og plantearter, og liknende). Eksempler på tilpasningstiltak inkluderer implementering av kystbeskyttende teknologier (diker, demninger, o.l.), dyrking av mer varierte og robuste jordbruksavlinger, forsterking av infrastruktur (veier, strømforsyningsnett o.l.), samt effektivisering av nåværende energi- og vannforbruk.
Videre har nyere forskning vist at såkalt **geoengineering** (eller "klimafiksing" som det kalles på norsk) har potensiale til å bli brukt som ledd i tilpasningspolitikk på internasjonalt plan. Geoengineering inkluderer diverse teknologier som kan beskytte kloden mot stråling og varme fra solen og dermed bidra til å regulere den globale temperaturen og motvirke konsekvensene av klimagassutslipp. Eksempler er induserte vulkanutbrudd, plassering av kjempespeil i verdensrommet og "bleking" av skyer.

For Norge ville en slik **klimatilpasningspolitikk *med bidrag til internasjonale geoengineering investeringer*** medføre kostnader på flere milliarder i året. Se for deg at et **nasjonalt klimatilpasningsfond** skulle øremerkes til å dekke disse kostnadene og at dette fondet skulle finansieres gjennom en årlig **klimatilpasningsskatt** pålagt alle husstander og bedrifter over den neste fireårs stortingsperioden (2013-2017).

25. Dersom det ble avholdt en folkeavstemning om etablering av et slikt klimatilpasningsfond ville du da ha stemt for eller i mot?

- ◯ Stemt for
- ◯ Stemt mot
- ◯ Usikker / vet ikke

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

Under har vi listet opp en rekke kronebeløp. Hvilket av disse beløpende ligger nærmest det din husholdning er maksimalt villig til å betale i form av en klimatilpasningsskatt per år i de neste fire årene for å finansiere en NORSK KLIMATILPASNINGSPOLITIKK gjennom et klimatilpasningsfond?

Før du svarer, tenk nøye gjennom følgende:

- **Din husholdnings budsjett**: Dersom husholdningen din betaler mer i skatt blir det mindre penger å bruke på andre ting, som, mat, klær, transport, strøm og dekning av andre husholdningsutgifter.

- **Offentlige budsjetter:** Det finnes kanskje andre offentlige goder og tjenester som din husstand mener det er viktigere å finansiere gjennom økt skatt, som for eksempel utdanning, helse, eldreomsorg og så videre.

KLIMA OG MILJØ: HVA SYNES DU?

26. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

- ◯ Kr 0
- ◯ Kr 200
- ◯ Kr 400
- ◯ Kr 600
- ◯ Kr 800
- ◯ Kr 1000
- ◯ Kr 1200
- ◯ Kr 1400
- ◯ Kr 1600
- ◯ Kr 1800
- ◯ Kr 2000
- ◯ Kr 2250
- ◯ Kr 2500
- ◯ Kr 2750
- ◯ Kr 3000
- ◯ Kr 3250
- ◯ Kr 3500
- ◯ Kr 3750
- ◯ Kr 4000
- ◯ Kr 4500
- ◯ Kr 5000
- ◯ Kr 5500
- ◯ Kr 6000
- ◯ Kr 6500
- ◯ Kr 7000
- ◯ Kr 7500
- ◯ Kr 8000
- ◯ Kr 9000
- ◯ Kr 10000
- ◯ Mer enn Kr 10000

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

27. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra
- ☐ Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett
- ☐ Jeg er opptatt av å bevare naturen uavhengig av min egen bruk
- ☐ Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn
- ☐ Jeg føler det forventes av meg slik denne undersøkelsen er konstruert
- ☐ Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål
- ☐ For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer
- ☐ For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

28. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

- ☐ Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem
- ☐ Det er de største utslippsnasjonene som bør betale, ikke Norge
- ☐ Jeg er skeptisk til et slikt fond
- ☐ Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer
- ☐ Skattenivået er allerede høyt nok
- ☐ Myndighetene bør betale for en slik politikk, ikke forbrukerne
- ☐ Bedrifter bør betale for en slik politikk, ikke forbrukerne
- ☐ Min husstands inntekt er for lav
- ☐ Jeg føler ikke det er riktig å veie miljøet i penger
- ☐ Jeg stoler ikke på at pengene vil gå til det riktige formålet
- ☐ Jeg foretrekker en annen type klimapolitikk
- ☐ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

29. Dersom du fritt kunne velge hvilken type klimapolitikk Norge skulle føre, hvilken av alternativene under foretrekker du?

	Ditt valg
NORSK KLIMAPOLITIKK (En selvstendig, utslippsreduserende klimapolitikk for Norge hvor minst 2/3 av reduksjonen skal skje innenlands, og opptil 1/3 gjennom kvotehandel og investeringer i tiltak og klimavennlige teknologier utenlands)	◯
NORSK KLIMAPOLITIKK BASERT PÅ UTENLANDSINVESTERINGER (En selvstendig, utslippsreduserende klimapolitikk for Norge hvor reduksjonen utelukkende skjer gjennom investeringer i tiltak og klimavennlige teknologier utenlands)	◯
GLOBAL KLIMAPOLITIKK (Deltakelse i en internasjonal, utslippsreduserende klimapolitikk hvor reduksjonen skjer gjennom implementering av klimavennlige teknologier og tiltak bindende for alle medlemsland i FN, inkludert Norge)	◯
NORSK KLIMATILPASNINGSPOLITIKK (En selvstendig klimapolitikk som inkluderer tiltak for å redusere Norges eksponering og sårbarhet overfor potensielle negative effekter av klimaendringer gjennom ulike tilpasningsstrategier)	◯
NORSK KLIMATILPASNINGSPOLITIKK MED GEOENGINEERING (En selvstendig klimapolitikk som inkluderer tiltak for å redusere Norges eksponering og sårbarhet overfor potensielle negative effekter av klimaendringer gjennom ulike tilpasningsstrategier. I tillegg omfatter dette alternativet bidrag til internasjonale investeringer i forskning på manipuleringer av naturen for å styre den globale temperaturen.)	◯
INGEN AV DE OVERNEVNTE (Jeg foretrekker en annen type klimapolitikk enn de som er nevnt her)	◯
INGEN KLIMAPOLITIKK I DET HELE TATT (Jeg foretrekker at andre samfunnsformål prioriteres)	◯

KLIMA OG MILJØ: HVA SYNES DU?

