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Willingness to Pay for Sustainable Funds

Does Reverse Labelling and Moral Appeals Increase Demand for Sustainable Investments?

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Abstract

This thesis seeks to determine if there is a willingness to pay for sustainable funds and if it is possible to influence the willingness to pay through a reverse label- and a moral treatment. The study also investigates the impact of the demographic factors age, gender, income, education, and knowledge.

We study this topic by gathering data from an experimental survey sent to customers of Storebrand in Norway. The sample of 400 respondents is exposed to the treatments in a 2x2 between subject design. The willingness to pay is determined through a hypothetical question where the respondents are asked what they are willing to pay in management fee for a sustainable fund, and still prefer this over an otherwise comparable non-sustainable fund with a management fee of 1%. With standard labelling they are reporting their willingness to pay for “Global sustainable” compared to “Global”. With reverse labelling they are reporting their willingness to pay for “Global” compared to “Global non-sustainable”. The moral treatment consists of a moral text before the question of willingness to pay.

The results suggest that there is a willingness to pay for sustainable funds, and that this willingness can be increased by exposing respondents to a combination of both treatments. Furthermore, the moral treatment is effective in increasing the probability of the respondents being willing to pay. In total, the number of respondents who had a willingness to pay for sustainable funds was 34% in the control group. This number increased to 49% for the groups who were exposed to a treatment. Receiving the combination of both treatments almost tripled the willingness to pay for sustainable funds as the average management fee people accepted went from 1.25% to 1.69%, an increase of 0.44 percentage points. The demographic factor of having a gross annual salary of more than 700,000 NOK is showed to have a negative correlation with willingness to pay for sustainable funds. However, gender, education, and knowledge were not significant, and neither was age when removing outliers.

Table of Contents

1.	INTRODUCTION.....	1
2.	LITERATURE REVIEW	3
2.1	THE FINANCIAL PERFORMANCE OF SRI FUNDS.....	4
2.2	SRI BELIEFS	5
2.3	SRI CHOICES	6
2.4	SRI DEMOGRAPHICS	8
2.5	INCREASING DEMAND FOR SRI	8
3.	THEORETICAL FRAMEWORK.....	10
3.1	STANDARD FRAMEWORK	10
3.2	EXTENDED MOTIVATION.....	11
3.3	NUDGING AND PROSPECT THEORY	11
4.	THE EXPERIMENT.....	13
4.1	EXPERIMENTAL DESIGN	13
4.2	TREATMENTS.....	15
4.3	DESCRIPTIVE STATISTICS	16
5.	HYPOTHESES	19
6.	METHODOLOGY	21
6.1	OLS AS AN ESTIMATOR.....	21
6.2	THE OLS MODELS.....	22
7.	RESULTS	24
7.1	RESULTS FROM WTP FOR SRI.....	24
7.2	TREATMENT RESULTS	25
7.2.1	<i>Regression Models with WTP for SRI.....</i>	<i>27</i>
7.2.2	<i>Regression Models with Positive WTP for SRI.....</i>	<i>30</i>

7.3	DEMOGRAPHIC RESULTS	34
7.4	INTERACTION RESULTS.....	39
7.5	RESULTS FROM ATTITUDE PARAMETERS.....	41
8.	DISCUSSION	44
8.1	MAIN FINDINGS	44
8.2	LIMITATIONS	47
8.3	TOPICS FOR FURTHER RESEARCH	50
9.	CONCLUSION.....	51
10.	REFERENCES.....	52
11.	APPENDIX	55
11.1	APPENDIX 1: COMPLETE SURVEY.....	55

Table of Tables

Table 1: Descriptive Statistics	17
Table 2: Mean Estimation of Impact, Return, Risk and Variance of the Return	18
Table 3: One-sample t-test for WTP for SRI in Control Group	24
Table 4: Two-sample t-test with Equal Variances on Treatments	26
Table 5: Regression Models with WTP for SRI as Dependent Variable	29
Table 6: Regression Models with Positive WTP for SRI as Dependent Variable	32
Table 7: Two-sample t-test with Equal Variances on Treatments (Positive WTP Only)	33
Table 8: WTP for SRI by Groups	34
Table 9: Two-sample t-test with Equal Variances on Higher Education	37
Table 10: Regression Models for Treatment Effects on Different Variables	40
Table 11: Mean Estimation of Importance and Trust	41
Table 12: Two-sample t-test with Equal Variances on Gender Differences	43

