

# Can framing change individual attitudes towards immigration?

by

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## Preface

This thesis finalizes my master's degree in Economics at The University of Bergen. I thank my supervisor, Sigve Tjøtta, who introduced me to the field of behavioral economics, and guided me in my work towards pursuing an experimental master's thesis. It was in your lectures that I first encountered prospect theory and the power of framing, providing the foundation for my interest in the field.

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## Abstract

Does framing change individual attitudes towards immigration? This thesis analyzes the effect of providing information about the unemployment- and employment rate of immigrants in Norway, as well as information about the impact the rates may have on the Norwegian welfare state. I expose some treatment groups to statistics of the rates, and others to information about how the rates may affect the Norwegian welfare state. I conduct a randomized survey experiment with more than 1,000 respondents to investigate whether framing of the behavior (unemployed or employed) and/or the impact of this behavior (cost or benefit) changes *views* and *attitudes* towards immigration policy. These views and attitudes may reflect underlying *beliefs* and *preferences*, which again may be situation-dependent. The paper finds that the respondents internalize the framing, and that information about the employment rate of immigrants in Norway (60 percent) causes individuals to rate their preferences for immigration policy more strictly. This suggests that people react negatively to a seemingly low employment rate of immigrants. The results indicate that the experimental design activates certain beliefs and preferences for immigration, and that framing causes a short-term change in preferences for immigration policy. Since individual preferences are a determinant of policy outcome, and immigration policy is an important domain for political parties, my results implicate that providing negative information about the behavior of immigration right before an election, may affect the results of the election. More generally, various types of information may influence how people perceive immigration and are accordingly important for policy outcomes and integration.

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# Chapter 1: Introduction

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The international refugee crises has put pressure on the immigration policies of western European countries, spurring contested public debates that probably no, or few other, aspects of globalization has done before. At the same time, political parties and candidates who support restrictive immigration policies have gained widespread support, such as Front National in France, Fremskrittspartiet in Norway, and Donald Trump in The United States.

During the latter part of 2015, Norway and many other western European countries experienced a heavy and continued influx of asylum seekers and refugees. Compared to other OECD countries, Norway had one of the highest immigration rates per capita, and in 2015, the applications for asylum were higher than ever before (NOU, 2017, p. 39). In the same year, more than sixty percent of Norwegians reported that they viewed immigration as one of the three main challenges Norway faces, in comparison to thirty-eight percent the year before (TNS Gallup, 2016).

In light of this, it is necessary to understand the way people shape their attitudes towards immigration, as well as how different information affects attitudes. In other words, what determines individual preferences for immigration policy, and does different types of information *affect* these preferences? Individual preferences represent a main determinant of policy outcome (Rodrik, 1995), and it is therefore important to understand the factors that decide these preferences, and how they are affected. Furthermore, preferences for immigration policies are based on beliefs about immigration, and scholars have found that these beliefs tend to be biased (Sides and Citrin, 2007a, 2007b; Grigorieff et al., 2016). For instance, people consistently over-estimate the number of immigrants residing in their country (Grigorieff et al., 2016). Thus, it is interesting to test whether accurate information about immigration can affect preferences, and which type of information changes people's attitudes. Does positive or negative *framing* (see Levin et al., 1998 for a review) of different types of information about immigration *affect* attitudes towards immigration?

This thesis answers this question by experimentally testing whether providing positive and negative framing about immigration affects individual preferences for immigration policies. I conducted a randomized web-survey experiment in the Norwegian Citizen Panel, where I exposed six treatment

groups to positive and negative framing. Of the three positive frames, (1) provides information that the *employment rate* of immigrants is 60 percent, (2) emphasizes the *economic benefits* of immigration and (3) is a combination. Of the three negative frames, (1) provides information that the *unemployment rate* of immigrants is 7 percent, (2) emphasizes the *economic costs* of immigration, and (3) is a combination. Initially, I intended the information about the employment rate to be a *positive frame*. However, people seem to react *negatively* to this information. This suggests that they interpret the information as a 40 percent unemployment rate, rather than a 60 percent employment rate. The “positive” frame of the employment rate might therefore be an *even more* negative frame than the negative framing of the unemployment rate. I discuss this issue further in chapter 3.

Moreover, the experimental design distinguishes between “*behavioral information*” (employed or unemployed) and “*impact information*” (benefit or cost) in the treatment groups. The experiment tests whether the views and attitudes of people who are exposed to positive and negative, behavioral and impact frames about immigration significantly differ from the views and attitudes of people who have not been exposed to such treatments.

I use two dependent variables to measure these effects. The first captures respondents change in views by analyzing if they internalize the information. This variable measures changes in short-term beliefs of immigration as a cost or a benefit to society. I find that respondents who receive information about the *cost* of immigration are more likely to state that immigration is a cost rather than a benefit. On the contrary, respondents who receive information about the *benefit* of immigration are *not more likely* to state that immigration is a benefit rather than a cost to society. People are most susceptible to *negative impact information* (cost of immigration), though this may be due to experimenter demand effects (Zizzo, 2010).

The main dependent variable measures attitudes towards immigration through a policy preference question. I find that *behavioral information* about the *employment rate* of immigrants in Norway causes individuals to rate their preferences for immigration *more strictly*. I interpret the finding that people react *negatively* to this information (60 percent seems low), and thus rate their preferences for immigration more strictly. Moreover, in the heterogeneous analysis, I find that framing affects older people, highly educated people, people who belong to certain political parties, and people



who view immigration as an important issue. In the analysis, I treat “views” as representing underlying beliefs, and “attitudes” as reflecting underlying preferences towards immigration.

My results indicate that people are susceptible to *negative framing*, which is in line with previous research on framing effects (see Levin et al. 1998 for a review). A potential explanation is that “losses loom larger than gains,” or the notion of *loss aversion* (Kahneman & Tversky, 1979, p. 279). Further, the results also suggest a *negativity bias*, where social psychologists have found that people give greater weight to negative entities than to positive ones based on both inborn predispositions and experience (Kanouse & Hanson, 1972; Rozin & Royzman 2001). Other possible explanations are the *fiscal burden hypothesis* (Facchini & Mayda, 2009) or an *anchoring effect* (Kahneman & Tversky, 1975). Lastly, the results also implicate that people may change their preferences in the *very short run* and sheds light on the importance information may have on affecting preferences. On the other hand, I may not have convincing enough positive treatments in the experiment and limitations in the design make it difficult to point at the exact underlying mechanisms of the results.

Much of the empirical literature on immigration attitudes has focused on the *determinants* of individual attitudes towards immigration. While studies in the political economy tradition emphasize the role of economic determinants, such as *labor market competition* and *fiscal burden considerations* (Scheve & Slaughter 2001, Mayda, 2006), studies in the socio-psychological tradition show that cultural and psychological factors, such as group identity and culture, play a greater role in shaping attitudes (Citrin et al, 1997; Sniderman et al. 2004; Espenshade & Hempstead, 1996). I review the literature on both economic and socio-psychological determinants of attitudes. I further recognize that both economic and cultural considerations drive attitudes towards immigration, though my experiment focuses on the *economic determinants*.

It is likely that certain features of the public debate activate different beliefs, and that these beliefs can affect policy preferences. While the economic literature explains the underlying determinants of immigrants, they say less about how immigration attitudes change. My thesis contributes to the immigration literature by researching if information about the economic implications of immigration can affect preferences. It further contributes to the existing literature on the determinants of immigration attitudes, by using framing to affect preferences through economic determinants. Many political science studies have focused on framing *who* the immigrants are

(Latino or Western-European), and the framing thus works through the predisposing factors that are socio-psychological, such as culture, group identity and fear (Sniderman et al 2004; Brader et al. 2008). To the best of my knowledge, fewer studies have employed framing techniques that activate the economic determinants of attitudes. Sniderman et al. (2004) emphasize the role of “situational triggers,” in addition to predisposing factors, in explaining how people shape their attitudes towards immigration. As such, this experiment uses framing as a “situational trigger” in an attempt to affect immigration attitudes. The framing does not emphasize *who* the immigrants are, but *what* they do (employed or unemployed) and how this *affects* the society (cost or benefit).

This thesis is closest in spirit to two recent studies, Grigorieff et al. (2016) and Facchini et al. (2016). The former study experimentally tests if correcting biased beliefs about immigration, such as the number of immigrants residing in the country, changes immigration attitudes. They find that people who are told the actual percentage of immigrants in their country are less likely to say that there are too many immigrants, but they do not find an effect on the respondents’ self-reported immigration policy variable. Their results imply that people may update their underlying *beliefs* about immigration but not their *preferences*. Facchini et al. (2016) investigate whether providing information about the potential social and economic benefits of immigration can change immigration attitudes in Japan. They find that positive interventions emphasizing the benefits of immigration led to increased support for a less restrictionist immigration policy. My experiment differs from these studies in that I provide both negative *and* positive information about behavior and impact in an attempt to *isolate which type of information* affects attitudes. This thesis aims to answer the following research question: ***Does framing affect individual attitudes towards immigration?***

The rest of the paper is structured as follows: Chapter 2 provides a brief background to immigration in Norway, a review of related literature on the determinants of individual attitudes towards immigration, as well as a theoretical framework of framing effects. Chapter 3 presents the experimental research design and describes the data. Chapter 4 highlights the results, chapter 5 discusses heterogeneous effects, and finally chapter 6 concludes.

## Chapter 2: Background, theory, and related literature

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As immigrant populations have grown and changed the demographics of many European countries, an extensive literature on natives' attitudes toward immigration has also rapidly developed. This chapter provides a brief background to immigration in the Norwegian context. It then reviews the literature on the determinants of individual attitudes towards immigration. I distinguish between political-economic and socio-psychological determinants, and I include a discussion on altruism and reciprocity. The section further discusses how “non-economic” factors can explain attitudes towards immigration by incorporating identity into a model of consumer behavior (Akerlof & Kranton, 2000). Lastly, the chapter reviews the literature on framing theory. Based on this theoretical framework, the thesis aims to answer if framing affects individual attitudes towards immigration through an experimental approach.

### 2.1 Background

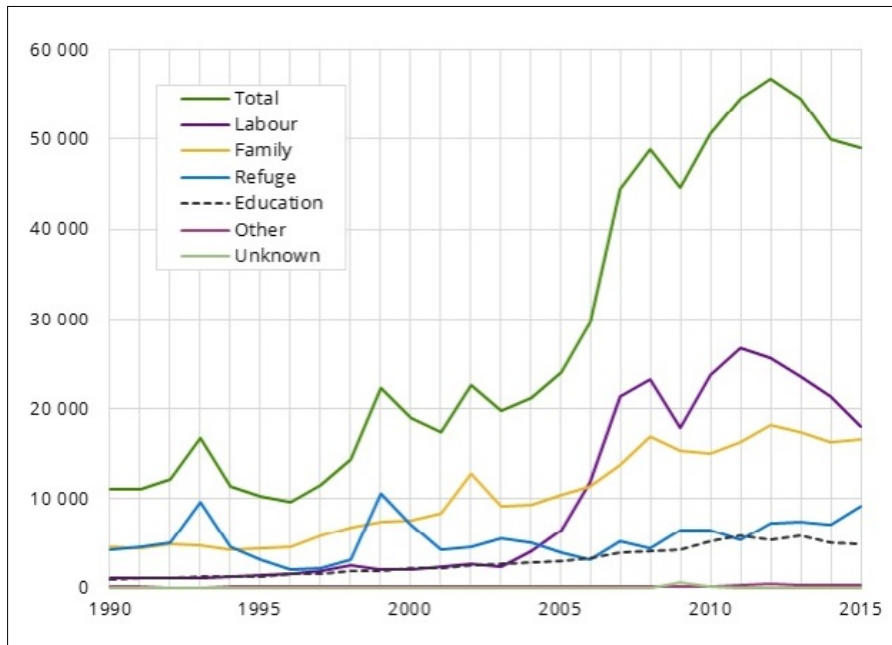
The Norwegian welfare model faces challenges of an older population and uncertainties regarding the future return of the oil fund. The higher immigration of people whose means to support themselves remain low, adds to the pressure on public finances and the welfare model. According to the newest NOU report on the long run effects of immigration, Norway has not properly succeeded in integrating immigrants from outside Europe into the labor market. The report stresses that if Norway does not achieve this, there is a risk that the increasing economic inequality together with cultural differences may weaken the foundation of coherence and trust in society, which can ultimately undermine the legitimacy of the welfare model (NOU:2, p.11).

Historically, global and regional differences in welfare and income, as well as the demand for work, have been two of the major driving forces behind international migration (Borjas, 1999a, 1999b). Today, people migrate to seek work, education, better living conditions, to live near close family, or because they are fleeing persecution, oppression, conflicts, environmental destructions and natural disasters. In the past decades, conflict, oppression and persecution have become larger driving forces behind migration.

As seen in figure 1, immigration to Norway has steadily increased over the past twenty years. The increase is closely linked with the expansions of the EU in 2004 and 2007. Figure 1 shows the

increasing trend of immigration to Norway between 1990 and 2015. In 2011-2012 the total immigration to Norway reached a peak, with around 58 000 per year (Statistics Norway, 2017). Net migration<sup>1</sup>, was 48 000 in 2012. Since the peak in 2012, immigration to Norway has decreased.

**Figure 1: Immigrants, by reason for immigration**



Source: Statistics Norway (2016)

While the Norwegian welfare model contributes to high social mobility of the second generation of immigrants, the model is very vulnerable to immigration of adults with low qualifications (NOU 2017:2).

## 2.2 What determines individual attitudes toward immigration?

The question of what determines individual attitudes towards immigration is important for understanding individual preferences, policy outcomes, how immigrants are integrated, and not least the welfare state's provision of services to immigrants. This section introduces the reader to two schools of thought on the topic of determinants: political economy determinants, and socio-psychological determinants.

<sup>1</sup> The number of emigrants subtracted from the number of immigrants

In their review of public attitudes towards immigration, Hainmueller and Hopkins (2014) divide the literature on determinants of immigration attitudes into research grounded in the political economy tradition and in the political psychology tradition. Others have referred to the determinants as ‘economic’ and ‘non-economic’ factors (Scheve and Slaughter, 2001; Mayda 2006; O’Rourke & Sinnott 2006). In this section, I use the categorization by Hainmueller and Hopkins (2014), and I include a discussion on altruism and reciprocity.

While the political-economic research maintains that economic factors, such as labor market competition, explain individual attitudes, the socio-psychological research holds that the ‘non-economic’ factors, such as group identity and culture, play a major role in shaping attitudes. This paper recognizes that *both factors are central* in explaining determinants of individual attitudes towards immigration, although my thesis focuses on the economic determinants.

### **Political economy determinants**

According to Borjas (1999a), fears about labor market competition and/or the fiscal burden of immigrants are the two most pressing issues in the immigration debate. These two issues have also come to gain widespread attention in recent studies explaining attitudes towards immigration (Scheve & Slaughter, 2007; Mayda 2006; O’Rourke & Sinnott 2006; Facchini & Mayda, 2009).