OM DINE PREFERANSER FOR KLIMAPOLITIKK (fortsetter)

30. Under følger noen påstander – indiker om du er enig eller uenig i hver av disse påstandene.

	Uenig	Delvis uenig	Nøytral	Delvis enig	Enig
Jeg er i mot at Norge tar på seg ansvar i globale saker	◯	◯	◯	◯	◯
Jeg har hatt en veldig bra dag i dag	◯	◯	◯	◯	◯
Jeg føler et personlig ansvar for effekten mine handlinger har på miljøet	◯	◯	◯	◯	◯
Jeg har full tillit til at våre folkevalgte gjør prioriteringer som er til det beste for felleskapet	◯	◯	◯	◯	◯
Om 20 år tror jeg at verdenssamfunnet har funnet en løsning på de fleste av dagens miljøproblemer	◯	◯	◯	◯	◯
Om 5 år er min personlige økonomi trolig dårligere enn den er i dag	◯	◯	◯	◯	◯
Jeg anser meg selv for å være et lykkelig menneske	◯	◯	◯	◯	◯

KLIMA OG MILJØ: HVA SYNES DU?

DEMOGRAFISKE SPØRSMÅL

I denne siste delen av undersøkelsen ønsker vi å vite mer om deg og din husstand.

Dette er for å klassifisere og sikre at utvalget i spørreundersøkelsen er representativt for den norske befolkning.

Vi minner om at du som deltaker i denne undersøkelsen er helt anonym og at alle dine svar er konfidensielle

KLIMA OG MILJØ: HVA SYNES DU?

DEMOGRAFISKE SPØRSMÅL

31. Er du mann eller kvinne?

◯ Mann

◯ Kvinne

KLIMA OG MILJØ: HVA SYNES DU?

DEMOGRAFISKE SPØRSMÅL (fortsetter)

32. Hva er din alder?

- ◯ Under 18 år
- ◯ 18 - 21 år
- ◯ 22 - 25 år
- ◯ 26 - 29 år
- ◯ 30 - 39 år
- ◯ 40 - 49 år
- ◯ 50 - 59 år
- ◯ 60 - 69 år
- ◯ 70 - 79 år
- ◯ Over 80 år

KLIMA OG MILJØ: HVA SYNES DU?

DEMOGRAFISKE SPØRSMÅL (fortsetter)

33. Hva er din sivilstatus?

- ◯ Enslig
- ◯ I parforhold
- ◯ Samboer
- ◯ Gift
- ◯ Enke/Enkemann

DEMOGRAFISKE SPØRSMÅL (fortsetter)

34. Hvor mange personer er det i ditt hushold inkludert deg selv?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ Mer enn 6

KLIMA OG MILJØ: HVA SYNES DU?

DEOMGRAFISKE SPØRSMÅL (fortsetter)

35. I hvilket fylke bor du?

36. Hva er ditt postnummer?

DEMOGRAFISKE SPØRSMÅL (fortsetter)

37. Hva er ditt høyeste fullførte utdanningsnivå?

- ◯ Grunnskolenivå
- ◯ Videregående nivå
- ◯ Fagbrev/Fagskole
- ◯ Universitets- og høgskolenivå, 1-3 år
- ◯ Universitets- og høgskolenivå, 3-5 år
- ◯ Universitets- og høgskolenivå, mer enn 5 år

DEMOGRAFISKE SPØRSMÅL (fortsetter)

38. Hvilken av de følgende kategoriene beskriver best det fagfeltet du er utdannet eller opplært i?

- ◯ Økonomi, administrasjon og ledelse
- ◯ Lærer, lektor og pedagogikk
- ◯ Jordbruk
- ◯ Språk og litteratur
- ◯ Mediefag og kommunikasjon
- ◯ Restaurant- og matfag
- ◯ Idrettsfag
- ◯ Historie, religion og kultur
- ◯ Håndverker (snekker, elektriker, rørlegger, maler osv.)
- ◯ Hotell og reiseliv
- ◯ Samfunnsfag og psykologi
- ◯ Estetiske fag (kunst- og musikkfag)
- ◯ Juridiske fag
- ◯ Medisin, helse- og sosialfag
- ◯ Realfag, ingeniør, arkitekt
- ◯ Fiskeri og oppdrett
- ◯ Annet (vennligst spesifiser)

DEMOGRAFISKE SPØRSMÅL (fortsetter)

39. Hvilke alternativer beskriver best din nåværende arbeidssituasjon? [Velg de som passer]

- [ ] Arbeider fulltid
- [ ] Arbeider deltid
- [ ] Ikke-lønnet/frivillig arbeid
- [ ] Ikke i arbeid på nåværende tidspunkt
- [ ] Student
- [ ] Pensjonert
- [ ] Hjemmeværende
- [ ] Svangerskapspermisjon (Midlertidig permisjon)
- [ ] Annet (vennligst spesifiser)

DEMOGRAFISKE SPØRSMÅL (fortsetter)

40. Hvilken av følgende kategorier beskriver best næringen eller sektoren du arbeider i?

- ◯ Olje- og gass
- ◯ Butikk, salg og servicenæring
- ◯ Bank og finans
- ◯ Bygg og anlegg
- ◯ Fornybar energi
- ◯ Offentlig forvaltning
- ◯ Annen industri
- ◯ Utdanning og forskning
- ◯ Helse og omsorg
- ◯ Fiske, havbruk og skogbruk
- ◯ Jordbruk
- ◯ IT, kommunikasjon og telekommunikasjon
- ◯ Annet (vennligst spesifiser)

KLIMA OG MILJØ: HVA SYNES DU?

DEMOGRAFISKE SPØRSMÅL (fortsetter)

41. Er du medlem av en miljøorganisasjon?

◯ Ja

◯ Nei

42. Hvis ja, hvilken?

DEMOGRAFISKE SPØRSMÅL (fortsetter)

43. Vennligst oppgi omtrentlig årlig brutto inntekt i din husstand. Det vil si all samlet inntekt i husstanden før skatt er trukket fra.