Table of Figures

Figure 1: Picture of Survey with Both Treatments	15
Figure 2: Histogram of WTP for SRI in Control Group	25
Figure 3: Mean of Management Fee for SRI	26
Figure 4: Mean of WTP for SRI by Income	35
Figure 5: Scatterplot WTP for SRI and Income	35
Figure 6: Mean WTP for SRI of Men and Women	35
Figure 7: Scatterplot WTP for SRI and Age	36
Figure 8: Scatterplot WTP for SRI Under 4% and Age	36
Figure 9: WTP for SRI by Education	37
Figure 10: Mean of WTP for SRI by Knowledge About Investing	38
Figure 11: Scatterplot WTP for SRI and Knowledge About Investing	38
Figure 12: Mean of WTP for SRI by Importance of Sustainability	42
Figure 13: Scatterplot WTP for SRI and Importance of Sustainability	42
Figure 14: Mean of WTP for SRI by Trust in SRI Ratings	43
Figure 15: Scatterplot WTP for SRI and Trust in SRI Ratings	43

1. Introduction

The UN has set 17 sustainable development goals that were created to stop climate change, fight inequality, and eradicate poverty (United Nations, 2021). These goals are supposed to be met by 2030, but we are currently behind schedule. According to *The Sustainable Development Goals Report* by United Nations (2021), the progress made in inequality has reversed, and emission of greenhouse gasses reached an all-time high in 2020. One way for private investors to contribute towards sustainable development is by engaging in *socially responsible investing* (SRI). “SRI is an investment process that integrates social, environmental, and ethical considerations into investment decision making” (Renneboog et al., 2008).

Today’s investments are contributing towards the global increase in temperature, which in turn will have catastrophic consequences for the planet; it is therefore crucial that banks and investors do their part, and invest more sustainably (WWF, n.d.). A total of 71% of greenhouse gas emissions come from 100 active fossil fuel producers where 59% of the companies are state owned, 32% public investor owned, and 9% private investor owned (Carbon Disclosure Project, 2017). Thus, private investors in fossil fuel companies are estimated to carry influence over 6.4% of the world’s greenhouse gas emissions. This is one example of how a private investor’s choice of investment carries influence. Everyone is a participant in the financial system, therefore, we all carry some responsibility for the way it affects what kind of products get made and which part of the economy thrives (Fremtiden i våre hender, n.d.). Nevertheless, investors often put financial gain above environmental and societal factors.

There is a huge sustainability potential in making financial markets more accountable for the impact they have on the world (Talan & Sharma, 2019). Of the fund universe globally, it is estimated that only about 2% are SRI funds (Morningstar, 2016). A report from *The Financial Supervisory Authority of Norway* looked at both mutual funds and alternative investment funds in the Norwegian market. Out of the 570 funds in the report, 20 was listed as green funds and 14 as socially sustainable funds, which amount to a total of 6.0% (Finanstilsynet, 2021). These results provide some indication on how small the percentage of sustainable funds is in Norway. However, the number of advertised sustainable investment alternatives is on the rise, particularly green products (Finanstilsynet, 2021).

To efficiently move towards a more sustainable future, we believe that it is important for people to invest sustainably. Therefore, we will look at people's investment decisions regarding SRI by conducting a survey. Our main goal is to find out whether there is *willingness to pay* (WTP) for SRI alternatives, and if we through a treatment can increase the WTP for SRI. The main research question of the thesis is formulated as follows:

Are people willing to pay for sustainable investment, and what factors impact this decision?

The first treatment we want to investigate is *reverse labelling*. This treatment looks at whether people have a higher WTP for sustainable funds when non-sustainable funds are explicitly labelled as that, and sustainable funds appear without a label. When looking at a fund provider's website today, one will find funds both with and without sustainability labels in the fund name. Typical sustainability labels employ words like green, responsible, renewable, and sustainable. The funds that have a sustainability label are those who claim to have an SRI profile. Thus far, we have never seen a fund directly labelled as non-sustainable.