The political economy approach is based on the idea that attitudes are related to self-interest. The approach uses the competition of resources between immigrants and natives as the theoretical framework. Models of factor proportion and labor market competition are used to explain how individual attitudes are formed. Although the main argument is rooted in the political economy tradition, the studies also recognize the role of socio-psychological determinants.

### ***Labor market competition***

Several studies test the effect of labor market competition on immigration attitudes based on the theoretical framework of international trade theory (Heckscher Ohlin model) and the “factor-proportions” (FP) analysis (Borjas 1999b). Commonly starting with a model where citizens are endowed with different factors of production and income levels, these studies analyze how the influx of high skilled versus low skilled labor affect immigration attitudes. They start with a simple closed-economy model where one assumes that immigrants have relatively low skill-levels compared to native workers. Intuitively, immigration will therefore increase the supply of low-

skilled workers compared to other factors such as high skilled workers, land and capital. This leads to more competition in the market for low-skilled labor, pushing down real wages for low-skilled native workers and increasing wages for native citizens with high skills, land and capital. If immigrants were high skilled, the effect would be lower real wages in the market for high skilled workers and higher real wages for all others. The FP analysis predicts a correlation between immigration attitudes and skill level, which relates to the relative skill composition between immigrants and natives. Thus, the theory posits that citizens in countries with a relative composition of high skills should favor low-skilled immigration and vice versa.

A cornerstone study is Scheve and Slaughter (2001), which uses the FP analysis to show that low-skilled workers are more likely to hold restrictionist immigration views. They measure low skilled labor by years of education and wages. Although their findings are consistent with the FP model, the authors also acknowledge the role of other explanatory factors (such as cultural considerations).

Building on the findings by Scheve and Slaughter (2001), O'Rourke and Sinnott (2006) expand the analysis to include data for 24 countries on sociodemographic characteristics, socioeconomic position and political attitudes to test whether attitudes vary with individuals' endowments. They conclude that "the high-skilled are less opposed to immigration than the low-skilled, and this effect is greater in richer countries than in poorer countries and in more equal countries than in more unequal ones" (p, 857). They interpret these findings as further support for the FP analysis. Lastly, their results suggest that immigration attitudes reflect nationalist sentiment, though these results are less robust due to the potential of a reverse causality problem (national policy preferences explain attitudes towards immigration). Finally, they find that the determinants of attitudes towards refugees are different from the determinants of attitudes towards immigration.

Lastly, another widely cited paper, Mayda (2006) also finds support for the FP analysis, using the same data as O'Rourke and Sinnott (2006). She expands the analysis to include correlation patterns between individual answers to questions on immigration attitudes and socio-psychological issues. After controlling for non-economic factors, she finds that there is still support for the FP hypotheses. She concludes that both non-economic and economic factors play a role in determining attitudes towards immigration, and that skill composition across countries affect individual attitudes toward immigration.

### ***Fiscal burden***

Self-interest can shape attitudes towards immigration through labor market competition, but also through fiscal impact. This analysis is based on models in public finance, which show that low-skilled immigration raises fiscal pressures, either resulting in lower government spending (benefits) or higher taxes (see Hanson et al. 2007; Facchini & Mayda, 2009). These models assume that low-skilled immigration is a *net burden* to public finances, and that natives anticipate the effect on taxes and benefits. Low-skilled immigration thus affects natives' contributions to the welfare state as well as the benefits they potentially receive from it, which in turn determines attitudes towards immigration.

*Tax adjustment models* posit that the government adjusts the welfare costs (taxes) following immigration, leaving per capita benefits unchanged. Since natives with higher incomes will bear most of the cost of immigration through taxation, the theory predicts that high-skilled natives workers should be more opposed than low-skilled natives to low-skilled immigration. *Benefit adjustment models* hypothesize that the government adjusts per capita benefits, leaving taxes unchanged. Thus, natives at the bottom of the income distribution, who are more likely to receive benefits, suffer losses and are more likely to oppose immigration (see Facchini & Mayda, 2009 for a full framework of the models).

Hanson et al. (2007) investigate whether potential high fiscal costs from immigration shape policy preferences. They find that, in The United States, high-skilled natives (estimated by education levels) have stricter policy views in states where the net fiscal burden of immigration is likely to be high. They find support for the fiscal burden theory, and conclude, "high exposure to immigrant fiscal pressures reduces support for freer immigration among natives, especially the more skilled" (p. 30).

Similarly, Facchini and Mayda (2009) find that natives with high income are more negatively affected by low-skilled immigration because they bear most of the fiscal costs. They show the effect of low-skilled immigration on attitudes through a tax adjustment model, where taxes are raised to maintain per capita transfers unchanged, and a benefit adjustment model, where the adjustments are carried out through the reduction in benefits. Their results show that "in countries

where natives are on average more skilled than immigrants, individual income is negatively correlated with pro-immigration preferences” (Facchini & Mayda, 2009, p. 296).

On the other hand, Hainmueller and Hiscox (2010) find that both rich *and* poor natives oppose low-skilled immigration. They conclude that their findings are inconsistent with hypotheses of self-interest, and that the results instead “are consistent with alternative arguments emphasizing noneconomic concerns associated with ethnocentrism” (p.61).

### **Altruism and reciprocity**

It is likely that questions of morality and ethics are important aspects of determinants of preferences, and the thesis therefore includes a discussion on altruism and reciprocity as potential determinants of individual attitudes towards immigration.

Altruism, or the idea that people behave selflessly, opposes the economic assumption that self-interest motivates behavior. The philosopher Thomas Nagel defines altruism in the following way: “By altruism I mean not abject self-sacrifice, but merely a willingness to act in the consideration of the interests of other persons, without the need of ulterior motives” (Nagel, 1970, p. 79). According to this definition, altruism is *purely* motivated by the concern for the interests of others. More formally, an individual’ utility, increases with the well-being of others (Fehr and Schmidt, 2006). On the other hand, others have discussed the *impurity* of altruism, arguing that individuals derive utility by giving to others – the ‘warm-glowing’ of giving – and posits that this behavior is motivated by self-interest (Andreoni, 1995). According to him, pure altruism and the warm glowing effect may work either separately or complementarily.

To identify altruistic behavior, experimental research eliminates the potential of selfish actions based on ulterior motives. There is a wide range of laboratory experiments using prisoner’s dilemma, dictator, public good, as well as trust games to show that people have altruistic and/or warm-glowing motives.<sup>2</sup>

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<sup>2</sup> For further reading, see Kelley and Stanelski (1970), Andreoni and Samuelson (2006) for prisoner dilemma games, Ledyard (1994) for a summary of public good games, Guth, Schmittberger and Schwarze (1982) for dictator games, as well as Isaac and Walker (1988) and Berg, Dickhaut and McCabe (1995).



There are different views on altruism and on how it affects behavior. “Conditional altruism” is one particular form of altruism that might be of particular relevance in explaining attitudes towards immigration. For example, a conditional altruist would hold that, “if immigrants work hard and contribute to the Norwegian welfare state, I am willing to accept milder immigration policies.” This relates to the idea of *reciprocity*, meaning that “in response to friendly actions, people are frequently much nicer and much more cooperative than predicted by the self-interest model; conversely, in response to hostile actions they are frequently much more nasty and even brutal” (Fehr & Gächter, 2000, p. 159). For instance, in *distributive situations*, people are more willing to give aid to a recipient the less they perceive him/her as responsible for their misfortune (Konow, 2000; List & Cherry, 2008).

Reciprocity may also affect social policy issues (Bowles & Gintis, 1998). According to this view, social policies are much more likely to be accepted by public opinion if they depend on rewarding people who *contribute to society* rather than on those who do not contribute. In the literature, there is growing consensus that people are more willing to punish those who do not contribute than to reward those who do contribute (Fehr & Gächter, 2000).

### **Socio-psychological determinants**

The socio-psychological approach highlights the effect of group identity, symbols, norms, stereotyping, and group categorization in explaining attitudes. Hainmueller & Hopkins (2014) notes that the effects can be thought of as both cultural and economic.

The ‘non-economic’, or socio-psychological factors can affect attitudes in different ways. For instance, people may perceive immigration as a threat to the norms and national identity of a society. These individuals may derive utility from living in a country with a strong sense of national identity and norms, and therefore oppose immigration.

Identity – a person’s sense of self – is a central concept within the field of social psychology, political science, anthropology, sociology and history (Tajfel and Turner, 1979). Tajfel and Turner’s *social identity theory* posits that individuals sort people into “in-groups” and “out-groups.” Because people find self-esteem in the group they belong to, they enhance the image of

their own in-group and discriminate against the out-group. This concept, also referred to as *ethnocentrism*, has been widely used to explain immigration attitudes (Sniderman et al. 2000; Kinder & Cindy, 2000).

Several studies have looked at the effect of socio-psychological factors on immigration attitudes, while also leaving the potential role for political economy factors (Espenshade & Calhoun, 1993; Espenshade & Hempstead, 1996; Citrin et al. 1997; Sniderman et al. 2004; Dustmann & Preston, 2007). These studies conclude that non-economic factors reign over economic factors in explaining individual attitudes towards immigration.

Akerlof and Kranton (2000) were notably the first to incorporate the concept of identity into an economic model of behavior to demonstrate how *identity influences economic outcomes*. In fact, they argue that because individuals choose who they want to be, and, because identity is fundamental to behavior, this choice of identity may be the most important ‘economic decision’ people make (Akerlof and Kranton 2000, 717). They explore the idea that, “Identity can account for many phenomena that current economics cannot well explain” (p. 716). These phenomena include ethnic and racial conflict, discrimination, labor disputes and separatist politics.

According to Akerlof and Kranton (2000), the concept of identity contributes to economic analysis in many ways. For instance, identity can give rise to a new type of externality where the identity of one individual may threaten the identity of another individual (the identity of a foreign woman may threaten the identity of a native woman). Identity provides an alternative way to changing preferences.

The authors propose a utility function where identity serves as a motivation for behavior (Akerlof and Kranton 2000, 718). In the utility function, identity is related to social categories and expected respective behaviors (a norm or a prescription for behavior). Deviation from the norms, or prescriptions as they term them, causes disutility. Each person has a conception of his own and others’ categories.

Lastly, several studies have linked the concept of identity to redistributive preferences in welfare economics (Shayo, 2009; Font & Cowell, 2013). Font & Cowell (2013) conclude, “the extent to which identity influences preferences has wide-ranging implications for welfare economics” (p, 2).

As mentioned previously, one might expect that immigration attitudes correlate with redistributive preferences.

## **Discussion**

After reviewing more than one hundred studies on immigration attitudes, Hainmueller and Hopkins (2014) conclude that natives' attitudes towards immigration show more sign of being shaped by socio-psychological concerns about its cultural impacts on a nation, than on the economic impacts. On the other hand, the aforementioned political economy studies conclude that economic factors play just as great a role in shaping attitudes.

There are, however, a number of economic theories, such as identity economics (Akerlof & Kranton, 2000), economics of reciprocity (Fehr & Gächter, 2000) and several experiments (see footnote in altruism discussion for examples) that have analyzed how 'non-economic' factors affect beliefs and social preferences. Although preferences are exogenously given in classical economic theory, much behavioral research in economics is devoted to the analysis on how 'non-economic' factors may change preferences.

## **2.3 Framing theory**

Neoclassical economic theory makes the assumptions that (i) agents have defined preferences and unbiased expectations and beliefs, (ii) they make optimal decisions based on these expectations and beliefs, and (iii) their primary motivation is self-interest. Standard preference theory assumes that preferences are "reference independent," meaning that they are not affected by the asset position of the individual. Further, it assumes invariance, meaning that different frames of the same choice problem should yield the same preferences (Kahneman & Tversky, 1986). Much behavioral research, however, indicates a violation of these assumptions.

One of these violations include the power of *framing*, which has gained widespread attention in behavioral research. The way we word choices to highlight negative and positive sides of the same decision has been found to affect individual decision-making, attitudes, and actions. As such, "framing effects show that the way that choices are presented to an individual often determine the preferences that are 'revealed' " (Camerer et al., 2004, p. 12). Closely related are other behavioral anomalies, such as the status quo bias (Samuelson and Zeckhauser 1988), observed divergences between willingness to pay and willingness to accept (Kahneman et al., 1990; Hanneman, 1991),

the anchoring effect (Kahneman & Tversky, 1975), and the endowment effect (Thaler, 1980). These are all examples of *reference-dependent decision-making*, where values are attached to changes relative to a reference point, rather than to final states or absolute levels (Kahneman and Tversky, 1979:277). Lastly, these anomalies broadly relate to the concept of loss aversion, a phenomenon encountered in Kahneman & Tversky's prospect theory.

In this section, I will introduce three different types of framing: (1) risky choice framing, (2) attribute framing, and (3) goal framing, following the typology by Levin and colleagues (1998). My experimental design is motivated by attribute and goal framing. I start with a discussion of prospect theory, where the authors used risky choice framing to show that people avert risk in a positive frame and support risk in a negative frame (loss aversion). Although studies have shown that loss aversion occurs in the presence of risk, the phenomenon is not necessarily dependent on decision-making models with risk (Levin et al, 1998 p. 177). I propose that loss aversion can partly explain why the negative frames in my experimental design affect views and attitudes.

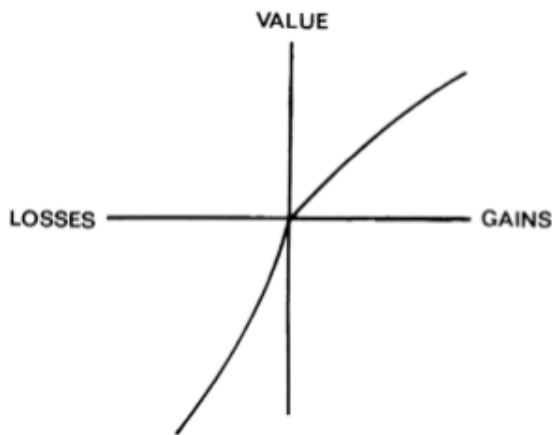
### **Prospect theory**

Loss aversion is hardly a new phenomenon. Already 200 years before Kahneman and Tversky's (1979) prospect theory, Adam Smith (1759) visited the idea that people are much more sensitive to losses than to gains, contrary to neoclassical economic prediction. In *The Theory of Moral Sentiments*, he wrote, "We suffer more, it has already been observed, when we fall from a better to a worse situation, than we ever enjoy when we rise from a worse to a better" (Smith, 1759, p. 214). Although Smith's quote may refer to the fall and rise in social statuses, the intuitions remains the same: we are likely to suffer more from losses than we are to enjoy our gains, or, put differently, we are likely to demand more to give up something we own than we are willing to pay for the same good.

In prospect theory, Kahneman and Tversky (1979) theorized that presenting options in negative and positive frames would affect the outcome of a decision under risk. They found that under positive prospects, people tend to be risk averse, and under negative prospects, they tend to be risk seeking. By highlighting the discrepancies between consumer behavior and utility theory through responses in questionnaires, Kahneman and Tversky concluded that consumers treat gains differently than losses, and referred to the phenomena as loss aversion.

Based on their findings, they formulated a value function,  $v$ , which is defined in terms of changes in wealth instead of final asset position and may replace the utility function. In expected utility theory, a subject will value a prospect in accordance with probabilities, whereas in prospect theory subjective decision weights replace the probabilities. The value function is therefore defined with respect to a *reference point*, rather than a final position. It is concave for gains and convex for losses, and it is also steeper for losses (see figure below).