- ◯ Mindre enn 100 000 kroner
- ◯ 100 001 - 200 000 kroner
- ◯ 200 001 - 300 000 kroner
- ◯ 300 001 - 400 000 kroner
- ◯ 400 001 - 500 000 kroner
- ◯ 500 001 - 600 000 kroner
- ◯ 600 001 - 700 000 kroner
- ◯ 700 001 - 800 000 kroner
- ◯ 800 001 - 900 000 kroner
- ◯ 900 001 - 1 000 000 kroner
- ◯ 1 000 001 - 1 100 000 kroner
- ◯ 1 100 001 - 1 200 000 kroner
- ◯ 1 200 001 - 1 300 000 kroner
- ◯ 1 300 001 - 1 400 000 kroner
- ◯ 1 400 001 - 1 500 000 kroner
- ◯ 1 500 001 - 1 600 000 kroner
- ◯ 1 600 001 - 1 700 000 kroner
- ◯ 1 700 001 - 1 800 000 kroner
- ◯ 1 800 001 - 1 900 000 kroner
- ◯ 1 900 001 - 2 000 000 kroner
- ◯ Mer enn 2 000 000 kroner

DEMOGRAFISKE SPØRSMÅL (fortsetter)

44. Hvilket politisk parti ville du stemt på dersom du måtte stemt i dag?

- ◯ Arbeiderpartiet (Ap eller A)
- ◯ De Kristne
- ◯ Demokratene i Norge
- ◯ Det Liberale Folkepartiet
- ◯ Fremskrittspartiet (Frp)
- ◯ Høyre (H)
- ◯ Kristelig Folkeparti (KrF)
- ◯ Kristent Samlingsparti (KSP)
- ◯ Kystpartiet (KP)
- ◯ Miljøpartiet De Grønne
- ◯ Norges Kommunistiske Parti (NKP)
- ◯ Pensjonistpartiet (PP)
- ◯ Piratpartiet
- ◯ Rødt
- ◯ Samefolkets parti (Sámeálbmot Bellodat)
- ◯ Samfunnspartiet
- ◯ Senterpartiet (Sp)
- ◯ Sosialistisk Venstreparti (SV)
- ◯ Tverrpolitisk Folkevalgte
- ◯ Venstre (V)
- ◯ Vet ikke/Ikke politisk interessert
- ◯ Ønsker ikke å svare
- ◯ Annet

KLIMA OG MILJØ: HVA SYNES DU?

TAKK FOR DU DELTOK I DENNE UNDERSØKELSEN!

45. Hvis du har kommentarer til denne undersøkelsen er du velkommen til å benytte kommentarboksen under.

KLIMA OG MILJØ: HVA SYNES DU?

SurveyMonkey

1. Hvilke politiske saker er det viktigst at blir prioritert i offentlige, nasjonale budsjetter? [Velg opp til 4 saker som er viktige for deg og din husholdning]

	Svarprosent	Svartelling
Eldreomsorg	49,3%	579
Kriminalitet	28,4%	333
Klima	9,7%	114
Utdanning	34,7%	407
Landbruk	8,6%	101
Kollektivtransport	16,4%	192
Strømnett	4,3%	50
Veinett	34,8%	409
Fattigdom	18,3%	215
Likestilling	4,4%	52
Innvandring	15,7%	184
Kultur	6,4%	75
Forskning	13,9%	163
Familie	18,1%	213
Økonomi	20,9%	245
Bistand	2,4%	28
Helse	**58,2%**	**683**
Sysselsetting	12,8%	150
Fredsmekling	1,9%	22
Idrett	3,7%	43
Miljøvern	13,7%	161
Forsvaret	4,8%	56

Integrering		3,9%	46
Annet (vennligst spesifiser)		1,9%	22
		besvart spørsmål	**1 174**
		spørsmål som ble hoppet over	**1**

2. På en skala fra -5 (svært uviktig) til 5 (svært viktig), hvor viktig er miljø- og klimapolitikk fo

	-5	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	
	4,0% (47)	2,4% (28)	2,4% (28)	2,9% (34)	1,8% (21)	15,8% (185)	8,5% (99)	14,8% (173)	**20,6% (241)**	17,2% (201)	9 (

3. Hva er de viktigste miljø- og ressurspolitiske satsingsområdene slik du ser det? [Velg opptil 4 alternativer]

	Svarprosent	Svartelling
Redusere norsk utvinning av olje og gass	9,8%	112
Unngå naturinngrep som for eksempel høyspentmaster	13,8%	158
Beskytte truede plante- og dyrearter	27,7%	318
Utbygge mer fornybar energi som vindkraft og småskala vannkraft	**49,9%**	**572**
Bevare kulturminner	23,0%	264
Redusere lokal luftforurensning	26,9%	308
Forbedre håndtering av avfall fra industri og gruvedrift	32,8%	376
Øke vedlikehold av norske naturområder	20,7%	237
Redusere utslipp av klimagasser	42,4%	486
Verne Lofoten og Vesterålen	18,8%	215
Verne landets jordbruksarealer	27,7%	318
Øke Norges selvforsyning av mat	39,4%	451
Elektrifisere offshore installasjoner	6,4%	73
Utfase hvalfangst som en del av norsk havbruk	4,6%	53
Annet (vennligst spesifiser)	3,3%	38
	besvart spørsmål	**1 146**
	spørsmål som ble hoppet over	**29**

4. Hvilket av utsagnene nedenfor samsvarer best med ditt syn på klimaendringer?

	Svarprosent	Svartelling
Klimaendringer er ikke reelle	2,5%	29
Klimaendringer er reelle, men ikke menneskeskapt	11,4%	130
Klimaendringer er reelle og delvis menneskeskapt	**49,2%**	**562**
Klimaendringer er reelle og hovedsaklig menneskeskapt	30,4%	347
Vet ikke / usikker	6,5%	74
	besvart spørsmål	**1 142**
	spørsmål som ble hoppet over	**33**