The second treatment we find interesting is a moral appeal. We choose to include this treatment because we want to investigate if people are affected by a moral reminder when faced with a sustainable alternative in their investment decision. When looking at current practices of fund providers with regards to the information they offer on SRI funds, we interpret it as mainly informational and not particularly infused with morality. It looks like the main priority of fund providers is providing alternatives to every type of investor, not steering customers in any specific direction. Additionally, we want to investigate demographic differences with regards to WTP for SRI, and different attitudes and beliefs people have about investment and sustainability.

The structure of the thesis is as follows: Firstly, we will examine previously published literature and relevant research on the topic. Then we will go through the theoretical framework the thesis is based on, followed by a walkthrough of the experimental survey and the hypotheses. After this, we present the method used in the analysis and the results from the analysis. Lastly, we present the discussion and the conclusion.

2. Literature Review

This section examines previous research regarding SRI funds. Relevant research is reviewed to be able to compare and specify potential differences with the results of this thesis. We first provide an overview of the current situation of the fund market, before looking into the financial performance of SRI. Subsequently, people's beliefs regarding SRI, and factors that affect their choice of SRI is investigated. Finally, we look into if SRI investors have any demographic distinctions, and how previous literature has approached increasing the demand for SRI.

The elements incorporated into the SRI process are often referred to as *ESG* factors, which stands for environmental, social, and governance (Hoque, 2020). The first factor concerns the evaluation of companies' environmental impacts like greenhouse gas emission and water usage. The social factor incorporates subjects like human rights, equality, and labour practices. Lastly, the governance factor focuses on areas like board independence, diversity in leadership positions, as well as compensation- and anticorruption practises.

As of 2021, there are 29 management companies for mutual funds in Norway, providing 434 mutual funds (Finanstilsynet, 2022). The capital invested in the Norwegian fund market has more than tripled the last decade, and amounted to 1,809 billion NOK in 2021 (Verdipapirfondenes Forening, 2022). Of this sum, 710 billion NOK belonged to Norwegian private investors. It is reported that 40% of the Norwegian population over the age of 18 invest in mutual funds, not taking into account pension funds from employers (Opinion, 2020).

As previously mentioned, only approximately 2% of mutual funds globally is estimated to be invested in SRI. A fund can perform well with regards to sustainability, without being labelled as an SRI fund. For example, if we look at funds that are not necessarily labelled as SRI funds but that have a 5-globe sustainability rating on Morningstar, this is about 7.8% of Morningstar's 27,009 funds as of 25th of April 2022 (Morningstar, 2022). To obtain a 5-globe rating, the fund must be among those with the highest ESG-score.

The Financial Supervisory Authorities of Norway gets the lower estimate of 6.0% of funds being green or socially responsible when asking for self-reported numbers from managing companies in Norway (Finanstilsynet, 2021). Approximately 3.5% of the total fund capital in the report was invested in these green and socially responsible funds. The capital invested in

these funds is lower than the percentage of such funds; therefore, these are not large funds on average. The fund management companies might have been careful when reporting to the authorities, but this is an indication of the Norwegian SRI market size. In all, the fund market is large, but the portion of SRI appears to be small.

2.1 The Financial Performance of SRI Funds

It might make intuitive sense to assume that funds with the added constraint of having to take SRI criteria into account, may suffer from lower risk-adjusted *return on investment* (ROI). Unless a conventional fund would choose the same portfolio based on purely financial criteria, the SRI fund has limitations that makes it unable to diversify to the same degree. To get a better picture of the real-world financial performance of SRI funds compared to conventional funds, we have reviewed some articles that investigate this.

Auer and Schuhmacher (2016) examine the financial performance of SRI in the Asia-pacific region, Europe, and the US. They did not find any evidence to support that ESG-based strategies in Europe are better than conventional investment strategies. They found that investors in the European market may have to pay a premium when choosing socially responsible stocks, though only in some industries and for some of the ESG-criteria. However, they also found that SRI investors can get a similar ROI as the general market in the Asia-pacific region and the US.