**Figure 2: The value function**



The classical example of risky framing is the “Asian disease” problem, where people are informed about a disease that threatens the lives of 600 people and asked to choose between a positive (lives saved) frame and a negative (lives lost) frame (Kahneman & Tversky, 1981). In the positive frame, respondents can choose between (A) saving 200 lives for sure, and (B) one third chance of saving 600 people with a two-third chance of saving no one. In the negative frame, they choose either (C) 400 people dying for sure or (D) a two-third chance that 600 people die and a one-third chance that no one dies. The majority of people choose options (A) in the positive frame (risk averse), and option (D) in the negative frame (risk seeking), even though A and C and B and D are equivalent in terms of lives saved and lost.

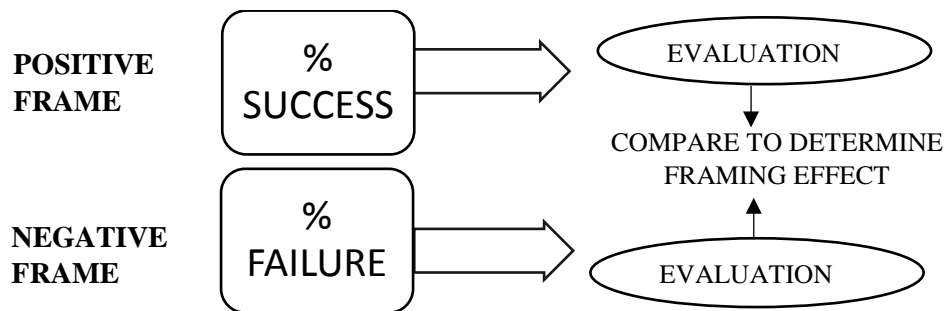
According to Levin and colleagues (1998), “Choice can only provide an indirect measure of the effect of a frame on information processing because choice relies on several component processes including option evaluation and option comparison” (p. 157). Since risky choice framing includes

another aspect – risk – it is harder to identify if it is the frame or the risk that affects the information processing. Levin et al. (1998) have identified two more types of framing: *attribute framing* and *goal framing*.

### Attribute and goal framing

*Attribute framing* is the simplest form of framing, where the emphasis lies on a single attribute of an object or an event in a negative or in a positive frame. Subjects receive information about a success rate and a failure rate before they are asked to evaluate an event or an object. According to Levin et al (1998), attribute framing allows for the most basic test of the influence of a positive and a negative frame because of the absence of risk. Figure 3 illustrates how attribute framing uses a positive frame to accentuate a success rate, and a negative frame to accentuate a failure rate.

**Figure 3: Attribute framing**



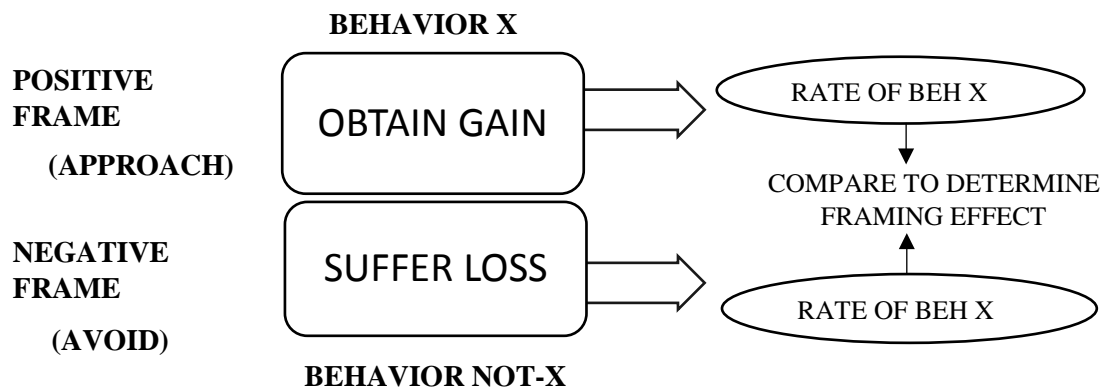
Source: Replication from Levin et al (1998, p 158).

For example, Levin & Gaeth (1988) showed that perceptions of beef changed when they labeled it “75% lean” vs “25 % fat.” When labeled in the positive frame (75% lean), beef was rated less greasy and even better tasting. They suggested that the framing effect occurred because positive and negative labeling of attributes are likely to cause negative and positive associations in memory. The framing effect produces a “valence-consistent shift” where the positive frame leads to more favorable evaluations than the negative frame (See Levin et al., 1998 for a further discussion on the cognitive processes behind framing effects). Thus, describing an object or event in terms of a success rate is more likely to yield a favorable evaluation than describing it in terms of a failure rate. This valence consistent shift is widely documented in choice of consumer products, selection

of medical treatments, as well as in evaluations of projects and programs (Levin & Gaeth, 1988; Marteau, 1989; Dunegan, 1993).

*Goal framing* refers to the framing of the *consequence* or *goal* of a behavior, and is a more complicated form of framing. Goal framing tests whether the *persuasiveness* of a positive or negative frame will have the greatest impact on respondents. According to Levin et al. (2002), “goal-framing effects occur when a persuasive message has different appeal depending on whether it stresses the positive consequences of performing an act to achieve a particular goal or the negative consequences of not performing the act” (p.6). Figure 4 shows how the positive frame focuses on the gains of a behavior, whereas the negative frame focuses on the losses of not performing a behavior.

**Figure 4: Goal framing**



Source: Replication from Levin et al (1998, p 173).

Effects of goal framing have been widely documented in health-related studies (Meyerowitz & Chaiken, 1987; Banks et al. 1995). For example, Banks et al. (1995) found that women who received *negative goal framing* about mammography were *more likely* to obtain a mammogram in the next year. In their experiment, they measured attitudes and beliefs before and after the respondents had viewed videos that highlighted either the risks of not obtaining a mammogram (negative goal frame), or the benefits of obtaining a mammogram (positive goal frame).

The effect is also identified in studies of “endowment effects” (Thaler, 1980) and “social dilemmas” (Brewer and Kramer, 1986; Andreoni, 1995; Ellingsen et al., 2012). For instance, Thaler (1980) found that people were more willing to forego a cash discount than to accept a credit card surcharge. Again, the implied negative goal frame (credit card surcharge) had a greater effect than the positive goal frame (cash discount). Studies of the endowment effect show that people are more willing to forego gains than to accept losses, relating it closely to the concept of *loss aversion*.

In studies of social dilemmas, many laboratory experiments indicate that different game labels can affect cooperation in the games (Brewer and Kramer, 1986; Andreoni, 1995; Ellingsen et al., 2012). For instance, among others, Ellingsen et al., (2012) found that people are more likely to be cooperative in a Prisoner’s dilemma experiment named the “Community game” than the “Stock market game.” In terms of goal framing, the label “Community game” infers a goal of cooperation at the cost of potential private gains (loss or negative frame), whereas the label “Stock market game” gives a cue that it is a competitive game with possible private gains (gain or positive frame).

According to Levin et al., (1998), there are more variations in using goal-framing effects than attribute framing, and the evidence is therefore more heterogeneous. For goal framing effects, Levin et al, 1998 conclude “the impact of *negative information*, with or without risk, has routinely been found to be *stronger* than the impact of positive information of the same magnitude.” (p. 177).

My experimental design resonates well with (and is highly motivated by) the categorization by Levin et al., (1998). However, this thesis uses the terms *behavioral information* and *impact information* to describe the frames in my experiment, as these descriptions are more coherent with my experimental design. Information about the unemployment- and employment rate says more about the behavior of people than the attributes of an object, and I have therefore chosen to call it behavioral information instead of attribute framing. Further, information about the costs of unemployment and the benefits of employment frames a goal/consequence, but it does not frame the goal/consequence of the *same act* (for instance see mammography example). Instead, this experiment uses two different acts (work/not work) to describe two different consequences (benefit/cost on welfare state), and it therefore uses the term *impact framing*.



### **Framing in immigration studies**

When framing topics of immigration, several studies have focused on group framing labels such as “illegal aliens” vs “undocumented workers,” and “Latino” vs “European.” (Brader et al., 2008; Knoll et al., 2011). These studies find that ethnic cues and negative group labeling are likely to produce anxiety and strengthen in-group mentality (thus working through the socio-psychological determinants). For instance, Brader et al. (2008) uses framing manipulations that (1) emphasize the cost or benefit of immigration, (2) label immigrants as “Latinos” or “European”, and (3) label them as “high-skilled” or “low-skilled” labor. They report that the ethnic labeling frames (Latino vs European) create the greatest change in immigration policy preferences, and conclude that ethnic cues are more likely to affect attitudes towards immigration than economic costs or skill levels.

Similarly, in a nationally representative telephone survey, Sniderman et al. (2004) tests whether the framing of cultural vs economic “threats” affect attitudes. They find that cultural threatening cues (immigrants in the Netherlands who do not speak Dutch) evoke more opposition to immigration than economic cues. Alternatively, others have found that cognitive processes, such as framing, can work through providing stereotype-consistent stories (Valentino et al. 2002). As such, “Latino” frame or “cultural threatening” cues may *also* activate negative stereotypes of “illegal aliens” *and* low-skilled workers, thus strengthening the effect of a “Latino” or “cultural” frame.

Closest to my study in experimental design, Facchini et al. (2016) finds that providing information about the social and economic benefits of immigration led to increased support for less restrictionist immigration policy. Many of their effects also persisted 10-12 days after the treatments. My experiment, on the other hand, finds no support for an effect of the positive frames. However, different from my experimental design, Facchini et al. (2016) provide *extensive* information about the specific benefits of immigration to the welfare state. For instance, they highlight that immigration can combat the current pension crisis in Japan, and find that this results in a 21 percentage point increase in support for a less restrictionist immigration policy. In contrast, my design only highlights that immigration is an income to the welfare state, and does not mention specific benefits for the Norwegian population.

It is difficult to identify what truly determines individual attitudes towards immigration, as well as how to identify which and why framing manipulations work. Based on the theoretical framework and related literature discussed in this chapter, the thesis aims to investigate whether framing in the treatment groups activates underlying beliefs and preferences for immigration policy.

## 2.4 Research question

The thesis aims to answer the following overall research question:

- *Does framing affect individual attitudes towards immigration?*

The experimental design is motivated by the literature on both the political economy and socio-psychological determinants of attitudes towards immigration, as well as by the framing literature. My experimental design is influenced by the *fiscal burden* hypothesis: providing negative and positive information on the impact of immigration on the Norwegian welfare state will affect individual attitudes towards immigration through the discussed mechanisms of these models.

Furthermore, the design is also influenced by the literature on *conditional altruism* and *reciprocity*: Positive (negative) framing about the contribution (non-contribution) of immigrants (work/not work) may affect attitudes through the mechanism of *responding to behaviour* as discussed in chapter 2.

## Hypotheses

**H<sub>1</sub>**: It is more likely to find statistical significance for the *negative framing* than it is to find statistical significance for the *positive framing*.

As previously discussed, loss aversion and a negativity bias can partly explain how the negative information may affect the respondents more than the positive information. This hypothesis is also consistent with the extensive review on framing effects by Levin et al. (1998), who show that most studies on goal framing, which is closely related to the impact information, find that negative goal framing has the greatest impact on respondents.

Furthermore, research in political science has found that framing stereotype-consistent stories may affect attitudes (see for example Valentino et al. 2002). If so, one should expect greater differences

between the treatments that focus on unemployment and costs to society, since these are negative and stereotypical depictions of immigrant populations.

**H<sub>2</sub>:** It is more likely to find statistical significance for the *negative impact framing* than it is to find statistical significance for the *negative behavioral framing*.

This hypothesis follows the *fiscal burden hypothesis*: providing information about the cost of immigration reinforces the mechanisms of the tax adjustment and benefit adjustment models – because of additional taxes or fewer benefits, people will respond to the frame. The negative impact frame (unemployment is a cost to society) states *directly* how immigration is a cost to society, whereas the behavioral information states *indirectly* (through the unemployment rate) that it is a cost to society. I therefore hypothesize that negative impact framing reinforces the fiscal burden theory.

Alternatively, theories of conditional altruism and reciprocity support the idea that *behavioral information* (work/not work) will have statistical significance. A conditional altruist shapes beliefs and preferences about immigration on what immigrants do (work or not work). Accordingly, their preferences for immigration policies depend on the behavior of the immigrants. Thus, these theories predict that the behavioral information will have statistical significance and not impact information.

**H<sub>3</sub>:** It is more likely to find statistical significance for the treatment that combines *negative behavioral* and *negative impact information* than to find statistical significance for the treatment that combines *positive behavioral* and *positive impact information*.

The combined treatments analyze whether the combined effect is greater than the sum of their individual effects. I expect that these combined treatments place more emphasis on the negative features of immigration, and that this emphasis will make the frame more effective. Alternatively, the two effects (behavioral and impact information) may also work in opposite directions.

## Chapter 3: Research design and data

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### 3.1 Design

I have chosen an experimental approach because it resolves the problem of selection bias present in studies using observational data. With experimental data, I assure that subjects are *randomly assigned* to the different groups in my design, and an orthogonality test shows that the samples are in fact balanced. It further makes it possible to identify key aspects that might influence beliefs and preferences, as well as how these vary across the different groups. With an experimental design, the interventions are exogenous, allowing the experimenter full control over the explanatory variables. This also solves endogeneity problems.

I conducted the experiment in the Norwegian Citizen Panel at the University of Bergen.<sup>3</sup> The Norwegian Citizen panel is a web-based survey that gathers data on Norwegians' attitudes and opinions towards societal matters. The panel sends out the survey a few times a year and the respondents are randomly selected from the National Registry. The respondents thus represent a cross-section of the Norwegian population. The survey takes on average 20 minutes to complete. My experiment is part of the data collected in wave 7. We sent out the web-based survey in September 2016, and we retrieved the data in December 2016.

In my experiment, 1,087 respondents were randomized into six treatment groups and one control group. The treatment groups received negative and positive behavioral and impact information, whereas the control group received no framing prior to questions on belief update and immigration policy preference.

### 3.2 Treatment groups

The experiment exposes three treatment groups to negative framing about the *unemployment rate* of immigrants in Norway, and three treatment groups to positive framing about the *employment rate* of immigrants in Norway. Thus, the framing emphasizing unemployment (three groups) is

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<sup>3</sup> Norwegian Citizen Panel round 7, 2016. Data gathered by Ideas2Evidence for Elisabeth Ivarsflaten et.al., University of Bergen. First NSD-edition, Bergen 2017.

characterized as ‘negative framing,’ and the framing about the employment rate (three groups) as ‘positive framing.’

The experimental design further distinguishes between *behavioral* and *impact* information. The *behavioral* treatments receive statistical information about the unemployment and employment rates, and the *impact* treatments receive information about the effect the rates may have on the Norwegian welfare state in terms of a cost or a benefit. Lastly, two treatment groups *combine* the positive behavioral and impact framing, and the negative behavioral and impact framing. The control group receives no framing.