5. Til hvilken grad er du enig eller uenig i følgende påstander om klimaendringer?

	Helt uenig	Delvis uenig	Nøytral	Delvis enig	Helt enig	Vurderingstelling
Klimaendringer er uunngåelig. Vi kan ikke gjøre noe for å stoppe dem	15,6% (170)	**32,7% (357)**	20,6% (225)	21,8% (238)	9,3% (101)	1 091
Klimaendringer vil ikke påvirke meg og min familie	18,4% (199)	**29,9% (324)**	29,1% (315)	16,5% (179)	6,1% (66)	1 083
Dersom ingenting gjøres, vil klimaendringer få negative konsekvenser for fremtidige generasjoner	4,8% (52)	9,6% (105)	18,5% (202)	33,1% (361)	**33,9% (369)**	1 089
Klimaendringer utgjør ingen trussel for Norge	24,2% (263)	**36,1% (392)**	22,4% (244)	12,1% (132)	5,2% (56)	1 087
Klimaendringer utgjør en stor trussel for verden	5,2% (56)	9,6% (104)	20,9% (227)	**38,5% (418)**	25,9% (281)	1 086
Reduksjon av klimagassutslipp i Norge kan påvirke globale klimaendringer	11,5% (126)	15,3% (167)	28,3% (309)	**32,2% (352)**	12,6% (138)	1 092
Økt frekvens av ekstremvær er ikke relatert til klimaendringer	18,4% (200)	**34,5% (375)**	28,6% (311)	14,2% (154)	4,3% (47)	1 087
Mat- og vannmangel i u-land er hovedsakelig en følge av klimaendringer	12,8% (139)	27,6% (300)	**34,4% (373)**	21,0% (228)	4,1% (45)	1 085
Utvikling innen genmanipulering og bioteknologi vil gjøre fremtidig jordbruk mindre sårbart for klimaendringer	13,3% (145)	16,1% (176)	**47,4% (517)**	18,9% (206)	4,3% (47)	1 091
Endringer i ismassen i arktiske og antarktiske strøk er en del av et naturlig forløp	9,1% (99)	23,3% (254)	24,7% (269)	**30,2% (330)**	12,7% (139)	1 091
Klimaendringer vil ha negative effekter på biologisk mangfold	4,4% (48)	8,6% (94)	**33,3% (363)**	33,2% (362)	20,4% (222)	1 089
Global folkehelse vil forverres de neste 50 årene som en følge av klimaendringer	6,5% (71)	14,6% (158)	**38,3% (415)**	28,3% (307)	12,3% (133)	1 084
Media fremlegger et balansert og troverdig bilde av klimaproblemet	16,5% (180)	32,6% (355)	**34,6% (376)**	13,6% (148)	2,7% (29)	1 088

Jeg har stor tro på internasjonal klimaforskning	8,9% (97)	12,8% (139)	**34,4% (374)**	31,5% (342)	12,4% (135)	1 087
					besvart spørsmål	**1 093**
					spørsmål som ble hoppet over	**82**

6. Kryss av for alle svaralternativ nedenfor som du har hørt om eller kjenner til.

	Svarprosent	Svartelling
Kyoto 2-avtalen	**68,9%**	**748**
Togradersmålet	8,9%	97
Kvotehandel	59,3%	644
An Inconvenient Truth	9,5%	103
IPCC	6,9%	75
FNs Klimapanel	61,2%	665
Bjerknessenteret	9,3%	101
Geoengineering	10,7%	116
Stortingets Klimaforlik	39,1%	425
Klimakur 2020	2,2%	24
Klimameldingen 2012	29,7%	323
Cicero	19,9%	216
Albedo	1,1%	12
El Niño	42,2%	458
Jørgen Randers	8,7%	95
Klif	7,2%	78
The Great Global Warming Swindle	8,2%	89
Klimarealistene	6,1%	66
Klimakonvensjonen	31,1%	338
Har IKKE hørt om noen av disse	12,2%	132
	besvart spørsmål	**1 086**

spørsmål som ble hoppet over		**89**

7. I hvilken grad vil du si at du har kunnskap om dette temaet?

	Svarprosent	Svartelling
Svært liten grad	19,5%	207
Liten grad	28,7%	304
Middels grad	**41,6%**	**441**
Stor grad	9,0%	95
Svært stor grad	1,3%	14
	besvart spørsmål	**1 061**
	spørsmål som ble hoppet over	**114**

8. I hvilken grad vil du si at du har kunnskap om norsk klimapolitikk?

	Svarprosent	Svartelling
Svært liten grad	16,4%	173
Liten grad	31,6%	333
Middels grad	**42,8%**	**452**
Stor grad	7,9%	83
Svært stor grad	1,3%	14
	besvart spørsmål	**1 055**
	spørsmål som ble hoppet over	**120**

9. Dersom det ble avholdt en folkeavstemning om etablering av et slikt nasjonalt klimafond, ville du da ha stemt for eller i mot?

		Svarprosent	Svartelling
Stemt for		31,4%	88
Stemt mot		**35,0%**	**98**
Vet ikke / usikker		33,6%	94
		besvart spørsmål	**280**
		spørsmål som ble hoppet over	**895**

10. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

	Svarprosent	Svartelling
Kr 0	**39,8%**	**111**
Kr 200	11,1%	31
Kr 400	4,3%	12
Kr 600	4,3%	12
Kr 800	2,2%	6
Kr 1000	9,0%	25
Kr 1200	3,2%	9
Kr 1400	0,0%	0
Kr 1600	0,4%	1
Kr 1800	0,0%	0
Kr 2000	6,5%	18
Kr 2250	0,7%	2
Kr 2500	2,2%	6
Kr 2750	1,1%	3
Kr 3000	2,2%	6
Kr 3250	0,4%	1
Kr 3500	0,4%	1
Kr 3750	0,0%	0
Kr 4000	2,5%	7
Kr 4500	0,7%	2
Kr 5000	3,2%	9
Kr 5500	0,0%	0
Kr 6000	1,1%	3
Kr 6500	0,4%	1
Kr 7000	0,0%	0

Kr 7500		0,7%	2
Kr 8000		0,4%	1
Kr 9000		0,7%	2
Kr 10000		0,7%	2
Mer enn Kr 10000		2,2%	6
		besvart spørsmål	**279**
		spørsmål som ble hoppet over	**896**

11. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Min husstand er villig til å betale for alle gode miljøformål.	19,0%	32
Jeg er opptatt av å bevare naturen uavhengig av min egen bruk	35,1%	59
Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål	14,3%	24
Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett	9,5%	16
For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer	**41,7%**	**70**
Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn	10,7%	18
Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra	17,3%	29
Jeg føler det forventes av meg slik denne undersøkelsen er konstruert	10,1%	17
For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte	30,4%	51
Annet (vennligst spesifiser)	4,2%	7
	besvart spørsmål	**168**
	spørsmål som ble hoppet over	**1 007**

12. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg føler ikke det er riktig å veie miljøet i penger	5,4%	6
Skattenivået er allerede høyt nok	**64,0%**	**71**
Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem	4,5%	5
Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer	18,9%	21
Min husstands inntekt er for lav	11,7%	13
Myndighetene bør betale for en slik politikk, ikke forbrukerne	28,8%	32
Bedrifter bør betale for en slik politikk, ikke forbrukerne	7,2%	8
Jeg stoler ikke på at pengene vil gå til det riktige formålet	50,5%	56
Jeg er skeptisk til et slikt fond	29,7%	33
Det er de største utslippsnasjonene som bør betale, ikke Norge	19,8%	22
Jeg foretrekker en annen type klimapolitikk	13,5%	15
Annet (vennligst spesifiser)	3,6%	4
	besvart spørsmål	**111**
	spørsmål som ble hoppet over	**1 064**

13. Dersom det ble avholdt en folkeavstemning om etablering av et slikt nasjonalt klimafond, ville du da ha stemt for eller i mot?