A meta-analysis from Revelli and Viviani (2015) look at 85 studies that in total comprised of 190 experiments related to the link between financial performance and SRI in Europe. They use aggregated results from the past 20 years of study to overcome the lack of consensus in the research field. This article claims to identify that there is no difference in financial return, either positive or negative, when choosing SRI, and that the differences found by researchers comes from the varying methods used.

Statistical difference in the financial performance of conventional funds and SRI funds were only found under some specific conditions, but does not seem to be the case in general. It does not seem like choosing an SRI profile is a significant strength or weakness with regards to ROI.

2.2 SRI Beliefs

People's beliefs about SRI can be an important explanatory factor for their choice of including SRI in their investments. Therefore, we reviewed the literature investigating whether people trust SRI and their perceptions regarding the risk and financial performance of SRI funds, and whether these beliefs affect people's investment behaviour.

The belief people have about the financial performance of SRI might differentiate over time and when looking at different populations. An article by Wins and Zwergel (2016) with data from 421 German investors found that the majority of the investors in their survey believed that SRI funds has lower financial return than conventional funds. The article divided the sample into three groups: one containing SRI investors and two containing non-SRI investors. A slight majority of the SRI investors group did believe that SRI had a higher or similar return. However, they did not find significance in their regression for whether belief about financial return mattered for investor behaviour.

An older article by Nilsson (2008) analysed the response from a survey consisting of 528 private investors in Sweden. He found that people's belief about financial return is significant when making an investment decision regarding SRI. This differs from findings in the previous article by Wins and Zwergel (2016). Specifically, Nilsson (2008) found a positive correlation in his regression between believing SRI funds has higher or similar return, and the likelihood of choosing a higher percentage in SRI in your investments.

Another aspect that is interesting to look at when investigating factors that impact investment behaviour, is people's perception of how risky SRI funds are. Apostolakis et al. (2016) did a study of pensions in the Dutch healthcare sector consisting of 985 complete questionnaires. They found that the perceived risk is higher for an SRI portfolio compared to a conventional one. Findings from Wins and Zwergel (2016) suggest that SRI funds, compared to conventional funds, are generally perceived as of equal risk or a little bit riskier. The two groups of non-SRI investors perceive SRI as riskier than the group of SRI investors. However, they did not find significance on this belief impacting investor behaviour.

A factor one might think will influence the investment decision in SRI is whether a person trust the SRI claims of fund providers or not. However, neither the study by Nilsson (2008) nor Wins and Zwergel (2016) found a significant relationship between trust, and investing in SRI. Having examined the impact trust have on investment behaviour, it is also interesting to

investigate whether people should trust the SRI claims of fund providers. A study by Utz and Wimmer (2014) examines a large sample of US mutual funds with regards to their ethical and financial performance. They found that by investing in SRI mutual funds, one can avoid the most unethical firms, but that the evasion of every unethical firm is not guaranteed. In their conclusion they say “[...] SRI appears to have become more of a sales pitch than a reliable path to accomplish ethical preferences” (Utz & Wimmer, 2014).

However, in a study of US equity funds by Kempf and Osthoff (2008) they found that SRI funds score significantly higher when ranked with regards to ethics compared to conventional funds. Additionally, a more recent article by Nitsche and Schröder (2018) focuses exclusively on the ethical performance of funds. They use ESG ratings from three different rating agencies and analyse differences between funds by the funds top ten holdings. From their regression they found that SRI funds do have a significantly higher average ESG score than conventional funds.

There seem to be some consensus that people generally believe that SRI funds are at best similar to conventional funds in terms of risk and financial performance. However, there does not seem to be much significance between beliefs in the financial performance of SRI funds and investment behaviour. The exception is one article that found a significant correlation between the belief of good financial performance and the likelihood of investing in SRI. The articles conclude differently regarding SRI funds actual ethical performance, but two out of three studies found SRI to have a higher ethical performance than conventional funds.

2.3 SRI Choices

To better understand the WTP for SRI, we look at articles that have investigated this subject. An important factor is also the motivation behind the choice of SRI, such as financial gain or acting morally. In addition, there might be specific elements within SRI that influence the likelihood of choosing it.