All groups receive two questions: (1) to test whether they have internalized the framing and changed their views, and (2) a policy question to analyze the effect of framing on immigration attitudes.

Table 1 shows an overview of the six treatment groups. The respondents in the two *behavioral* treatments, *Unemployment* and *Employment*, are informed about the statistics of the unemployment/employment rate of immigrants in Norway. The two *impact* treatments, *Expense* and *Income*, are informed about the impact of the unemployment/employment rate of immigrants on the Norwegian welfare state. Lastly, *Unemployment+Expense* and *Employment+Income*, receive a combination of the behavioral and impact framing, so that two “triggers” work simultaneously.

**Table 1. Framing design**

	<i>Behavioral information</i>	<i>Impact information</i>	<i>Behavioral+Impact Information</i>
<i>Negative frame:</i> (Unemployment rate)	<b>Unemployment<sup>4</sup></b>  You may well be aware that the unemployment rate for immigrants in Norway is around 7 %.	<b>Expense</b>  You may well be aware that the unemployment rate for immigrants means a significant expense for the Norwegian welfare state.	<b>Unemployment+Expense</b>  You may well be aware that the unemployment rate for immigrants in Norway is around 7 %. This means a significant expense for the Norwegian welfare state.
<i>Positive frame:</i> (Employment rate)	<b>Employment<sup>5</sup></b>  You may well be aware that the employment rate for immigrants in Norway is around 60 %. <sup>6</sup>	<b>Income</b>  You may well be aware that the employment rate for immigrants means a significant income for the Norwegian welfare state.	<b>Employment+Income</b>  You may well be aware that the employment rate for immigrants in Norway is around 60 %. This means a significant income for the Norwegian welfare state.

<sup>4</sup> *Unemployed persons* are persons who were not employed in the reference week, but who had been seeking work during the preceding four weeks, and were available for work in the reference week or within the next two weeks (in 1996-2005 one should be available within two weeks following the time of interview, and until 1996 one should be able to start working in the reference week). Persons laid off 100 per cent are defined as unemployed after three continuous months of leave. (Statistics Norway, 2017, <http://www.ssb.no/en/akumnd>)

<sup>5</sup> *Employed persons* are persons aged 15-74 who performed work for pay or profit for at least one hour in the reference week, or who were temporarily absent from work because of illness, holidays etc. Conscripts are classified as employed persons. Persons engaged by government measures to promote employment are also included if they receive wages. Persons laid off 100 per cent with a continuous duration of until three months are defined as employed, temporarily absent” (Ibid)

<sup>6</sup> Statistics of both rates gathered from Statistics Norway (2016).

Because the employment rate includes people aged 15-74 years in Norway, it tends to be lower than what people imagine. In comparison, the Norwegian employment rate was 68 percent when I conducted the experiment. The term “employment rate” is not usually encountered in the public debate. Ideally, the employment rate would be 93 % and I would have a “perfect” attribute frame. Unfortunately, there is no such symmetry in this experimental design. In accordance with framing theory, the two behavioral frames show a “success rate” (employed) and a “failure rate” (unemployed). However, it appears that people view a 60 percent employment rate as a 40 percent unemployment rate, which is a misreading of the intended design. It appears that the intended positive behavioral framing is in fact *even more negative* than the negative behavioral frame of unemployment. *I will therefore treat it as another negative frame.* Due to this, I also expect that the combined treatment of employment and income have two effects working against each other (60 percent deemed low but the framing emphasizes income). These are weaknesses of the design, which I discuss at the end of chapter 4.

### **3.3 Dependent variables**

After the framing, the respondents in all groups (both control and treatments) are asked to answer two questions: one to tests if respondents update their *beliefs* about immigration as a cost or a benefit to society, and one that measures if respondents rate their *preferences* for immigration policy differently.

I include these two dependent variable to capture two different effects: the first dependent variable captures whether the respondents have internalized the framing and if they have understood the information I provide. Further, it captures an important aspect of the experiment: the view on the societal cost/benefit of immigration. In that regard, it does not capture attitudes towards immigration, but it does test whether respondents update their beliefs about immigration after the positive and negative framing. The question reads as follows:

1. *How large would you say the cost or benefit of immigration is to the Norwegian welfare state?*

The respondents are asked to scale their preferences between 1 and 7, where 1 = great cost, 2 = cost, 3 = certain cost, 4 = neither cost nor benefit, 5 = certain benefit, 6 = benefit, 7 = great benefit.

Although this question tests whether the respondents successfully internalize the priming, it cannot serve as a main outcome variable in the experiment due to the likelihood of experimenter demand effects (Zizzo, 2010).

The main dependent variable is view on immigration policy and captures whether framing changes respondents attitudes towards immigration. I measure the framing effect through a self-reported policy preference variable:

2. *“How mild or strict should Norway’s immigration policy be?”*

Respondents rate their preferences on a scale from 1 to 7, where 1 = very mild, 2 = mild, 3 = somewhat mild, 4 = neither mild nor strict, 5 = somewhat strict, 6 = strict, 7 = very strict. This is the main dependent variable in the experiment.

### **3.4 Main variables**

As specified in table 2, I include a number of different control variables in the analysis. These control variables include gender and age of respondents, education level, income, region of residence, and size of municipality. I use three dummy variables for age between 18-29, 30-59, 60+, with 60+ the excluded category in the regression analysis. I measure education by three dummy variables for primary/no education, secondary and tertiary education, with primary/no education the excluded category. Further, I use dummies to capture each of the 19 regions, where Oslo is the excluded category. The income variable contains data from a previous wave<sup>7</sup>, and is limited to half the sample. Lastly, the size of the municipality is captured by three dummies for size<10,000, 10,001-20 000, 20,001-60,000 and 60,000+, with 60,000+ the excluded category.

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<sup>7</sup> The data on income comes from wave 3 of the Norwegian Citizen Panel and merely represents half of my sample.



**Table 2. Main variables**

<b>Variable</b>	<b>Explanation</b>
<i>Dependent variables</i>	
View on immigration policy	Variable based on response to question "How mild or strict should Norway's immigration politics be?" (scale from 0-1, where 0 = Mild, 1 =
View on cost of immigration	Variable based on response to question "How large would you say the cost or benefit of immigration is to the Norwegian welfare state?", (scale from 0-1, where 0 = Great benefit, 1 = Great cost).
<i>Treatment variables</i>	
Unemployment rate	Dummy variable of whether respondent received information about the unemployment rate of immigrants
Employment rate	Dummy variable of whether respondent received information about the employment rate of immigrants
Expense	Dummy variable of whether respondent received information about the expense the unemployment rate of immigrants causes
Income	Dummy variable of whether respondent received information about the income the employment of immigrants generates
Unemployment rate+expense	Dummy variable of whether respondent received information about the unemployment rate of immigrants <i>and</i> the expense this may cause
Employment rate+income	Dummy variable of whether respondent received information about the employment rate of immigrants <i>and</i> the income this may generate
<i>Control variables</i>	
Male	Gender of respondent (dummy variable, 1 - male, 0 - female)
Age, 18-29 years	Age of respondent
Age, 30-59 years	Age of respondent
Age, 60+	Age of respondent
Education, primary/no	Respondent has completed primary school or no completed education (dummy variable, 1 - Yes, 0 -No)
Education, secondary	Respondent has completed secondary school (dummy variable, 1 - Yes, 0 -No)
Education, tertiary	Respondent has completed secondary school (dummy variable, 1 - Yes, 0 -No)
Income	Respondent's income (1000 NOK)
Regions yes	Respondent resides in region, (dummy variable, 1 - Yes, 0 -No)
Municipal size <10 000	Respondent resides in an area where the population is below 10 000 inhabitants, (dummy variable, 1 - Yes, 0 -No)
Municipal size 10 001 - 20 000	Respondent resides in an area where the population is between 10 001 - 20 000 inhabitants (dummy variable, 1 - Yes, 0 -No)
Municipal size 20 001 - 60 000	Respondent resides in an area where the population is between 20 001 - 60 000 inhabitants, (dummy variable, 1 - Yes, 0 -No)
Municipal size 60 000+	Respondent resides in an area where the population is above 60 000 inhabitants, (dummy variable, 1 - Yes, 0 -No)

Lastly, I compare the outcome in the treatment groups with the control group by estimating the following ordinary least squares equation:

$$y_i = \alpha + \beta_{X1}X1_i + \beta_{X2}X2_i + \beta_{X3}X3_i + \beta_{X4}X4_i + \beta_{X5}X5_i + \beta_{X6}X6_i + \beta_Z Z_i + \varepsilon_i \quad (1)$$

Where  $y_i$ , is the outcome variable view on immigration policy for individual  $i$ ,  $X_i$  are indicator variables of which of the treatment group the respondents were exposed to, and  $Z_i$  is a vector of the control variables.

When estimating the heterogenous effects, I include interaction variables between the treatment groups and political affiliation, some of the control variables, as well as an interaction between the treatments and a variable that measures the respondent's view on the importance of immigration,

### **3.5 Data**

Table 3 presents summary statistics of the main variables in the sample (see appendix B for summary of all variables). The main sample includes 1087 respondents. Because this wave (wave seven) of the web-survey did not include a question on income, I had to include an income variable from a previous wave (wave 3). Unfortunately, this wave merely included income data for about half of the main sample. Therefore, the income variable only includes 591 observations.

I recoded the dependent variables to values between 0 and 1. The average view in the control and treatment groups on benefit/cost of immigration is 0.678, where 0 = great benefit, and 1 = great cost. In the sample, people on average characterize immigration as a greater cost than a benefit to the Norwegian welfare state. The main dependent variable, attitudes towards immigration policy, is also recoded to a value between 0 and 1, where 0 = very mild, and 1 = very strict. The average value is 0.705, which signifies that people on average tend towards a stricter view on immigration policy.

Regarding the socio-demographic variables, the mean age is between 30 and 59 years old, around 30 percent of the people has completed secondary education and 60 percent has completed tertiary education, the mean income is around 390 000 NOK a year, and most people live in higher populated municipalities such as Akershus, Oslo, and Hordaland. Around 40 percent of the sample live in regions where population size exceeds 60 000 inhabitants.

**Table 3. Summary statistics of main variables, full sample**

	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
View on immigration policy	1,087	0.705	0.186	0.143	1
View on cost of immigration	1,087	0.678	0.203	0.143	1
Male	1,087	0.511	0.500	0	1
Age, 18-29 years	1,087	0.102	0.303	0	1
Age, 30-59 years	1,087	0.552	0.498	0	1
Age, 60+	1,087	0.346	0.476	0	1
Education, primary/no	1,087	0.098	0.298	0	1
Education, secondary	1,087	0.296	0.457	0	1
Education, tertiary	1,087	0.605	0.489	0	1
Income	591	3.978	1.910	1	8
Municipal size <10 000	1,087	0.179	0.384	0	1
Municipal size 10 001 - 20 000	1,087	0.149	0.357	0	1
Municipal size 20 001 - 60 000	1,087	0.232	0.422	0	1
Municipal size 60 000+	1,087	0.439	0.496	0	1
Regions yes	19				

**Note:** Mean of controls in percentages

### 3.6 Randomization and balance

A total of 1143 random respondents from the Norwegian Citizen panel were selected to participate in the experiment. Table 4 shows how many respondents were randomized into each group.

**Table 4: Groups**

<b>Groups</b>	<b>Respondents</b>
Control	180
Unemployment	162
Employment	162
Expense	156
Income	175
Unemp+Expense	163
Emp+Income	145
Total	1143

To test if there is balance between all the groups, I perform an orthogonality test. Table 5 presents the balance test between the treatments and the control group on all the covariates used in my

analysis. If there is balance on the covariates, the respondents are successfully randomized into the treatment and control groups. The first seven columns of the table present the mean value of all the covariates for each treatment group and the control group. The last column reports a p-value of an F-test with the null hypothesis that there are no significant differences between treatment and control groups. The F-test shows that the randomization is successful on all covariates except for secondary education. From the six first columns we see that the mean value of the covariate on secondary education is more spread than the others. The p-value of 0.054 signifies that there are significant differences across the control group and treatments with respect to secondary education. This means that in some treatments there are more people with secondary education than in other treatments, which must be taken into consideration when drawing conclusions.

However, it is not unlikely that one finds imbalance on one variable, even when assignment to treatments is random. The test thus suggests that the randomization has worked well (see appendix C for the complete test).

**Table 5. Balance test**

	Control	Unemployment	Employment	Expense	Income	Unemp+Expense	Emp+Income	Orthogonality
Education, primary/no	0.092 (0.022)	0.120 (0.027)	0.096 (0.024)	0.103 (0.025)	0.091 (0.022)	0.120 (0.026)	0.063 (0.020)	0.724
Education, secondary	0.270 (0.034)	0.247 (0.035)	0.338 (0.038)	0.301 (0.038)	0.358 (0.037)	0.222 (0.033)	0.336 (0.040)	<b>0.054</b>
Education, tertiary	0.638 (0.037)	0.633 (0.039)	0.567 (0.040)	0.596 (0.041)	0.552 (0.039)	0.658 (0.038)	0.601 (0.041)	0.468
Age 18-29	0.122 (0.024)	0.111 (0.025)	0.117 (0.025)	0.115 (0.026)	0.074 (0.020)	0.067 (0.020)	0.130 (0.028)	0.341
Age 30-59	0.561 (0.037)	0.506 (0.039)	0.562 (0.039)	0.474 (0.040)	0.589 (0.037)	0.558 (0.039)	0.527 (0.041)	0.152
Age 60+	0.317 (0.035)	0.383 (0.038)	0.321 (0.037)	0.410 (0.040)	0.337 (0.036)	0.374 (0.038)	0.342 (0.039)	0.193
Gender	0.494 (0.037)	0.525 (0.039)	0.537 (0.039)	0.513 (0.040)	0.514 (0.038)	0.521 (0.039)	0.459 (0.041)	0.907
Income	4.082 (0.194)	4.036 (0.236)	4.091 (0.227)	3.711 (0.214)	4.010 (0.173)	4.047 (0.198)	3.659 (0.188)	0.066
Municipal size yes								
Regions yes								
N	180	162	162	156	175	163	146	

## Chapter 4: Results

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This chapter presents the main results of the experiment. As discussed, the experiment measures the effect of framing on *two dependent variables*: view on immigration as a benefit or a cost, and immigration policy preference. The former measures if the interventions activate *beliefs* about immigration and the latter captures whether framing affects immigration *policy preferences*.

The first section presents the findings on the benefit/cost variable, followed by the results on the policy preference variable.