		Svarprosent	Svartelling
Stemt for		34,5%	50
Stemt mot		**37,2%**	**54**
Vet ikke / usikker		28,3%	41
		besvart spørsmål	**145**
		spørsmål som ble hoppet over	**1 030**

14. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

	Svarprosent	Svartelling
Kr 0	**39,6%**	**57**
Kr 200	9,0%	13
Kr 400	5,6%	8
Kr 600	1,4%	2
Kr 800	2,8%	4
Kr 1000	11,1%	16
Kr 1200	2,8%	4
Kr 1400	0,7%	1
Kr 1600	0,0%	0
Kr 1800	1,4%	2
Kr 2000	8,3%	12
Kr 2250	0,0%	0
Kr 2500	2,8%	4
Kr 2750	0,0%	0
Kr 3000	4,2%	6
Kr 3250	0,7%	1
Kr 3500	0,0%	0
Kr 3750	0,0%	0
Kr 4000	1,4%	2
Kr 4500	0,0%	0
Kr 5000	4,2%	6
Kr 5500	0,0%	0
Kr 6000	2,8%	4
Kr 6500	0,0%	0
Kr 7000	0,0%	0

144

Kr 7500	0,7%	1
Kr 8000	0,0%	0
Kr 9000	0,0%	0
Kr 10000	0,0%	0
Mer enn Kr 10000	0,7%	1
	besvart spørsmål	**144**
	spørsmål som ble hoppet over	**1 031**

15. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg er opptatt av å bevare naturen uavhengig av min egen bruk	43,7%	38
Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål	18,4%	16
Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett	9,2%	8
For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer	**51,7%**	**45**
Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn	11,5%	10
Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra	25,3%	22
Jeg føler det forventes av meg slik denne undersøkelsen er konstruert	10,3%	9
For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte	31,0%	27
Annet (vennligst spesifiser)	5,7%	5
	besvart spørsmål	**87**
	spørsmål som ble hoppet over	**1 088**

16. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg føler ikke det er riktig å veie miljøet i penger	8,8%	5
Skattenivået er allerede høyt nok	**45,6%**	**26**
Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem	5,3%	3
Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer	12,3%	7
Min husstands inntekt er for lav	19,3%	11
Myndighetene bør betale for en slik politikk, ikke forbrukerne	24,6%	14
Bedrifter bør betale for en slik politikk, ikke forbrukerne	17,5%	10
Jeg stoler ikke på at pengene vil gå til det riktige formålet	29,8%	17
Jeg er skeptisk til et slikt fond	43,9%	25
Det er de største utslippsnasjonene som bør betale, ikke Norge	17,5%	10
Jeg foretrekker en annen type klimapolitikk	8,8%	5
Annet (vennligst spesifiser)	7,0%	4
	besvart spørsmål	**57**
	spørsmål som ble hoppet over	**1 118**

17. Se for deg at det internasjonale samfunnet ble enig om å etablere et globalt klimafond og at Norge skulle ta stilling til sin deltakelse gjennom en nasjonal folkeavstemning. Ville du da stemt for eller i mot?

		Svarprosent	Svartelling
Stemt for		**48,2%**	**119**
Stemt mot		22,3%	55
Usikker / vet ikke		29,6%	73
		besvart spørsmål	**247**
		spørsmål som ble hoppet over	**928**

18. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

	Svarprosent	Svartelling
Kr 0	**33,2%**	**82**
Kr 200	9,3%	23
Kr 400	3,2%	8
Kr 600	3,2%	8
Kr 800	0,4%	1
Kr 1000	10,9%	27
Kr 1200	5,7%	14
Kr 1400	1,2%	3
Kr 1600	0,8%	2
Kr 1800	0,8%	2
Kr 2000	8,5%	21
Kr 2250	0,4%	1
Kr 2500	3,6%	9
Kr 2750	0,0%	0
Kr 3000	4,9%	12
Kr 3250	0,4%	1
Kr 3500	0,8%	2
Kr 3750	0,0%	0
Kr 4000	2,4%	6
Kr 4500	1,6%	4
Kr 5000	2,8%	7
Kr 5500	0,0%	0
Kr 6000	2,4%	6
Kr 6500	0,0%	0
Kr 7000	0,0%	0

Kr 7500	0,4%	1
Kr 8000	0,0%	0
Kr 9000	0,0%	0
Kr 10000	1,2%	3
Mer enn Kr 10000	1,6%	4
	besvart spørsmål	**247**
	spørsmål som ble hoppet over	**928**

19. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg er opptatt av å bevare naturen uavhengig av min egen bruk	38,0%	63
Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål	18,1%	30
Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett	8,4%	14
For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer	**47,0%**	**78**
Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn	9,6%	16
Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra	13,9%	23
Jeg føler det forventes av meg slik denne undersøkelsen er konstruert	11,4%	19
For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte	37,3%	62
Annet (vennligst spesifiser)	5,4%	9
	besvart spørsmål	**166**
	spørsmål som ble hoppet over	**1 009**

20. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg føler ikke det er riktig å veie miljøet i penger	9,8%	8
Skattenivået er allerede høyt nok	51,2%	42
Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem	7,3%	6
Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer	23,2%	19
Min husstands inntekt er for lav	19,5%	16
Myndighetene bør betale for en slik politikk, ikke forbrukerne	24,4%	20
Bedrifter bør betale for en slik politikk, ikke forbrukerne	13,4%	11
Jeg stoler ikke på at pengene vil gå til det riktige formålet	**54,9%**	**45**
Jeg er skeptisk til et slikt fond	25,6%	21
Det er de største utslippsnasjonene som bør betale, ikke Norge	11,0%	9
Jeg foretrekker en annen type klimapolitikk	8,5%	7
Annet (vennligst spesifiser)	6,1%	5
	besvart spørsmål	**82**
	spørsmål som ble hoppet over	**1 093**

21. Dersom det ble avholdt en folkeavstemning om etablering av et slikt klimatilpasningsfond, ville du da ha stemt for eller i mot?