Previous research has found that when given an alternative between a conventional portfolio and a SRI portfolio, approximately 55% of respondents prefer the SRI portfolio (Apostolakis et al., 2016; Borgers & Pownall, 2014). Apostolakis et al. (2016) found in his study of pensions in the Dutch healthcare sector, that 34.7% of respondents would make the choice of paying extra for such a portfolio. This means that the majority responded negatively to paying extra

for an SRI portfolio. The study also found that people with higher risk tolerance had a higher WTP for SRI. Additionally, the more involved respondents were in their pension investment portfolio, the higher the likelihood of them being willing to pay extra.

An article by Døskeland and Pedersen (2016) looked at whether different framings affected the interest of investors. They did this by conducting a natural field experiment where 142,073 people received differently framed information in an email newsletter and investigated how many clicked on a link taking them to the website for further information. They found that when a fund is framed as morally good, more people clicked on further information than in the control group without framing. However, Døskeland and Pedersen (2016) also tested another framing they called wealth framing. This was when they framed responsible investment as a financially attractive option. Even though the moral framing had an effect, the wealth framing was even more effective compared to the control group without framing.

When Apostolakis et al. (2016) looked at the most important criteria for choosing pension funds, they found that the financial criteria was the most important on average. Following this, the second and third most important criteria were healthy aging and working and living conditions. When they looked at preferences within positive screening (that is, when fund managers select companies with high ESG focus to include in the portfolio), employee relationships and sustainability was of the highest importance to respondents. When they looked at preferences in the opposite scenario of negative screening (that is, when fund managers exclude companies engaging in undesirable activities from the portfolio), they found that human rights violations and avoiding investment in the weapons industry was the most important to respondents.

From the literature it seems that the majority of people prefer a portfolio with an SRI strategy, but only about a third was willing to pay for it. The financial criteria seem to be the dominating factor of the decision making, but people also seem more likely to choose an option when it is labelled as SRI. There also appear to be elements within SRI that people find more important than others. Presenting SRI portfolios as financially good alternatives seem to be of particularly high importance.

2.4 SRI Demographics

It is possible that different demographic groups invest differently. Previous research seems to agree that people with higher education, and women rather than men are more likely to invest in SRI (Escrig-Olmedo et al., 2013; Junkus & Berry, 2010; Nilsson, 2008). Additionally, Dorfleitner and Nguyen (2016) found that somewhat younger people and women with higher education invest more in SRI. When it comes to income and age, Nilsson (2008) found no statistical significance, while Escrig-Olmedo et al. (2013) found that SRI investors are mostly middle-aged and with average income. Berry and Yeung (2013) looked at a sample of investors in possession of an ethical portfolio and found that those with a salary over £75,000 were in general less willing to sacrifice the financial improvement of their investment for a moral one.

Contrary to these findings, Lagerkvist et al. (2020) did not find any support for sociodemographic characteristics affecting the respondents' preference for SRI funds in a sample of Swedish private investors. When looking at the weighing of different elements within SRI, Apostolakis et al. (2016) found that women on average assign greater importance to all SRI and impact criteria except human rights violations, which men and women seem to value the same. They did not find a significant difference in gender preferences on the financial criteria.

With one exception, the reviewed literature found that SRI investors have certain demographic characteristics. There is some disagreement in the literature with respect to which are the distinctive characteristics of SRI investors, but the consensus is that higher educated people and women are more likely to invest in SRI.

2.5 Increasing Demand for SRI

In this section we want to look at how previous studies have tried to increase peoples WTP for SRI and whether their treatments were successful.

In addition to investigating the number of clicks in an email newsletter, Døskeland and Pedersen (2016) also looked at actual investment portfolios changes in a sample of 142,073 customers of a Norwegian bank. They found that wealth framing was more effective than moral framing in getting people to choose a sustainable fund. The investors who received

information with wealth framing bought 21% more green funds than the ones who received the morally framed information. However, both treatments were effective compared to the reference group without framing. This study indicates that when trying to get people to choose SRI, giving options that seem financially good is more effective than convincing them of the moral virtue of the fund.