### 4.1 Benefit or cost of immigration

Respondents received the following question after the framing (treatments) or after no framing (control):

Question applied in the survey:

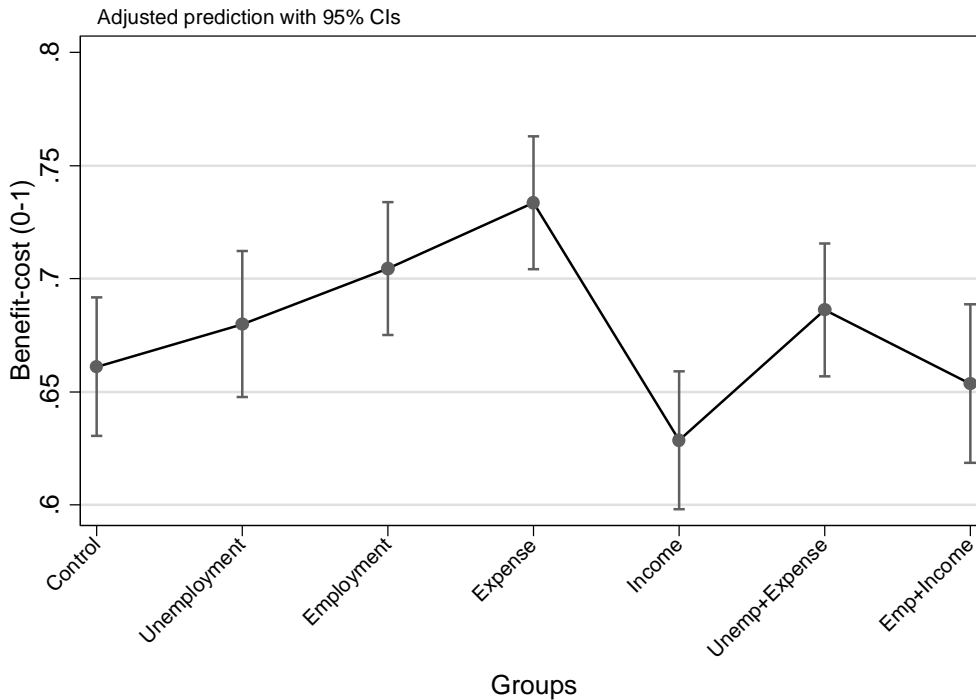
*How large would you say the cost or benefit of immigration is to the Norwegian welfare state?*

When comparing the treatment groups to the control group, I find that people update their beliefs about their view of immigration as a cost or a benefit to society. Specifically, I find that negative framing has a statistically significant effect, supporting the first hypothesis,  $H_1$ .

Figure 5 shows the confidence intervals for the control group and the six treatment groups. The y-axis is a scale that ranges from benefit=0 to cost=1. As already discussed, respondents lean more to the cost side of the scale, above 0.5. The figure depicts that respondents are receptive to information, and that framing activates the respondents' beliefs about immigration as a benefit or a cost to society. All groups, except for treatment *Income* and *Emp+Income*, report that immigration is a cost rather than a benefit to society after the framing (not all effects are statistically significant). Looking at the point estimates of *Employment* and *Expense* it seems that these are statistically different from the control group (they do not overlap the control group's confidence interval). However, since *Employment* and *Control* have overlapping confidence intervals, one cannot say if they significantly differ before running a regression or performing a t-test of differences in means. The greatest difference appears to lie between the control group and the treatment *Expense*. Further, the figure also shows that *Employment* and *Expense* do not have

overlapping confidence intervals with *Income*, and *Employment* and *Expense* are therefore statistically different from *Income*.

**Figure 5. View on cost and benefit of immigration by groups**



The results in the OLS regression reported in Table 6 confirms that *Employment* and *Expense* are statistically different from the control group. Model (1) shows a regression of the treatment dummy variables on the cost/benefit dependent variable. Those who have been exposed to framing about the *employment rate* state that immigration is a 0.04 ( $p < 0.05$ ) higher cost to society than those in the control group. Second, respondents who are exposed to framing about the *expense of immigration* to society state that immigration is a 0.07 ( $p < 0.01$ ) greater cost to society than those in the control group.

Model (2) shows that the effect of the framing persists when I include the control variables gender, age, education, municipalities, and size of region. As seen, males state that immigration is a greater cost to society than women ( $p < 0.05$ ), younger people state that immigration is a greater benefit to society than older people, and people with higher education state that it is more a benefit than people with no/primary education. These findings are consistent with the research on determinants

of immigration attitudes (see chapter 2).

Because income reduces the sample size, I only include it in model (3). Interestingly, income *correlates positively* with preferences for *stricter immigration policies* ( $p < 0.01$ ). This supports the *fiscal burden hypothesis* that natives with high incomes bear the fiscal costs of immigration, and therefore prefer stricter immigration policies. The result supports Facchini and Mayda (2009) who found that income is positively correlated with stricter immigration policy preferences in countries where natives are on average more skilled than immigrants.

The effect of treatment group *Employment* vanishes in model (3). I therefore run a regression using only the income sample ( $N=595$ ), with all the control variables, to test if this regression lacks the effect of *Employment*. Model (4) shows the regression without control variables with the reduced sample, and model (5) includes controls with the same sample. The lack of effect of the *Employment* treatment may accordingly be due to the reduced sample size.

**Table 6. Belief benefit/cost of immigration (0=benefit, 1=cost)**

Variables	(1) Benefit/cost	(2) Benefit/cost	(3) Benefit/cost	(4) Benefit/cost	(5) Benefit/cost
1.Unemployment	0.0188 (0.0227)	0.0137 (0.0227)	0.0232 (0.0329)	0.0289 (0.0327)	0.0243 (0.0329)
2.Employment	0.0435** (0.0216)	0.0446** (0.0212)	0.0365 (0.0306)	0.0442 (0.0313)	0.0396 (0.0308)
3.Expense	0.0724*** (0.0216)	0.0625*** (0.0221)	0.0969*** (0.0314)	0.110*** (0.0315)	0.0984*** (0.0314)
4.Income	-0.0325 (0.0220)	-0.0337 (0.0216)	-0.0439 (0.0303)	-0.0352 (0.0309)	-0.0433 (0.0303)
5.Unemp+Expense	0.0251 (0.0216)	0.0256 (0.0211)	0.0578* (0.0297)	0.0660** (0.0299)	0.0564* (0.0300)
6.Emp+Income	-0.00749 (0.0237)	-0.00497 (0.0233)	-0.0125 (0.0314)	-0.0122 (0.0326)	-0.0150 (0.0316)
Male		0.0245** (0.0121)	0.0168 (0.0181)		0.0309* (0.0168)
Age 18-29 years		-0.100*** (0.0225)	-0.0667** (0.0320)		-0.0882*** (0.0312)
Age 30-59		-0.00896 (0.0129)	0.0129 (0.0178)		0.0179 (0.0177)
Education, secondary		-0.0219 (0.0224)	-0.0406 (0.0312)		-0.0392 (0.0307)
Education, tertiary		-0.0871*** (0.0210)	-0.107*** (0.0294)		-0.0906*** (0.0284)
Income			0.0128** (0.00513)		
Regions		yes	yes		yes
Size of municipality		yes	yes		yes
Constant	0.661*** (0.0156)	0.724*** (0.0291)	0.661*** (0.0441)	0.647*** (0.0231)	0.700*** (0.0419)
Observations	1,144	1,093	595	595	595
R-squared	0.025	0.104	0.147	0.048	0.138

**Note:** Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Reference categories: Age 60+, Education, primary/no, Oslo, and Size of region 60 000+

- (1) Estimation results, no controls
- (2) Estimation results, controls (without income)
- (3) Estimation results, controls (with income)
- (4) Estimation results, no controls, income sample
- (5) Estimation results, controls (without income), income sample



As stated in chapter 3, I treat Employment as *negative behavioral framing*. Although intended a positive frame (employment rate can be viewed as a “success rate”), my results indicate that people interpret 60 percent as a low employment rate.

The results suggest that *negative behavioral information* and *negative impact information* activate beliefs about immigration, supporting hypothesis  $H_1$ , that negative framing should have a statistically significant effect. These interventions seem to update people’s views on the cost of immigration, and could possibly activate underlying beliefs. *Negative impact* framing has a higher statistical significance than negative behavioral information, supporting  $H_2$ . I do not find support for  $H_3$  (their combined effects). These interventions seem to update people’s views on the cost of immigration, and could possibly activate underlying *beliefs* about immigration.

However, *experimenter demand effects* probably affect the results on this particular dependent variable (Zizzo, 2010). Using Zizzo’s (2010) definition, “Experimenter demand effects refer to changes in behavior by experimental subjects due to cues about what constitutes appropriate behavior” (p.2). It is likely that by informing subjects about the costs and benefits of immigration, the experimental design points them in the direction of answering that it is in fact a cost or a benefit. A weakness of the dependent variable is therefore that it *demand*s behavior from the subjects.

## 4.2 Immigration policy

The respondents were also asked to answer:

*Question: “How mild or strict should Norway’s immigration policy be?”*

The survey asked individuals to rate their preferences for immigration policy on a scale from mild to strict after the framing. Again, I find statistical significance for the treatment *Employment*. Individuals who are exposed to this treatment subsequently *rate their preferences for immigration policy more strictly*. This supports the hypothesis,  $H_1$ , that negative framing is more likely to have statistical significance than positive framing. I do not find support for  $H_2$  or  $H_3$ .

Figure 6 shows the confidence intervals for view on immigration policy. As seen in the figure, point estimates for all groups are above 0.5 signifying that, on average, they prefer stricter rather than milder immigration policies. Respondents in all treatment groups prefer stricter immigration policies than the respondents in the control group, though the overlapping confidence intervals

make it hard to say if any of the effects are statistically different. The respondents in the *Employment* treatment reports the strictest view on immigration policies, which is also statistically significant (see regression in table 7).

**Figure 6. View on immigration policy by groups**

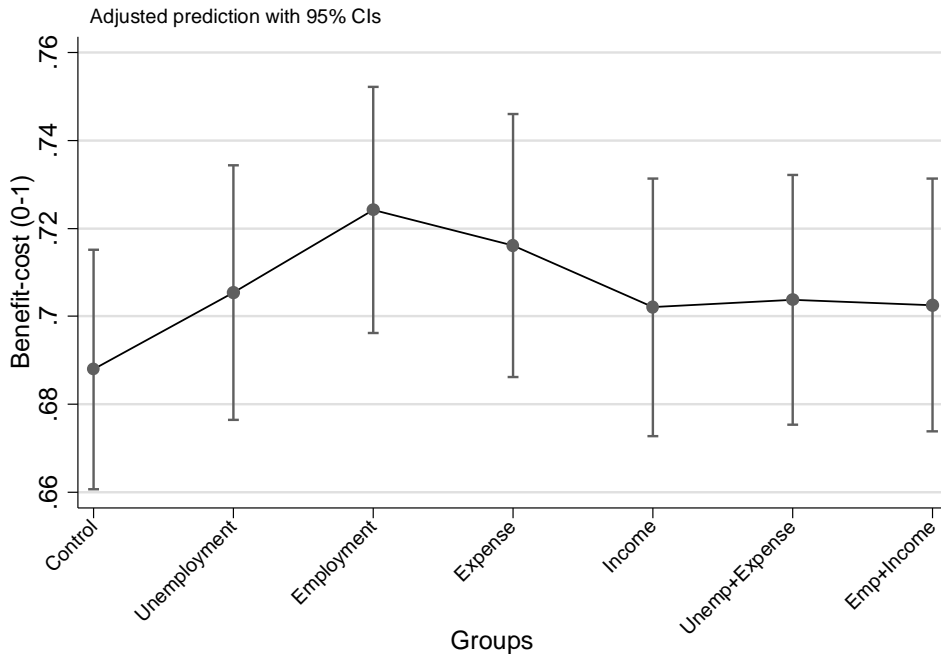


Table 5 shows the main results of an OLS regression on preference for immigration policy. The dependent variable takes a value between 0 and 1, where 0 = very mild, 1 = very strict. Model (1) shows the OLS regression of the interventions. The positive signs of the all the coefficient indicate, though not all statistically significant, that all interventions made the respondents rate their preferences for immigration policy more strictly than the control.

I find again that treatment *Employment* is statistically different from the control group ( $p < 0.1$ ). The coefficient expresses that receiving the framing *Employment* results in respondents rating their preferences for immigration policy 0.03 points stricter than the control group. The effect is rather small in a scale between 0 and 1, but it is nonetheless statistically significant.

The effect of *Employed* persists when I add the control variables (without income) in model (2). I find that males prefer stricter immigration policies than women ( $p < 0.05$ ), younger people prefer

milder immigration policies than older people ( $p < 0.01$ ), and people with higher education favor milder immigration policies than people with no/primary education ( $p < 0.01$ ). These results are consistent with studies of the political economy determinants of individual attitudes towards immigration discussed in chapter 2. Since these studies use education as a measure for skill level, they conclude that the positive correlation between higher education and pro-immigration preferences is due to the *factors proportions analysis* (Scheve and Slaughter, 2001; Mayda, 2006). The results on education also support the *labor market competition* hypothesis, which posits that less-skilled natives (lower education) prefer stricter immigration policies.

Including income in model (3) reduces the sample size. Also here, income correlates positively with preferences for stricter immigration policies. As with the previous dependent variable, the framing effect of *Employment* vanishes in model (3) and treatment *Expense* is statistically significant ( $p < 0.05$ ). Again, in model (4) I rerun the regression in the same smaller sample in Model (3), and use this sample in running the regression without any controls in model (4). The framing effect of *Expense* persists in model (4) and in model (5), where I include the controls. In these model the effect is even stronger ( $p < 0.01$ ), while *Employment* is statistically insignificant. This suggests that the effect for *Employment* vanishes due to the reduced sampling size.

**Table 7. Preference for immigration policy (0=mild, 1=strict)**

Variables	(1) Policy preference	(2) Policy preference	(3) Policy preference	(4) Policy preference	(5) Policy preference
1.Unemployment	0.0174 (0.0203)	0.0155 (0.0199)	0.0164 (0.0272)	0.0211 (0.0279)	0.0178 (0.0275)
2.Employment	0.0362* (0.0199)	0.0332* (0.0198)	0.00631 (0.0275)	0.0234 (0.0284)	0.0101 (0.0282)
3.Expense	0.0282 (0.0206)	0.0174 (0.0211)	0.0692** (0.0269)	0.0815*** (0.0274)	0.0710*** (0.0269)
4.Income	0.0141 (0.0204)	0.0105 (0.0203)	0.00893 (0.0285)	0.0157 (0.0292)	0.00958 (0.0290)
5.Unemp+Expense	0.0158 (0.0201)	0.0140 (0.0198)	0.0263 (0.0270)	0.0304 (0.0283)	0.0243 (0.0276)
6.Emp+Income	0.0146 (0.0202)	0.0181 (0.0200)	0.0125 (0.0264)	0.00999 (0.0276)	0.00909 (0.0270)
Male		0.0525*** (0.0110)	0.0237 (0.0153)		0.0418*** (0.0150)
Age 18-29 years		-0.0947*** (0.0214)	-0.0458 (0.0283)		-0.0736*** (0.0275)
Age30-59 years		0.00815 (0.0119)	0.0178 (0.0162)		0.0243 (0.0160)
Education, secondary		-0.00131 (0.0193)	-0.0182 (0.0272)		-0.0165 (0.0267)
Education, tertiary		-0.0717*** (0.0185)	-0.0981*** (0.0272)		-0.0768*** (0.0266)
Income			0.0165*** (0.00482)		
Regions		yes	yes		yes
Size of municipality		yes	yes		yes
Constant	0.688*** (0.0139)	0.703*** (0.0256)	0.662*** (0.0399)	0.677*** (0.0201)	0.712*** (0.0360)
Observations	1,138	1,087	591	591	591
R-squared	0.003	0.103	0.140	0.016	0.121

**Note:** Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Reference categories: Age 60+, Education, primary/no, Oslo, and Size of region 60 000+

- (1) Estimation results, no controls
- (2) Estimation results, controls (without income)
- (3) Estimation results, controls (with income)
- (4) Estimation results, no controls, income sample
- (5) Estimation results, controls (without income), income sample

#### 4.4 Discussion and critique

The results indicate that providing information that pertains to economic considerations about immigration can change what people think about immigration.