	Svarprosent	Svartelling
Stemt for	24,4%	65
Stemt mot	33,5%	89
Vet ikke / usikker	**42,1%**	**112**
	besvart spørsmål	**266**
	spørsmål som ble hoppet over	**909**

22. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

	Svarprosent	Svartelling
Kr 0	**35,2%**	**93**
Kr 200	9,8%	26
Kr 400	4,9%	13
Kr 600	3,8%	10
Kr 800	1,1%	3
Kr 1000	15,5%	41
Kr 1200	2,7%	7
Kr 1400	0,8%	2
Kr 1600	0,4%	1
Kr 1800	0,4%	1
Kr 2000	7,6%	20
Kr 2250	0,8%	2
Kr 2500	2,3%	6
Kr 2750	0,4%	1
Kr 3000	3,8%	10
Kr 3250	0,8%	2
Kr 3500	0,4%	1
Kr 3750	0,4%	1
Kr 4000	1,5%	4
Kr 4500	0,4%	1
Kr 5000	2,7%	7
Kr 5500	0,0%	0
Kr 6000	0,8%	2
Kr 6500	0,0%	0
Kr 7000	0,0%	0

Kr 7500		0,0%	0
Kr 8000		0,4%	1
Kr 9000		0,4%	1
Kr 10000		1,9%	5
Mer enn Kr 10000		1,1%	3
		besvart spørsmål	**264**
		spørsmål som ble hoppet over	**911**

23. Hva er de viktigste grunnene til at din husstand er villig til å betale for en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg er opptatt av å bevare naturen uavhengig av min egen bruk	43,9%	75
Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål	17,5%	30
Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett	9,9%	17
For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer	**44,4%**	**76**
Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn	13,5%	23
Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra	24,6%	42
Jeg føler det forventes av meg slik denne undersøkelsen er konstruert	14,0%	24
For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte	26,9%	46
Annet (vennligst spesifiser)	5,3%	9
	besvart spørsmål	**171**
	spørsmål som ble hoppet over	**1 004**

24. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg føler ikke det er riktig å veie miljøet i penger	6,5%	6
Skattenivået er allerede høyt nok	**49,5%**	**46**
Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem	8,6%	8
Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer	18,3%	17
Min husstands inntekt er for lav	30,1%	28
Myndighetene bør betale for en slik politikk, ikke forbrukerne	23,7%	22
Bedrifter bør betale for en slik politikk, ikke forbrukerne	7,5%	7
Jeg stoler ikke på at pengene vil gå til det riktige formålet	40,9%	38
Jeg er skeptisk til et slikt fond	22,6%	21
Det er de største utslippsnasjonene som bør betale, ikke Norge	17,2%	16
Jeg foretrekker en annen type klimapolitikk	17,2%	16
Annet (vennligst spesifiser)	8,6%	8
	besvart spørsmål	**93**
	spørsmål som ble hoppet over	**1 082**

25. Dersom det ble avholdt en folkeavstemning om etablering av et slikt klimatilpasningsfond ville du da ha stemt for eller i mot?

		Svarprosent	Svartelling
Stemt for		19,1%	22
Stemt mot		31,3%	36
Usikker / vet ikke		**49,6%**	**57**
		besvart spørsmål	**115**
		spørsmål som ble hoppet over	**1 060**

26. Min husholdnings maksimum betalingsvillighet PER ÅR i de NESTE FIRE ÅRENE er:

	Svarprosent	Svartelling
Kr 0	**30,7%**	**35**
Kr 200	12,3%	14
Kr 400	3,5%	4
Kr 600	2,6%	3
Kr 800	1,8%	2
Kr 1000	12,3%	14
Kr 1200	2,6%	3
Kr 1400	0,9%	1
Kr 1600	1,8%	2
Kr 1800	0,0%	0
Kr 2000	7,0%	8
Kr 2250	0,0%	0
Kr 2500	3,5%	4
Kr 2750	0,9%	1
Kr 3000	4,4%	5
Kr 3250	0,0%	0
Kr 3500	0,9%	1
Kr 3750	0,0%	0
Kr 4000	0,9%	1
Kr 4500	0,9%	1
Kr 5000	2,6%	3
Kr 5500	0,0%	0
Kr 6000	4,4%	5
Kr 6500	0,0%	0
Kr 7000	0,0%	0

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Kr 7500		0,9%	1
Kr 8000		1,8%	2
Kr 9000		0,9%	1
Kr 10000		1,8%	2
Mer enn Kr 10000		0,9%	1
		besvart spørsmål	**114**
		spørsmål som ble hoppet over	**1 061**

27. Hva er de viktigste grunnene til at din husstand er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg er opptatt av å bevare naturen uavhengig av min egen bruk	**45,0%**	**36**
Jeg er villig til å betale fordi beløpet er på størrelse med det min husstand pleier å gi til veldedige formål	27,5%	22
Jeg er villig til å betale beløpet fordi jeg tror ikke denne skatten blir krevd inn uansett	10,0%	8
For min husstand er det verdt å betale denne prisen for å motvirke konsekvensene av klimaendringer	**45,0%**	**36**
Jeg bare krysset av et tilfeldig beløp, uten noen spesiell grunn	8,8%	7
Jeg føler en forpliktelse til å betale fordi alle andre husstander også skal bidra	20,0%	16
Jeg føler det forventes av meg slik denne undersøkelsen er konstruert	16,3%	13
For meg og min husholdning er den beskrevne klimapolitikken verdt det beløpet jeg valgte	32,5%	26
Annet (vennligst spesifiser)	2,5%	2
	besvart spørsmål	**80**
	spørsmål som ble hoppet over	**1 095**

28. Hva er de viktigste grunnene til at din husstand ikke er villig til å betale for innføring av en slik klimapolitikk? [Velg opptil 3 alternativer]

	Svarprosent	Svartelling
Jeg føler ikke det er riktig å veie miljøet i penger	8,6%	3
Skattenivået er allerede høyt nok	45,7%	16
Effektene av klimaendringer er for små til at det er verdt å betale for å unngå dem	5,7%	2
Disse tiltakene vil ikke bidra i tilstrekkelig grad i kampen mot klimaendringer	20,0%	7
Min husstands inntekt er for lav	25,7%	9
Myndighetene bør betale for en slik politikk, ikke forbrukerne	20,0%	7
Bedrifter bør betale for en slik politikk, ikke forbrukerne	5,7%	2
Jeg stoler ikke på at pengene vil gå til det riktige formålet	**54,3%**	**19**
Jeg er skeptisk til et slikt fond	22,9%	8
Det er de største utslippsnasjonene som bør betale, ikke Norge	22,9%	8
Jeg foretrekker en annen type klimapolitikk	11,4%	4
Annet (vennligst spesifiser)	11,4%	4
	besvart spørsmål	**35**
	spørsmål som ble hoppet over	**1 140**

29. Dersom du fritt kunne velge hvilken type klimapolitikk Norge skulle føre, hvilken av alternativene under foretrekker du?