A field experiment by Heeb et al. (2022) look at the WTP for SRI and a treatment that tested whether the WTP increases when the real-world impact of the SRI was increased. In their sample of 118 investors, they found that this treatment did not significantly increase the WTP for sustainable investments. They state that actual real-world impact appears less important than the warm glow effect, and that high real-world impact only works when people can compare different investment choices with varying real-world impact.

Something to consider when estimating WTP from hypothetical questions is the presence of a hypothetical bias. Respondents are generally prone to overestimate their willingness to pay for a product when the question is hypothetical and not tied to an actual cost. In a meta-analysis by Schmidt and Bijmolt (2020) the magnitude of the hypothetical bias was estimated to be about 21%.

Our contribution to the existing literature is mainly to contribute further data on the WTP for sustainable funds based on a new dataset sampled in Norway in 2022. We also provide research about increasing the WTP through our treatments, specifically a reverse label treatment and a moral treatment. Lastly, we contribute to the pool of knowledge regarding demographic differences of SRI investors, and which beliefs and attitudes people have with regards to SRI.

3. Theoretical Framework

In this section we will introduce the theoretical framework used in this paper. We look at the standard economic framework, then we go further into the deviations of this framework through behavioural economics. The theories discussed are extended motivation, nudging and prospect theory.

3.1 Standard Framework

The standard economic model of expected utility builds on *Homo Economicus*, or *the Economic Man* (Mullainathan & Thaler, 2000). This is an individual that has perfect information, always acts rationally, and has an unlimited ability to process information to perfectly maximize personal utility. In addition, the Economic Man is selfish and only gains utility from their own absolute payoff.

Standard economic theory explain that narrow self-interest will lead to underprovision of public goods such as fresh air and a healthy climate, since people are tempted to free ride by letting others pay for the public good and still reap the benefits (Meier, 2006). However, countless of studies have shown that the standard theoretical framework cannot fully explain behaviour in public good games, as people free ride less often than the model predicts.

Relying on the standard economic framework, one could also reason that no one should invest in SRI, since a healthy climate is a public good, and conventional funds are at least not worse in terms of risk-adjusted returns. A public goods is where one person's consumption does not reduce the availability of the good to other people, and one cannot easily exclude people from consuming said good. In a public goods game, the overall best solution for everyone is when everyone contributes fully (Wilkinson & Klaes, 2018, p. 412). However, the equilibrium solution assuming narrow self-interest of the standard model, is that nobody contributes towards the public good. Everyone's personal best outcome is when they are not contributing, but will still be able to consume the good. Of course, when everyone does this there is no public good. The fact that some people do invest in SRI, is thus inconsistent with the standard economic model. Hence, there must be some explanation beyond narrow self-interest, potentially related to extended motivation.

3.2 Extended motivation

Several studies in the field of behavioural economics have found that people are motivated by other factors than pure self-interest, and can get utility from acting pro-socially (Meier, 2006). This is called extended motivation, and with this theory it is possible to explain why people might make contributions towards public goods, even without personal gain. Such a theory can explain why some people would choose SRI even at an additional cost. In his paper, Meier (2006) divides the pro-social behaviour theory into three categories based on outcome, reciprocity, and self-identity. In this paper we will focus on the outcome- and self-identity-based theories as these are the ones relevant for the thesis.

Pro-social behaviour based on outcome focuses on how the utility of other people influence one's own utility (Meier, 2006). This means that someone gets utility by increasing the well-being of others. However, this increase in utility can have different causes. One's utility might increase directly from the positive impact one has on someone else's well-being; this is known as pure altruism. One can also gain utility from impure altruism, which is when the utility comes from the feeling one gets from helping other people, often called a "warm glow". Lastly, based on the assumption that the relative income distribution is important, one can get utility from evening out an existing inequality.

Pro-social behaviour based on self-identity is explained by people doing something to the benefit of others because such actions are in line with their perception of themselves (Meier, 2006). Thus, someone who thinks of themselves as a good person, will want to confirm this by acting in accordance with their self-image. This differs from the outcome based pro-social behaviour, because they do not necessarily care about the outcome of their action, as long as the action reflect how they see themselves.