In my first hypothesis,  $H_1$ , I posited that it is more likely to find statistical significance for the *negative framing* than it is to find statistical significance for the *positive framing*. I found support for this hypothesis in both my regressions, and phenomena of *loss aversion*, “losses loom larger than gains,” and a negativity bias may explain the results. Other explanations include the *fiscal burden hypothesis*, that people fear higher taxes or lower benefits, and social identity theory (Tajfel & Turner, 1986). In the latter case, by accentuating certain features of immigrants (work status/race/origin) in a frame, one reminds respondents of the out-group status of the immigrants. This reminder strengthens the in-group mentality, and a negative frame may thus strengthen the disfavor of the out-group.

In  $H_2$ , I asked if it is more likely to find statistical significance for the *negative impact framing* than it is to find statistical significance for the *negative behavioral framing*. I found that for views on the cost/benefit of immigration, both treatments were statistically significant, though *negative impact framing* ( $p < 0.01$ ) more than *negative behavioral framing* ( $p < 0.05$ ), supporting the hypothesis. However, this variable pronounced weaknesses of experimenter demand effects.

Regarding the second dependent variable, the policy preference variable, I only found that the treatment *negative behavioral framing* was statistically significant, supporting the alternative hypothesis that it is more likely to find statistical significance for the negative behavioral framing than it is to find statistical significance for the negative impact framing. This is consistent with conditional altruism and reciprocity (Fehr & Gächter, 2000), as well as the finding that people are less willing to give aid to a recipient the more they perceive him/her as responsible for their misfortune (Konow, 2000; List & Cherry, 2008). Another plausible explanation is an *anchoring effect*, where people seem to “anchor” on a number they are shown before answering a question, and that this number heavily influences the answers (see Tversky & Kahneman 1975). In this case, the frames that provide concrete percentage numbers could lead respondents to “anchor” on these numbers when consequently asked about the costs and benefits and the preference for policy.

Lastly, I hypothesized that,  $H_3$ , it is more likely to find statistical significance for the treatment that combines *negative behavioral* and *negative impact information* than to find statistical significance for the treatment that combines *positive behavioral* and *positive impact information*. I found no support for this hypothesis.

There are a number of *weaknesses* to the experimental design. First, the supposedly positive framing, *employment*, turned out as an even more negative framing than the *unemployment* frame. It appears that the design had *two negative behavioral information* framing, instead of one positive and one negative. Therefore, the experiment cannot surely conclude that it is in fact more likely to find statistical significance for the negative framing than the positive framing, since I do not have a “proper” positive behavioral frame.

Second, the experiment merely includes self-reported measures and not behavioral measures of change in views of the cost/benefit of immigration and policy preferences. It is therefore impossible to tell if respondents would *act* upon these changes. Grigorieff et al. (2016) finds that respondents update their views about immigration when learning the actual share of immigrants in their country, and through a behavioral measure, they find that people consequently donate more money to a pro-immigrant charity.

Furthermore, I do not test whether the effect persist over time through a follow up question. Most likely, I would not find an effect in a follow up since the effect were rather small. Ellingsen et al. (2012) argue that social frames may enter people’s beliefs rather than their preferences, and that people are more likely to be cooperative in a Prisoner’s dilemma experiment when it is called the “Community game” than when it is called the “Stock market game.” This effect, however, vanishes when the game is played sequentially, suggesting that the frame merely activated a short-term belief and not a preference.

The experiment had few observations and many treatment groups. With more observations in each interventions, it would be more likely to achieve statistic significant results. More observations could also strengthen the goodness of fit of the model.

Lastly, it is difficult to say whether the framing affects views, beliefs, attitudes or preferences towards immigration. The first dependent variable measured views of cost/benefit and in my design it captured whether people changed their underlying beliefs about immigration. The main

dependent variable measured immigration policy preferences, and in my design it captured underlying preferences for immigration. On the one hand, the thesis cannot conclude which effect or mechanism is at play. On the other, it can argue that by providing certain types of negative information about immigration, people update their views about immigration, at least in the very short-run, although it may only be situation-dependent. This supports Grigorieff et al (2016) who conclude, “While providing information can change how people perceive immigrants, it might not be enough to change their policy preferences” Grigorieff et al. (2016 p.3).

## Chapter 5: Heterogeneous effects

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Lastly, are some people more affected by framing than others? It is likely that factors such as education, gender, and age, political affiliation, as well as personal involvement in an issue help decide whom the framing manipulations affect. For instance, is the impact of the framing greater for people with high or low education, for young or old, male or female? Are right wing or left wing voters more likely to be affected by the framing? Lastly, are people who view immigration as important less likely to be affected by the framing manipulations? These questions are important for targeting various types of information towards specific types of people.

This chapter answers these questions by testing *heterogeneous or interaction effects*. I test for effects between the treatment variables and the *control* variables, the treatments and *political affiliation* variables, and lastly between the treatments and a variable that captures respondent view on the *importance of immigration politics*. I test these interaction effects on the dependent variable that measures *preferences for immigration policies*.

It is likely that the heterogeneous effects work through some of the economic and socio-psychological mechanisms discussed in chapter 2. Since I only include ‘economic’ variables, the thesis can only find support for some of the economic determinants of attitudes. Lastly, the thesis merely discusses the *potential mechanisms* in play, since it is likely that many other factors (such as socio-psychological) also affect attitudes.

### 5.1 Control variables

The results in chapter 4 suggest that younger people, women, and highly educated natives prefer milder immigration policies than older people, males and the less educated natives. These results, however, do not say *whom the framing affects*.

Is it likely that highly educated natives are more receptive to information and thus affected by the framing, or are they more critical to the information? Does framing have different effects across gender? Lastly, are some age groups more affected by the framing manipulations than others? Facchini et al. (2016) find that the framing effect is mostly driven by the exposure of people to new information, rather than resulting from framing certain issues. Based on this, they argue that the effect of the treatment is likely to be stronger in lower-information environments. Given that older



people are less exposed to information than younger people, for example through using social media, is it likely that older people are more affected by framing than younger people are?

To test this, I run the regression with the main control variables (except income) and include the interaction effects with the dummy variables age 60+, higher education, income and gender. I include dummy variables to make the analysis simpler. In this analysis, age 60+ is a dummy which takes the value 1 if respondents are older than 60 and 0 if younger than 60. Similarly, higher education takes the value 1 if respondents are highly educated, and 0 if they have secondary, primary/no education. Income takes the value 1 if respondents earn between 700 000- 1 000 000 NOK, and 0 if less. Gender takes value 1 if male, 0 if female. Table 8 shows the results from the OLS estimation. The first row shows the dependent variable, *policy preference*, which measures preferences for immigration policy, where 0=mild and 1=strict. The second row shows the interaction variables.

In model (1), where the interaction is age 60+, the *main effect* is given by  $\beta_{Xi}$ , and shows the treatment effect on the young. Its level of significance indicates whether it is statistically different from zero (it is not for any of the interventions). The *interaction effect* is given by  $\beta_{XiINT}$ , and shows the difference between the treatment effects of the old versus the young for each of the interventions. The interaction effect is 0 for the young (scoring 0 on the age dummy). The significance level indicates whether the two groups are affected differently by the treatment. The sum of the main effect and the interaction effect is the treatment effect on the old, and its level of significance given below in the table for all interventions indicates whether it is statistically different from zero. The two effects give the overall effect of the interaction for the old.

P-values at the bottom of the tables reflect a test of whether the sum of the treatment effects and their interaction is significant. The effect of this test may be statistically significant ( $p < 0.1$ ), even though the main effect and interaction effect are not separately statistically significant. This is because the p-value tests the hypothesis that *the sum* of the main effect and the interaction effects equal to zero.

Model (1) shows the interaction effect between the treatments and people aged above 60 years, model (2) with higher educated people, model (3) with people with high income, and model (4) with gender.

The effects of treatment *Employment* on age group 60+ is the main effect (effect on the young)  $0.017 +$  the interaction effect of  $0.059 = 0.076$  (with a p-value of 0.0024 given below table). This suggests that people in age group 60+ prefer *stricter* immigration policies after the treatment *Employment*. On a scale between 0 and 1 (which was originally 1-7), a 0.14 change on the new scale means moving one answer on the original scale. This means that the treatment *Employment* affects the age group 60+ by a little more than halfway to the next answer on the scale.

Interestingly, I find that *almost all* framing effects affect people above 60 years (p-values given below the table are all statistically significant except for *EmpIncome* with a  $p=0.12$ ). All (added) effects are positive, meaning that the framing effects make natives above 60 years rate their preference for immigration policy more strictly.

Further, I find that *Employment* also effects those with higher education. Intriguingly, highly educated natives become *stricter* in their views on immigration policies when they learn that the employment rate is 60 percent. The added effect is 0.07, meaning that they move halfway towards the next answer on the original scale. This supports the reasoning that people interpret 60 percent as a low employment rate and that this framing is probably *even more* negative than the initial negative framing (unemployment rate).

The p-value showing that the sum of the treatment effects and their interaction is significant, is close to statistically significant for the *Expense* with those with higher income. This supports the previous finding that the effect of *Expense* is in the income sample, since those with higher income are affected by this framing.

I find no effects for gender.

**Table 8. Interaction effects: control variables**

	(1)	(2)	(3)	(4)
Dependent variable	<i>Policy preference</i>	<i>Policy preference</i>	<i>Policy preference</i>	<i>Policy preference</i>
Interaction variable	<i>Age 60+</i>	<i>Education, tertiary</i>	<i>Income</i>	<i>Gender</i>
1. Unemployment ( $\beta_{x1}$ )	-0.001 (0.025)	-0.004 (0.033)	0.033 (0.031)	0.019 (0.029)
Unemployment*Interaction variable ( $\beta_{x1}INT$ )	0.060 (0.042)	0.035 (0.042)	-0.016 (0.088)	-0.002 (0.040)
2. Employment ( $\beta_{x2}$ )	0.017 (0.024)	-0.008 (0.030)	-0.005 (0.030)	0.045 (0.029)
Employment*Interaction variable ( $\beta_{x2}INT$ )	0.059 (0.042)	0.074* (0.040)	0.036 (0.078)	-0.018 (0.040)
3. Expense ( $\beta_{x3}$ )	0.002 (0.028)	-0.005 (0.029)	0.089*** (0.029)	0.022 (0.030)
Expense*Interaction variable ( $\beta_{x3}INT$ )	0.053 (0.042)	0.037 (0.041)	-0.246*** (0.100)	-0.007 (0.042)
4. Income ( $\beta_{x4}$ )	-0.003 (0.026)	-0.006 (0.028)	0.029 (0.030)	0.030 (0.029)
Income*Interaction variable ( $\beta_{x4}INT$ )	0.062 (0.042)	0.036 (0.040)	-0.060 (0.093)	-0.026 (0.041)
5. Unempexpense ( $\beta_{x5}$ )	-0.007 (0.024)	0.003 (0.031)	0.036 (0.029)	0.031 (0.029)
Unempexpense*Interaction variable ( $\beta_{x5}INT$ )	0.080* (0.042)	0.026 (0.040)	0.037 (0.083)	-0.023 (0.040)
6. Empincome ( $\beta_{x6}$ )	0.003 (0.025)	-0.008 (0.028)	0.016 (0.027)	0.017 (0.028)
Empincome*Interaction variable ( $\beta_{x6}INT$ )	0.050 (0.042)	0.042 (0.040)	0.030 (0.131)	0.002 (0.040)
Age 60+	-0.044 (0.030)	0.008 (0.011)	-0.001 (0.015)	0.008 (0.012)
Education, tertiary	-0.059*** (0.012)	-0.094*** (0.027)	-0.063*** (0.016)	-0.058*** (0.012)
High income			0.095 (0.070)	
Gender	0.058*** (0.011)	0.057*** (0.011)	0.034** (0.015)	0.068** (0.028)
Constant	0.695*** (0.023)	0.703*** (0.025)	0.679*** (0.030)	0.674*** (0.025)
Controls	Yes	Yes	Yes	Yes
r2	0.082	0.081	0.131	0.079
N	1087	1087	566	1087
p-value ( $\beta_{x1} + \beta_{x1}INT = 0$ )	0.078	0.219	0.832	0.536
p-value ( $\beta_{x2} + \beta_{x2}INT = 0$ )	0.024	0.014	0.666	0.345
p-value ( $\beta_{x3} + \beta_{x3}INT = 0$ )	0.086	0.264	0.105	0.612
p-value ( $\beta_{x4} + \beta_{x4}INT = 0$ )	0.075	0.282	0.715	0.882
p-value ( $\beta_{x5} + \beta_{x5}INT = 0$ )	0.036	0.265	0.351	0.776
p-value ( $\beta_{x6} + \beta_{x6}INT = 0$ )	0.124	0.212	0.716	0.491

## 5.2 Political affiliation

Are people on the right or left of the political scale more affected by the framing effects? Is it likely that people who vote extreme parties are less affected by framing because they already lie in the extreme right or left of the scale (prefer either *very mild* or *very strict* immigration policies). On the other hand, they could also be more prone to the framing because they have strong beliefs about the matter and the framing makes these beliefs *even stronger*.

I present the main results from the interaction effects between the treatments and political party affiliation. I find no results for people who belong to the two main parties in Norway, Høyre and Arbeiderpartiet and therefore I do not include them in the table. Model (5), (6), and (7) shows the results on the parties Rødt, Senterpartiet (Sp) and Frp. Rødt have fairly anti-restrictionist policy views, Sp have fairly restrictionist policy views, and Frp have the most restrictionist policy views.

I find that the framing in treatment *Employment* affects both Rødt and Sp supporters (p-values below 0.1). Rødt voters move *one whole answer towards milder policies* on the scale. Sp voters who receive the same framing subsequently prefer *stricter policies*.

On the other hand, only 3 percent of the sample votes Rødt and 5 percent votes Sp. This means that in the sample, each group has around three to ten voters from Rødt and Sp, and the representation may not be large enough to dedicate the effect of framing to party affiliation. In addition, since I do not find results for the major parties Arbeiderpartiet and Høyre, this suggests that *other factors* than political affiliation determine whom the framing effects affect.

Regarding FrP, I find statistical significance for *Unemployment* and *Income*. The results show that FrP voters state that they prefer stricter immigration policies after these treatments.