	Ditt valg	Vurderingstelling
NORSK KLIMAPOLITIKK (En selvstendig, utslippsreduserende klimapolitikk for Norge hvor minst 2/3 av reduksjonen skal skje innenlands, og opptil 1/3 gjennom kvotehandel og investeringer i tiltak og klimavennlige teknologier utenlands)	**100,0% (150)**	150
NORSK KLIMAPOLITIKK BASERT PÅ UTENLANDSINVESTERINGER (En selvstendig, utslippsreduserende klimapolitikk for Norge hvor reduksjonen utelukkende skjer gjennom investeringer i tiltak og klimavennlige teknologier utenlands)	**100,0% (43)**	43
GLOBAL KLIMAPOLITIKK (Deltakelse i en internasjonal, utslippsreduserende klimapolitikk hvor reduksjonen skjer gjennom implementering av klimavennlige teknologier og tiltak bindende for alle medlemsland i FN, inkludert Norge)	**100,0% (463)**	463
NORSK KLIMATILPASNINGSPOLITIKK (En selvstendig klimapolitikk som inkluderer tiltak for å redusere Norges eksponering og sårbarhet overfor potensielle negative effekter av klimaendringer gjennom ulike tilpasningsstrategier)	**100,0% (83)**	83
NORSK KLIMATILPASNINGSPOLITIKK MED GEOENGINEERING (En selvstendig klimapolitikk som inkluderer tiltak for å redusere Norges eksponering og sårbarhet overfor potensielle negative effekter av klimaendringer gjennom ulike tilpasningsstrategier. I tillegg omfatter dette alternativet bidrag til internasjonale investeringer i	**100,0% (54)**	54

forskning på manipuleringer av naturen for å styre den globale temperaturen.)		
INGEN AV DE OVERNEVNTE (Jeg foretrekker en annen type klimapolitikk enn de som er nevnt her)	**100,0% (72)**	72
INGEN KLIMAPOLITIKK I DET HELE TATT (Jeg foretrekker at andre samfunnsformål prioriteres)	**100,0% (172)**	172
	besvart spørsmål	**1 037**
	spørsmål som ble hoppet over	**138**

30. Under følger noen påstander – indiker om du er enig eller uenig i hver av disse påstandene.

	Uenig	Delvis uenig	Nøytral	Delvis enig	Enig	Vurderingstelling
Om 20 år tror jeg at verdenssamfunnet har funnet en løsning på de fleste av dagens miljøproblemer	14,1% (145)	28,7% (296)	**29,3% (302)**	22,4% (231)	5,6% (58)	1 032
Om 5 år er min personlige økonomi trolig dårligere enn den er i dag	24,7% (255)	21,0% (216)	**28,5% (294)**	16,8% (173)	9,0% (93)	1 031
Jeg har full tillit til at våre folkevalgte gjør prioriteringer som er til det beste for felleskapet	22,4% (231)	**28,9% (298)**	24,8% (256)	17,8% (184)	6,1% (63)	1 032
Jeg har hatt en veldig bra dag i dag	3,6% (37)	7,8% (80)	23,4% (241)	29,9% (308)	**35,3% (363)**	1 029
Jeg anser meg selv for å være et lykkelig menneske	3,4% (35)	6,9% (71)	21,6% (222)	**36,1% (370)**	32,0% (328)	1 026
Jeg føler et personlig ansvar for effekten mine handlinger har på miljøet	8,3% (86)	9,9% (102)	25,8% (267)	**35,9% (371)**	20,0% (207)	1 033
Jeg er i mot at Norge tar på seg ansvar i globale saker	25,9% (268)	23,9% (247)	**27,6% (285)**	13,4% (138)	9,2% (95)	1 033
					besvart spørsmål	**1 035**
					spørsmål som ble hoppet over	**140**

31. Er du mann eller kvinne?

	Svarprosent	Svartelling
Mann	48,7%	504
Kvinne	**51,3%**	**530**
	besvart spørsmål	**1 034**
	spørsmål som ble hoppet over	**141**

32. Hva er din alder?

	Svarprosent	Svartelling
Under 18 år	0,6%	6
18 - 21 år	7,0%	72
22 - 25 år	6,6%	68
26 - 29 år	7,2%	74
30 - 39 år	13,4%	139
40 - 49 år	16,0%	165
50 - 59 år	19,0%	196
60 - 69 år	**22,8%**	**236**
70 - 79 år	7,1%	73
Over 80 år	0,5%	5
	besvart spørsmål	**1 034**
	spørsmål som ble hoppet over	**141**

33. Hva er din sivilstatus?

	Svarprosent	Svartelling
Enslig	31,9%	330
I parforhold	7,6%	79
Samboer	17,7%	183
Gift	**39,5%**	**408**
Enke/Enkemann	3,3%	34
	besvart spørsmål	**1 034**
	spørsmål som ble hoppet over	**141**

34. Hvor mange personer er det i ditt hushold inkludert deg selv?

	Svarprosent	Svartelling
1	25,0%	259
2	**43,8%**	**453**
3	13,4%	139
4	11,8%	122
5	4,0%	41
6	1,4%	14
Mer enn 6	0,6%	6
	besvart spørsmål	**1 034**
	spørsmål som ble hoppet over	**141**

35. I hvilket fylke bor du?

	Svarprosent	Svartelling
Akershus	10,0%	103
Aust-Agder	2,3%	24
Buskerud	4,4%	45
Finnmark	1,4%	14
Hedmark	3,8%	39
Hordaland	10,9%	113
Møre og Romsdal	6,6%	68
Nord-Trøndelag	2,7%	28
Nordland	5,3%	55
Oppland	4,2%	43
Oslo	**12,9%**	**133**
Rogaland	6,2%	64
Sogn og Fjordane	2,2%	23
Sør-Trøndelag	7,0%	72
Telemark	3,0%	31
Troms	3,2%	33
Vest-Agder	2,9%	30
Vestfold	5,3%	55
Østfold	5,9%	61
	besvart spørsmål	**1 034**
	spørsmål som ble hoppet over	**141**

36. Hva er ditt postnummer?

	Svartelling
	1 020
besvart spørsmål	**1 020**
spørsmål som ble hoppet over	**155**