3.3 Nudging and Prospect Theory

A nudge is a small change in the choice architecture that affects peoples' behaviour in a predictable way without limiting their choices or significantly changing their economic incentives (Thaler & Sunstein, 2021, p. 8). Nudges are a helpful tool to change people's behaviour while still maintaining their autonomy to choose. An example of a nudge is changing the default option of organ donation in a country. As shown by Johnson and Goldstein (2004), the amount of organ donors in countries where organ donation is an opt-out

choice is dramatically higher than in countries where it is as an opt-in choice. People are still free to choose as they wish but changing the default option affects people's behaviour. However, the increased sugar tax implemented in Norway in 2018 is not considered a nudge because there is an actual change in the price consumers must pay.

Kahneman and Tversky (1979) introduced an alternative to the standard economic model of expected utility which they call prospect theory. This theory is a model for how people make decisions under uncertainty and involves three main elements. The first element is that people use reference points when making decisions. The second element of prospect theory is that people are risk seeking in the loss domain and risk averse in the gain domain. This means that if something is framed as a loss, people are willing to accept more risk to avoid the possibility of a worse outcome than the reference point, as opposed to a similar increase framed as a gain. The third element of prospect theory is the concept of loss aversion. This means that when moving away from the reference point, losses loom larger than gains.

One way to nudge people is by using framing effects in the choice menu. Framing can be used to make an option appear morally superior, or make the other option appear morally subpar. In addition, with an uncertain outcome one can frame the possibilities as either gains or losses. An example from Kahneman and Tversky (1981) is that people react differently to identical outcomes framed differently. They framed one scenario as: 1/3 chance that 600 people will be saved and a 2/3 chance of nobody being saved. This is the scenario framed as a gain; people are being saved. The other framing described the scenario as: 1/3 chance of nobody dying and a 2/3 chance of 600 people dying. The probability of each outcome is the same, but when framed as a loss Kahneman and Tversky (1981) argue that people are more risk seeking as they do not want to incur a loss. In this way, framing can be used to influence choices in the form of a nudge.

4. The Experiment

All data in this thesis is based on a survey that we designed. In cooperation with Storebrand ASA the survey was sent out to 20,000 of their customers living in Norway through Norstat. The respondents who received the survey could respond either on their phone, computer, or a different smart device. The survey was distributed on the 25th of April and ended on the 5th of May 2022. Everyone received at least one reminder to participate in the survey. When the data collection period was over, Norstat first sent the already anonymised data to Storebrand, who then sent the data to us. The complete survey is located in appendix 1.

4.1 Experimental Design

Because the survey was sent out to a sample of the Norwegian population, it is written in Norwegian to make it as easy and understandable as possible for the respondents. The survey consists of 16 questions in total and is structured into four parts. At the start of the survey, respondents are given an informational text about who the survey is sent out by.

In the first part about background information, we ask general demographic questions about age, gender, education level and gross income. We also ask the respondents about their history of investing in stocks and funds, and whether they currently have an active saving in stocks or funds. Finally, respondents report how much they know about stocks and funds, on a scale from 1 to 7.

The second part of the survey consists of an informational text where we explain the concepts of return on investments and management fee. Examples are also included to maximize understanding. After reading this educational information, the respondents are met with a control question. This question serves as both a reminder and encouragement to put an effort into understanding the information given. It is also an indicator of how well the sample understands the concepts presented.

The third part is the experimental part of the survey. There are four different versions of the investment question which was randomized between participants. We will go into details of the treatments in section 4.2.

Lastly, in the fourth part, the respondents are first questioned about attitudes. The questions we ask is how important sustainability is for them, whether they prioritise it and if they trust a

funds sustainability rating. Then we inquire about their beliefs towards the financial performance of sustainable funds. The questions we ask the respondents, are what impact they think choosing sustainable options in the store has compared to sustainable investment. We also ask how they perceive sustainable funds in comparison to non-sustainable funds with regards to return, risk and variation of the return.