**Table 9. Interaction effects: Political affiliation**

	(5)	(6)	(7)
Dependent variable	<i>Policy preference</i>	<i>Policy preference</i>	<i>Policy preference</i>
Interaction variable	<i>Rødt</i>	<i>SP</i>	<i>FRP</i>
1. Unemployment ( $\beta_{x1}$ )	0.012 (0.020)	0.014 (0.021)	-0.000 (0.020)
Unemployment*Interaction variable( $\beta_{x1}INT$ )	0.031 (0.229)	0.010 (0.076)	0.074* (0.045)
2. Employment ( $\beta_{x2}$ )	0.034* (0.020)	0.025 (0.021)	0.028 (0.020)
Employment*Interaction variable ( $\beta_{x2}INT$ )	-0.168** (0.081)	0.129** (0.060)	0.014 (0.068)
3. Expense ( $\beta_{x3}$ )	0.024 (0.021)	0.012 (0.022)	0.003 (0.022)
Expense*Interaction variable ( $\beta_{x3}INT$ )	-0.158* (0.087)	0.101 (0.083)	0.036 (0.043)
4. Income ( $\beta_{x4}$ )	0.006 (0.021)	0.003 (0.021)	-0.005 (0.021)
Income*Interaction variable ( $\beta_{x4}INT$ )	0.069 (0.133)	0.106 (0.072)	0.090** (0.045)
5. Unempexpense ( $\beta_{x5}$ )	0.009 (0.020)	0.014 (0.020)	0.007 (0.020)
Unempexpense*Interaction variable ( $\beta_{x5}INT$ )	0.104 (0.078)	-0.010 (0.078)	-0.026 (0.054)
6. Empincome ( $\beta_{x6}$ )	0.020 (0.020)	0.013 (0.021)	-0.010 (0.020)
Empincome*Interaction variable( $\beta_{x6}INT$ )	-0.017 (0.097)	0.057 (0.075)	0.092** (0.044)
Rødt	-0.130* (0.071)		
SP		-0.053 (0.048)	
FrP			0.153*** (0.034)
Constant	0.714*** (0.026)	0.710*** (0.026)	0.688*** (0.025)
Controls	Yes	Yes	Yes
r2	0.127	0.105	0.200
N	1082	1082	1082
p-value ( $\beta_{x1} + \beta_{x1}INT = 0$ )	0.853	0.751	0.062
p-value ( $\beta_{x2} + \beta_{x2}INT = 0$ )	0.089	0.007	0.516
p-value ( $\beta_{x3} + \beta_{x3}INT = 0$ )	0.113	0.158	0.291
p-value ( $\beta_{x4} + \beta_{x4}INT = 0$ )	0.568	0.112	0.034
p-value ( $\beta_{x5} + \beta_{x5}INT = 0$ )	0.131	0.956	0.718
p-value ( $\beta_{x6} + \beta_{x6}INT = 0$ )	0.970	0.332	0.036

**Note:** Ordinary least squares regression with robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Controls include age, gender, education, regions, and size of municipality. Reference categories: Age 60+, Education, primary/no, Oslo, and Size of region 60 000+. Reference category political affiliation: those who did not vote.

(5) Estimation results, interaction Rødt

(6) Estimation results, interaction SP

(7) Estimation results, interaction FrP

### 5.3 Importance of immigration

Is it likely that those who view immigration politics as important are less susceptible to the framing manipulations? According to Levin et al. (1998), “topics involving issues of strongly held attitudes or high personal involvement are less susceptible to attribute framing effects.” (p.160). For instance, Marteau (1989) found no effects of framing abortion decisions, concluding that the topic involves strongly held attitudes. Others have argued that voters who consider immigration as important give more thought to immigration and will therefore be more affected by the frames (Knoll et al, 2011).

I test this by using a variable that asks respondents: *How important is immigration policy to you?* They answer either 1= very important, 2= important, 3=somewhat important, 4=slightly important, and 5=not important at all. I recode the variable to a dummy, taking the value 1 if respondents think immigration is very important, important, and somewhat important. It takes the value 0 if they find it slightly important or not important at all. Table 8 presents the interaction between the dummy variable measuring the importance of immigration policies and the treatment groups.

I find that those who view immigration policies as important are affected by framing about the *employment* rate of immigrants (60 percent). The added effect (0.037) shows that the respondents who view immigration policy as important prefer *stricter policies* when they receive information that the employment rate is 60 percent.

This result is in opposition to Levin et al. (1998) hypothesis and Marteau’s (1989) findings, that issues of strongly held attitudes are less susceptible to attribute framing effects.<sup>8</sup> On the other hand, with respect to Marteau’s (1989) study, abortion may be a topic involving a more *strongly held attitudes* than those of immigration policies.

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<sup>8</sup> My behavioral framing is closely related to attribute framing

**Table 10. Interaction effects: Importance of immigration policies**

	(8)
Dependent variable	<i>Policy preference</i>
Interaction variable	<b><i>Importance of immigration policies</i></b>
1. Unemployment ( $\beta_{x1}$ )	-0.075 (0.067)
Unemployment*Interaction variable ( $\beta_{x1}INT$ )	0.100 (0.070)
2. Employment ( $\beta_{x2}$ )	0.000 (0.065)
Employment*Interaction variable ( $\beta_{x2}INT$ )	0.037 (0.068)
3. Expense ( $\beta_{x3}$ )	-0.058 (0.067)
Expense*Interaction variable ( $\beta_{x3}INT$ )	0.086 (0.071)
4. Income ( $\beta_{x4}$ )	-0.009 (0.068)
Income*Interaction variable ( $\beta_{x4}INT$ )	0.027 (0.071)
5. Unempexpense ( $\beta_{x5}$ )	0.006 (0.062)
Unempexpense*Interaction variable ( $\beta_{x5}INT$ )	0.011 (0.066)
6. Empincome ( $\beta_{x6}$ )	0.006 (0.063)
Empincome*Interaction variable ( $\beta_{x6}INT$ )	0.011 (0.067)
Immigration important	-0.037 (0.056)
Constant	0.716*** (0.056)
Controls	Yes
r2	0.081
N	1087
p-value ( $\beta_{x1} + \beta_{x1}INT = 0$ )	0.231
p-value ( $\beta_{x2} + \beta_{x2}INT = 0$ )	0.073
p-value ( $\beta_{x3} + \beta_{x3}INT = 0$ )	0.216
p-value ( $\beta_{x4} + \beta_{x4}INT = 0$ )	0.406
p-value ( $\beta_{x5} + \beta_{x5}INT = 0$ )	0.449
p-value ( $\beta_{x6} + \beta_{x6}INT = 0$ )	0.426

## Chapter 6: Concluding remarks

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In light of the international refugee crisis and the increasing applications for asylum to Norway, this thesis has shed light on an important aspect of the immigration debate: the determinants of individual attitudes towards immigration, as well as how various types of information can affect these attitudes.

The thesis has showed that providing various types of negative and positive information about immigration may affect attitudes towards immigration. People are susceptible to negative framing emphasizing the costs of immigration, and specifically, behavioral information about the employment rate of immigrants in Norway, which is 60 percent, causes individuals to rate their preferences for immigration policy more strictly. This suggests that people react negatively to a seemingly low employment rate of immigrants.

While there are probably many factors that explain individual attitudes towards immigration, this thesis has attempted to activate the economic determinants and mechanisms. The results of the negative framing lends support to the notion that “losses loom larger than gains,” or loss aversion. In the words of prospect theory, people are more willing to forego the benefits of immigration than to bear the costs of it. There are however many other possible mechanisms, including the fiscal burden hypothesis or an anchoring effect. Further, conditional altruism and reciprocity may also explain why information about a seemingly low employment rate affects attitudes. Dependent on the behavior of immigrants, the conditional altruist will shape his or her attitudes towards them.

Lastly, my results implicate that various types of information may influence how people perceive immigration, and are accordingly important for policy outcomes and integration. The results show that the experimental design activates certain beliefs and preferences for immigration policy, and that framing causes a short-term change in preferences for immigration policy. However, the exact mechanisms that drive the results remain a question for future research.



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## Appendix A: Survey questions (in Norwegian)

Control group:



**Hvor stor kostnad eller gevinst vil du si at innvandring er for den norske velferdsstaten?**

- Svært stor kostnad
- Stor kostnad
- En viss kostnad
- Verken en kostnad eller en gevinst
- En viss gevinst
- Stor gevinst
- Svært stor gevinst


Treatment Unemployment:



**Som du kanskje vet ligger arbeidsledigheten blant innvandrere i Norge på rundt 7%. Hvis du tar dette i betraktning, hvor stor kostnad eller gevinst vil du si at innvandring er for den norske velferdsstaten?**

- Svært stor kostnad
- Stor kostnad
- En viss kostnad
- Verken en kostnad eller en gevinst
- En viss gevinst
- Stor gevinst
- Svært stor gevinst


Treatment Employment:



**Som du kanskje vet ligger sysselsettingen blant innvandrere i Norge på rundt 60%. Hvis du tar det i betraktning, hvor stor kostnad eller gevinst vil du si at innvandring er for den norske velferdsstaten?**

- Svært stor kostnad
- Stor kostnad
- En viss kostnad
- Verken en kostnad eller en gevinst
- En viss gevinst
- Stor gevinst
- Svært stor gevinst


## Treatment Expense:



**Som du kanskje vet fører arbeidsledighet blant innvandrere til en til en betydelig utgift for den norske velferdsstaten. Hvis du tar det i betraktning, hvor stor kostnad eller gevinst vil du si at innvandring er for den norske velferdsstaten?**

- Svært stor kostnad
- Stor kostnad
- En viss kostnad
- Verken en kostnad eller en gevinst
- En viss gevinst
- Stor gevinst
- Svært stor gevinst


## Treatment Income:



**Som du kanskje vet fører sysselsettingen av innvandrere i Norge til en betydelig inntekt for den norske velferdsstaten. Hvis du tar det i betraktning, hvor stor kostnad eller gevinst vil du si at innvandring er for den norske velferdsstaten?**

- Svært stor kostnad
- Stor kostnad
- En viss kostnad
- Verken en kostnad eller en gevinst
- En viss gevinst
- Stor gevinst
- Svært stor gevinst


## Treatment Unemployment+Expense:



**Som du kanskje vet ligger arbeidsledigheten blant innvandrere i Norge på rundt 7%. Dette fører til en betydelig utgift for den norske velferdsstaten. Hvis du tar det i betraktning, hvor stor kostnad eller gevinst vil du si at innvandring er for den norske velferdsstaten?**

- Svært stor kostnad
- Stor kostnad
- En viss kostnad
- Verken en kostnad eller en gevinst
- En viss gevinst
- Stor gevinst
- Svært stor gevinst


## Treatment Employment+Income:



**Som du kanskje vet ligger sysselsettingen blant innvandrere i Norge på rundt 60%. Dette fører til en betydelig inntekt til den norske velferdsstaten. Hvis du tar det i betraktning, hvor stor kostnad eller gevinst vil du si at innvandring er for den norske velferdsstaten?**

- Svært stor kostnad
- Stor kostnad
- En viss kostnad
- Verken en kostnad eller en gevinst
- En viss gevinst
- Stor gevinst
- Svært stor gevinst

## Policy preference:



**Hvor mild eller streng innvandringspolitikk synes du Norge bør ha?**

- Svært mild
- Mild
- Noe mild
- Verken mild eller streng
- Noe streng
- Streng
- Svært streng

## Importance of immigration policies:



**Hvor viktig er innvandringspolitikk for deg personlig?**

- Svært viktig
- Viktig
- Noe viktig
- Lite viktig
- Ikke viktig i det hele tatt



Fear of a new terror attack in Norway:



**I hvor stor grad er du redd for at vi skal oppleve et nytt terrorangrep i Norge?**

I svært stor grad   I stor grad   I noen grad   I liten grad   Ikke i det hele tatt

## Appendix B: Summary statistics, all variables

	Obs	Mean	Std. Dev.	Min	Max
<i>Dependent variables</i>					
View on immigration policy	1,087	0.705	0.186	0.143	1
View on cost of immigration	1,087	0.678	0.203	0.143	1
<i>Main controls</i>					
Male	1,087	0.511	0.500	0	1
Age, 18-29 years	1,087	0.102	0.303	0	1
Age, 30-59 years	1,087	0.552	0.498	0	1
Age, 60+	1,087	0.346	0.476	0	1
Education, primary/no	1,087	0.098	0.298	0	1
Education, secondary	1,087	0.296	0.457	0	1
Education, tertiary	1,087	0.605	0.489	0	1
Income	591	3.978	1.910	1	8
<i>Political parties</i>					
Kristelig Folkeparti	1,132	0.042	0.202	0	1
Høyre	1,132	0.227	0.419	0	1
Fremskrittspartiet	1,132	0.102	0.302	0	1
Venstre	1,132	0.051	0.220	0	1
Sosialistisk Venstreparti	1,132	0.061	0.239	0	1
Senterpartiet	1,132	0.051	0.218	0	1
Miljøpartiet De Grønne	1,132	0.035	0.184	0	1
Arbeiderpartiet	1,132	0.314	0.464	0	1
Rødt	1,132	0.029	0.168	0	1
Immigration politics important	1,138	0.707	0.174	.2	1
<i>Regions</i>					
Akershus	1,087	0.121	0.327	0	1
Oslo	1,087	0.157	0.364	0	1
Østfold	1,087	0.057	0.232	0	1
Vestfold	1,087	0.052	0.223	0	1
Hedmark	1,087	0.029	0.167	0	1
Oppland	1,087	0.024	0.156	0	1
Buskerud	1,087	0.056	0.230	0	1
Telemark	1,087	0.033	0.179	0	1
Vest-Agder	1,087	0.035	0.184	0	1
Aust-Agder	1,087	0.013	0.113	0	1
Rogaland	1,087	0.086	0.280	0	1
Hordaland	1,087	0.108	0.310	0	1
Sogn og Fjordane	1,087	0.014	0.117	0	1
Møre og Romsdal	1,087	0.044	0.206	0	1
Sør-Trøndelag	1,087	0.067	0.250	0	1
Nord-Trøndelag	1,087	0.022	0.147	0	1
Nordland	1,087	0.043	0.203	0	1
Troms	1,087	0.029	0.167	0	1
Finnmark	1,087	0.009	0.096	0	1
<i>Municipal size</i>					
Municipal size <10 000	1,087	0.179	0.384	0	1
Municipal size 10 001 - 20 000	1,087	0.149	0.357	0	1
Municipal size 20 001 - 60 000	1,087	0.232	0.422	0	1
Municipal size 60 000+	1,087	0.439	0.496	0	1