37. Hva er ditt høyeste fullførte utdanningsnivå?

	Svarprosent	Svartelling
Grunnskolenivå	8,5%	88
Videregående nivå	**27,1%**	**280**
Fagbrev/Fagskole	16,2%	168
Universitets- og høgskolenivå, 1-3 år	22,0%	227
Universitets- og høgskolenivå, 3-5 år	16,7%	173
Universitets- og høgskolenivå, mer enn 5 år	9,5%	98
besvart spørsmål		**1 034**
spørsmål som ble hoppet over		**141**

38. Hvilken av de følgende kategoriene beskriver best det fagfeltet du er utdannet eller opplært i?

	Svarprosent	Svartelling
Medisin, helse- og sosialfag	14,8%	153
Realfag, ingeniør, arkitekt	9,2%	95
Historie, religion og kultur	1,3%	13
Hotell og reiseliv	2,1%	22
Lærer, lektor og pedagogikk	9,1%	94
Økonomi, administrasjon og ledelse	**17,5%**	**181**
Mediefag og kommunikasjon	3,6%	37
Språk og litteratur	2,6%	27
Estetiske fag (kunst- og musikkfag)	2,6%	27
Idrettsfag	1,0%	10
Samfunnsfag og psykologi	2,5%	26
Juridiske fag	1,8%	19
Håndverker (snekker, elektriker, rørlegger, maler osv.)	10,1%	104
Restaurant- og matfag	3,0%	31
Jordbruk	2,0%	21
Fiskeri og oppdrett	0,5%	5
Annet (vennligst spesifiser)	16,3%	169
	besvart spørsmål	**1 034**
	spørsmål som ble hoppet over	**141**

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39. Hvilke alternativer beskriver best din nåværende arbeidssituasjon? [Velg de som passer]

		Svarprosent	Svartelling
Arbeider fulltid		**37,5%**	**388**
Arbeider deltid		14,2%	147
Ikke-lønnet/frivillig arbeid		2,5%	26
Ikke i arbeid på nåværende tidspunkt		8,6%	89
Student		10,5%	109
Pensjonert		22,3%	231
Hjemmeværende		2,9%	30
Svangerskapspermisjon (Midlertidig permisjon)		1,5%	15
Annet (vennligst spesifiser)		7,5%	78
		besvart spørsmål	**1 034**
		spørsmål som ble hoppet over	**141**

40. Hvilken av følgende kategorier beskriver best næringen eller sektoren du arbeider i?

	Svarprosent	Svartelling
Fornybar energi	0,6%	4
Olje- og gass	2,2%	14
Helse og omsorg	16,9%	108
Bank og finans	3,3%	21
Utdanning og forskning	11,6%	74
Offentlig forvaltning	8,0%	51
Bygg og anlegg	4,9%	31
Annen industri	6,4%	41
Jordbruk	1,9%	12
Fiske, havbruk og skogbruk	1,1%	7
Butikk, salg og servicenæring	13,1%	84
IT, kommunikasjon og telekommunikasjon	6,6%	42
Annet (vennligst spesifiser)	**23,5%**	**150**
	besvart spørsmål	**639**
	spørsmål som ble hoppet over	**536**

41. Er du medlem av en miljøorganisasjon?

	Svarprosent	Svartelling
Ja	4,1%	42
Nei	**95,9%**	**992**
	besvart spørsmål	**1 034**
	spørsmål som ble hoppet over	**141**

42. Hvis ja, hvilken?

	Svartelling
	49
besvart spørsmål	**49**
spørsmål som ble hoppet over	**1 126**

43. Vennligst oppgi omtrentlig årlig brutto inntekt i din husstand. Det vil si all samlet inntekt i husstanden før skatt er trukket fra.

	Svarprosent	Svartelling
Mindre enn 100 000 kroner	3,8%	39
100 001 - 200 000 kroner	8,2%	84
200 001 - 300 000 kroner	9,9%	102
300 001 - 400 000 kroner	11,1%	114
400 001 - 500 000 kroner	**15,4%**	**159**
500 001 - 600 000 kroner	10,4%	107
600 001 - 700 000 kroner	10,4%	107
700 001 - 800 000 kroner	9,4%	97
800 001 - 900 000 kroner	6,9%	71
900 001 - 1 000 000 kroner	4,8%	49
1 000 001 - 1 100 000 kroner	3,5%	36
1 100 001 - 1 200 000 kroner	2,2%	23
1 200 001 - 1 300 000 kroner	1,2%	12
1 300 001 - 1 400 000 kroner	0,7%	7
1 400 001 - 1 500 000 kroner	0,4%	4
1 500 001 - 1 600 000 kroner	0,5%	5
1 600 001 - 1 700 000 kroner	0,1%	1
1 700 001 - 1 800 000 kroner	0,1%	1

1 800 001 - 1 900 000 kroner	0,1%	1
1 900 001 - 2 000 000 kroner	0,1%	1
Mer enn 2 000 000 kroner	1,0%	10
	besvart spørsmål	**1 030**
	spørsmål som ble hoppet over	**145**

44. Hvilket politisk parti ville du stemt på dersom du måtte stemt i dag?

	Svarprosent	**Svartelling**
Arbeiderpartiet (Ap eller A)	18,6%	192
De Kristne	0,6%	6
Demokratene i Norge	0,2%	2
Det Liberale Folkepartiet	0,7%	7
Fremskrittspartiet (Frp)	16,1%	166
Høyre (H)	**22,1%**	**228**
Kristelig Folkeparti (KrF)	3,1%	32
Kristent Samlingsparti (KSP)	0,1%	1
Kystpartiet (KP)	0,2%	2
Miljøpartiet De Grønne	1,7%	18
Norges Kommunistiske Parti (NKP)	0,3%	3
Pensjonistpartiet (PP)	1,1%	11
Piratpartiet	1,1%	11
Rødt	1,7%	18
Samefolkets parti (Sámeálbmot Bellodat)	0,0%	0
Samfunnspartiet	0,1%	1
Senterpartiet (Sp)	2,9%	30
Sosialistisk Venstreparti (SV)	4,6%	47
Tverrpolitisk Folkevalgte	0,0%	0

Venstre (V)	3,9%	40
Vet ikke/Ikke politisk interessert	11,3%	116
Ønsker ikke å svare	8,7%	90
Annet	0,9%	9
besvart spørsmål		**1 030**
spørsmål som ble hoppet over		**145**

45. Hvis du har kommentarer til denne undersøkelsen er du velkommen til å benytte kommentarboksen under.

Svartelling
115
besvart spørsmål **115**
spørsmål som ble hoppet over **1 060**