## Appendix C: Complete balance test

	Control	Unemployment	Employment	Expense	Income	Unemp+Expense	Emp+Income	Orthogonality test
Education, primary/no	0.092 (0.022)	0.120 (0.027)	0.096 (0.024)	0.103 (0.025)	0.091 (0.022)	0.120 (0.026)	0.063 (0.020)	0.724
Education, secondary	0.270 (0.034)	0.247 (0.035)	0.338 (0.038)	0.301 (0.038)	0.358 (0.037)	0.222 (0.033)	0.336 (0.040)	0.054
Education, tertiary	0.638 (0.037)	0.633 (0.039)	0.567 (0.040)	0.596 (0.041)	0.552 (0.039)	0.658 (0.038)	0.601 (0.041)	0.468
Age 18-29	0.122 (0.024)	0.111 (0.025)	0.117 (0.025)	0.115 (0.026)	0.074 (0.020)	0.067 (0.020)	0.130 (0.028)	0.341
Age 30-59	0.561 (0.037)	0.506 (0.039)	0.562 (0.039)	0.474 (0.040)	0.589 (0.037)	0.558 (0.039)	0.527 (0.041)	0.152
Age 60+	0.317 (0.035)	0.383 (0.038)	0.321 (0.037)	0.410 (0.040)	0.337 (0.036)	0.374 (0.038)	0.342 (0.039)	0.193
Gender	0.494 (0.037)	0.525 (0.039)	0.537 (0.039)	0.513 (0.040)	0.514 (0.038)	0.521 (0.039)	0.459 (0.041)	0.907
Income	4.082 (0.194)	4.036 (0.236)	4.091 (0.227)	3.711 (0.214)	4.010 (0.173)	4.047 (0.198)	3.659 (0.188)	0.066
Akershus	0.111 (0.023)	0.142 (0.028)	0.136 (0.027)	0.109 (0.025)	0.103 (0.023)	0.135 (0.027)	0.103 (0.025)	0.877
Oslo	0.200 (0.030)	0.160 (0.029)	0.173 (0.030)	0.103 (0.024)	0.131 (0.026)	0.141 (0.027)	0.178 (0.032)	0.205
Østfold	0.050 (0.016)	0.074 (0.021)	0.031 (0.014)	0.077 (0.021)	0.029 (0.013)	0.080 (0.021)	0.062 (0.020)	0.183
Vestfold	0.039 (0.014)	0.043 (0.016)	0.049 (0.017)	0.077 (0.021)	0.029 (0.013)	0.055 (0.018)	0.096 (0.024)	0.258
Hedmark	0.028 (0.012)	0.012 (0.009)	0.019 (0.011)	0.019 (0.011)	0.040 (0.015)	0.037 (0.015)	0.041 (0.016)	0.536
Oppland	0.033 (0.013)	0.019 (0.011)	0.037 (0.015)	0.032 (0.014)	0.006 (0.006)	0.018 (0.011)	0.034 (0.015)	0.015
Buskerud	0.050 (0.016)	0.056 (0.018)	0.049 (0.017)	0.071 (0.021)	0.057 (0.018)	0.037 (0.015)	0.075 (0.022)	0.860
Telemark	0.044 (0.015)	0.037 (0.015)	0.031 (0.014)	0.026 (0.013)	0.034 (0.014)	0.037 (0.015)	0.014 (0.010)	0.740
Vest-Agder	0.039 (0.014)	0.037 (0.015)	0.037 (0.015)	0.071 (0.021)	0.040 (0.015)	0.018 (0.011)	0.014 (0.010)	0.233
Aust-Agder	0.000 (0.000)	0.019 (0.011)	0.019 (0.011)	0.000 (0.000)	0.023 (0.011)	0.018 (0.011)	0.014 (0.010)	0.000
Rogaland	0.100 (0.022)	0.062 (0.019)	0.080 (0.021)	0.090 (0.023)	0.097 (0.022)	0.098 (0.023)	0.068 (0.021)	0.839
Hordaland	0.083 (0.021)	0.130 (0.026)	0.117 (0.025)	0.103 (0.024)	0.143 (0.027)	0.080 (0.021)	0.103 (0.025)	0.343
Sogn og Fjordane	0.006 (0.006)	0.012 (0.009)	0.019 (0.011)	0.013 (0.009)	0.017 (0.010)	0.018 (0.011)	0.007 (0.007)	0.392
Møre og Romsdal	0.056 (0.017)	0.056 (0.018)	0.043 (0.016)	0.019 (0.011)	0.034 (0.014)	0.055 (0.018)	0.048 (0.018)	0.507
Sør-Trøndelag	0.050 (0.016)	0.074 (0.021)	0.056 (0.018)	0.051 (0.018)	0.074 (0.020)	0.086 (0.022)	0.082 (0.023)	0.729
Nord-Trøndelag	0.011 (0.008)	0.019 (0.011)	0.019 (0.011)	0.045 (0.017)	0.040 (0.015)	0.006 (0.006)	0.007 (0.007)	0.098
Nordland	0.044 (0.015)	0.031 (0.014)	0.056 (0.018)	0.038 (0.015)	0.074 (0.020)	0.037 (0.015)	0.027 (0.014)	0.617
Troms	0.028 (0.012)	0.012 (0.009)	0.025 (0.012)	0.058 (0.019)	0.023 (0.011)	0.031 (0.014)	0.027 (0.014)	0.602
Finmark	0.028 (0.012)	0.006 (0.006)	0.006 (0.006)	0.000 (0.000)	0.006 (0.006)	0.012 (0.009)	0.000 (0.000)	0.000
Municipal Size < 10 000	0.167 (0.028)	0.198 (0.031)	0.185 (0.031)	0.199 (0.032)	0.177 (0.029)	0.196 (0.031)	0.151 (0.030)	0.919
Municipal Size 10 001	0.117 (0.024)	0.142 (0.028)	0.160 (0.029)	0.192 (0.032)	0.166 (0.028)	0.135 (0.027)	0.144 (0.029)	0.670
Municipal Size 20 001	0.222 (0.031)	0.216 (0.032)	0.216 (0.032)	0.212 (0.033)	0.240 (0.032)	0.252 (0.034)	0.267 (0.037)	0.395
Municipal Size 20 001	0.222 (0.031)	0.216 (0.032)	0.216 (0.032)	0.212 (0.033)	0.240 (0.032)	0.252 (0.034)	0.267 (0.037)	0.395
N	180	162	162	156	175	163	146	

	<b>p-value (control vs unemployment)</b>	<b>p-value (control vs employment)</b>	<b>p-value (control vs expense)</b>	<b>p-value (control vs income)</b>	<b>p-value (control vs unemp+expense)</b>	<b>p-value (control vs emp+income)</b>
Education, primary/no	0.417	0.911	0.747	0.973	0.406	0.334
Education, secondary	0.632	0.184	0.540	0.084	0.305	0.209
Education, tertiary	0.932	0.189	0.443	0.106	0.700	0.507
Age 18-29	0.750	0.889	0.847	0.129	0.082	0.831
Age 30-59	0.311	0.991	0.113	0.602	0.958	0.545
Age 60+	0.203	0.932	0.076	0.682	0.265	0.624
Gender	0.578	0.433	0.738	0.709	0.618	0.524
Income	0.881	0.975	0.201	0.784	0.900	0.119
Akershus	0.394	0.491	0.950	0.802	0.504	0.808
Oslo	0.343	0.520	0.012	0.082	0.147	0.616
Østfold	0.361	0.368	0.318	0.299	0.268	0.652
Vestfold	0.841	0.639	0.142	0.591	0.479	0.046
Hedmark	0.306	0.569	0.605	0.526	0.639	0.518
Oppland	0.387	0.853	0.948	0.059	0.383	0.964
Buskerud	0.819	0.979	0.435	0.766	0.549	0.354
Telemark	0.730	0.510	0.347	0.624	0.721	0.092
Vest-Agder	0.929	0.929	0.209	0.957	0.253	0.148
Aust-Agder	0.082	0.082	.	0.044	0.082	0.157
Rogaland	0.193	0.524	0.749	0.928	0.955	0.306
Hordaland	0.169	0.300	0.548	0.078	0.904	0.552
Sogn og Fjordane	0.511	0.280	0.494	0.306	0.282	0.883
Møre og Romsdal	1.000	0.599	0.075	0.334	0.989	0.758
Sør-Trøndelag	0.361	0.819	0.958	0.345	0.191	0.252
Nord-Trøndelag	0.575	0.575	0.067	0.086	0.617	0.682
Nordland	0.510	0.640	0.784	0.236	0.721	0.407
Troms	0.306	0.859	0.183	0.769	0.874	0.983
Finmark	0.117	0.117	0.024	0.104	0.303	0.024
Municipal Size < 10 000	0.462	0.655	0.451	0.794	0.479	0.695
Municipal Size 10 001 - 20 000	0.489	0.244	0.058	0.186	0.612	0.472
Municipal Size 20 001 - 60 000	0.891	0.891	0.813	0.692	0.526	0.351
Municipal Size 20 001 - 60 000	0.891	0.891	0.813	0.692	0.526	0.351

	<b>p-value (unemployment vs employment)</b>	<b>p-value (unemployment vs expense)</b>	<b>p-value (unemployment vs income)</b>	<b>p-value (unemployment vs unemp+expense)</b>	<b>p-value (unemployment vs empl+income)</b>
Education, primary/no	0.492	0.638	0.404	0.995	0.090
Education, secondary	0.080	0.293	0.032	0.604	0.095
Education, tertiary	0.236	0.510	0.141	0.649	0.576
Age 18-29	0.862	0.905	0.247	0.169	0.611
Age 30-59	0.318	0.572	0.130	0.348	0.711
Age 60+	0.246	0.617	0.386	0.875	0.464
Gender	0.824	0.833	0.849	0.954	0.250
Income	0.866	0.309	0.931	0.972	0.213
Akershus	0.873	0.376	0.276	0.855	0.294
Oslo	0.766	0.127	0.452	0.627	0.683
Østfold	0.082	0.924	0.061	0.848	0.665
Vestfold	0.792	0.208	0.474	0.618	0.073
Hedmark	0.653	0.624	0.109	0.155	0.124
Oppland	0.312	0.445	0.289	0.994	0.395
Buskerud	0.804	0.585	0.950	0.422	0.486
Telemark	0.760	0.561	0.892	0.991	0.189
Vest-Agder	1.000	0.188	0.888	0.308	0.189
Aust-Agder	1.000	0.082	0.780	0.994	0.737
Rogaland	0.518	0.348	0.229	0.227	0.811
Hordaland	0.737	0.452	0.724	0.143	0.463
Sogn og Fjordane	0.653	0.970	0.715	0.658	0.620
Møre og Romsdal	0.609	0.087	0.350	0.989	0.764
Sør-Trøndelag	0.500	0.403	0.994	0.696	0.792
Nord-Trøndelag	1.000	0.183	0.240	0.314	0.357
Nordland	0.276	0.713	0.073	0.768	0.857
Troms	0.411	0.029	0.462	0.256	0.351
Finmark	1.000	0.318	0.957	0.567	0.318
Municipal Size < 10 000	0.778	0.979	0.633	0.978	0.279
Municipal Size 10 001 - 20 000	0.643	0.231	0.547	0.855	0.963
Municipal Size 20 001 - 60 000	1.000	0.922	0.602	0.451	0.298
Municipal Size 20 001 - 60 000	1.000	0.922	0.602	0.451	0.298

	<b>p-value (employment vs expense)</b>	<b>p-value (employment vs income)</b>	<b>p-value (employment vs unemp+expense)</b>	<b>p-value (employment vs empl+income)</b>
Education, primary/no	0.835	0.887	0.481	0.296
Education, secondary	0.501	0.707	0.022	0.972
Education, tertiary	0.610	0.782	0.097	0.546
Age 18-29	0.958	0.183	0.122	0.734
Age 30-59	0.120	0.620	0.950	0.547
Age 60+	0.099	0.753	0.315	0.691
Gender	0.667	0.677	0.779	0.172
Income	0.224	0.778	0.883	0.144
Akershus	0.467	0.354	0.983	0.371
Oslo	0.069	0.293	0.433	0.904
Østfold	0.070	0.902	0.054	0.204
Vestfold	0.315	0.328	0.814	0.120
Hedmark	0.963	0.240	0.316	0.251
Oppland	0.808	0.050	0.308	0.895
Buskerud	0.430	0.752	0.578	0.351
Telemark	0.779	0.860	0.768	0.305
Vest-Agder	0.188	0.888	0.308	0.189
Aust-Agder	0.082	0.780	0.994	0.737
Rogaland	0.762	0.586	0.572	0.695
Hordaland	0.676	0.486	0.258	0.684
Sogn og Fjordane	0.683	0.924	0.994	0.357
Møre og Romsdal	0.219	0.673	0.618	0.843
Sør-Trøndelag	0.866	0.486	0.287	0.361
Nord-Trøndelag	0.183	0.240	0.314	0.357
Nordland	0.472	0.486	0.422	0.213
Troms	0.141	0.912	0.743	0.882
Finnmark	0.318	0.957	0.567	0.318
Municipal Size < 10 000	0.760	0.849	0.799	0.419
Municipal Size 10 001 - 20 000	0.459	0.897	0.518	0.685
Municipal Size 20 001 - 60 000	0.922	0.602	0.451	0.298
Municipal Size 20 001 - 60 000	0.922	0.602	0.451	0.298

	p-value (expense vs income)	p-value (expense vs unemp+expense)	p-value (expense vs emp+income)	p-value (income vs unemp+expense)	p-value (income vs emp+income)	p-value (unemp+expense vs emp+income)
Education, primary/no	0.726	0.629	0.221	0.393	0.357	0.083
Education, secondary	0.293	0.115	0.533	0.007	0.688	0.028
Education, tertiary	0.431	0.263	0.924	0.050	0.378	0.310
Age 18-29	0.206	0.140	0.698	0.808	0.104	0.068
Age 30-59	0.038	0.135	0.359	0.575	0.274	0.588
Age 60+	0.171	0.512	0.225	0.478	0.920	0.562
Gender	0.979	0.878	0.350	0.895	0.324	0.273
Income	0.278	0.252	0.856	0.890	0.170	0.157
Akershus	0.857	0.479	0.861	0.365	0.997	0.382
Oslo	0.415	0.294	0.060	0.796	0.254	0.378
Østfold	0.053	0.925	0.602	0.039	0.163	0.535
Vestfold	0.053	0.438	0.560	0.226	0.015	0.181
Hedmark	0.263	0.342	0.271	0.879	0.961	0.847
Oppland	0.085	0.440	0.916	0.291	0.078	0.391
Buskerud	0.622	0.184	0.872	0.377	0.518	0.146
Telemark	0.645	0.567	0.455	0.901	0.222	0.192
Vest-Agder	0.230	0.025	0.013	0.237	0.139	0.742
Aust-Agder	0.044	0.082	0.157	0.774	0.539	0.742
Rogaland	0.818	0.797	0.495	0.975	0.352	0.346
Hordaland	0.264	0.481	0.996	0.064	0.274	0.487
Sogn og Fjordane	0.746	0.688	0.599	0.930	0.391	0.359
Møre og Romsdal	0.395	0.089	0.170	0.356	0.544	0.773
Sør-Trøndelag	0.388	0.222	0.285	0.696	0.794	0.907
Nord-Trøndelag	0.827	0.030	0.035	0.036	0.044	0.938
Nordland	0.156	0.938	0.591	0.131	0.052	0.639
Troms	0.112	0.243	0.191	0.658	0.797	0.864
Finnmark	0.318	0.157		0.528	0.318	0.157
Municipal Size < 10 000	0.618	0.957	0.273	0.653	0.524	0.290
Municipal Size 10 001 - 20 000	0.531	0.168	0.261	0.430	0.590	0.823
Municipal Size 20 001 - 60 000	0.537	0.399	0.260	0.806	0.580	0.756
Municipal Size 20 001 - 60 000	0.537	0.399	0.260	0.806	0.580	0.756