The questions about attitudes and beliefs are asked after the experimental part of the survey. This means that if the respondent received a treatment, the answers to these questions might also have been affected by the treatment they received. In these instances, the treatment will make the answers biased and they will not fulfil the requirements of good control variables. “Good controls are variables that we can think of having been fixed at the time the regressor of interest was determined” (Angrist & Pischke, 2009, p. 64). According to them, bad controls that do not fulfil this requirement should be excluded from the regression, and we adhere to this advice. We included these questions after the treatment text since we found it was better that these answers might have been affected by a possible treatment, rather than the possibility of respondents having been affected by attitude questions before the experimental part of the survey. One reason why we believe the experimental part would be affected by these attitude questions, is that people generally want to be consistent in their answers. Therefore, if the respondent had already been asked about their attitude towards sustainability, the attitude might already be set before being exposed to a possible treatment and asked to determine their WTP for sustainable funds.

In the survey we briefly explain what we refer to when using the term “sustainability”. The information the respondents get is that sustainability includes all three ESG factors. This is because we want to remind them that sustainability contains more than environmental issues. We have also chosen to consistently use the term sustainable funds in the survey as we believe this to be more understandable than the term SRI. However, our theoretical basis is from research on SRI funds.

The format of the questions is either self-entry textboxes or multiple choice. The different multiple-choice alternatives we use are: Yes/No, Lower/Equal/Higher and a scale from 1 to 7 where 1 is defined as “None” and 7 as “High”. With regards to annual gross income, we also have a multiple-choice list with intervals of 100,000 NOK and end options being below 300,000 NOK and 1,000,000 NOK and above.

4.2 Treatments

The survey includes two different treatments. We refer to them as a reverse label- and moral treatment. We explore these treatments in a 2x2 between subject design, and the survey respondents are therefore randomly allocated into four groups. The first group (G1) are those who did not receive any of the treatments, this is therefore the control group. The second group (G2) are those who were exposed to the reverse label treatment, but not the moral treatment. The third group (G3) are those who were exposed to the moral treatment, but not the reverse label treatment. Lastly, the fourth group (G4) are those who were exposed to both treatments. A picture of how the treatment text looked in the G4 group can be found in Figure 1. The first paragraph is the moral treatment text, and in the second half of the text one can see that the labels of the funds are reversed.

Ved kjøp av fond som ikke er bærekraftige kan du ende opp med å støtte uakseptable industrier og forretningspraksiser som er skadelig for miljøet eller profiterer på krig og menneskelig lidelse. Dette er fordi forvalteren ikke trenger å ta andre hensyn enn de finansielle.

Tenk deg følgende situasjon der du skal velge mellom to fond:

De to fondene er "Global Ikke-bærekraftig" og "Global".
Begge fondene har hatt en historisk avkastning på 8.0%.
Fondet "Global Ikke-bærekraftig" har en forvaltningskostnad på 1.0%.

Hvor mye er DU maksimalt villig til å betale i forvaltningskostnad for "Global" og fremdeles foretrekke dette fondet fremfor "Global Ikke-bærekraftig"?

Skriv desimaler med punktum

%

Powered by QuenchTec

Figure 1: Picture of Survey with Both Treatments

The groups exposed to standard labelling (G1 and G3) were asked how much they would maximally pay in management fee for a fund named “Global Sustainable”, and still prefer this to a fund named “Global” that has the same historical return of 8% and a management fee of

1%. On the other hand, the groups exposed to the reverse label treatment (G2 and G4) were asked how much they would maximally pay in management fee for a fund named “Global” and still prefer this to a fund named “Global Non-sustainable”. The point is to label the “bad” option as bad, instead of labelling the “good” option as good. The intention is to change the frame of the question, in this case the label, without changing the content of the question.

The moral treatment, received by G3 and G4, is where the groups were introduced to a text that was morally charged in a negative and personal way, before asking the respondents to make the investment decision. The text translated from Norwegian is as follows: *“By purchasing funds that are non-sustainable, you may end up supporting unacceptable industries and business practises that are harmful for the environment or profits on war and human suffering. This is because the fund manager does not need to take other considerations than the financial ones”*. The original text can be found in the first paragraph of Figure 1.

4.3 Descriptive Statistics

As seen from Table 1, the sample size is 400, distributed among 76% males and 24% females. In the sample, there are few respondents below the age of 32 but otherwise a fairly even distribution. With respect to gross income, we notice that a large fraction (20%) earns 1,000,000 NOK or more. Below the top-earners, income has a fairly normal distribution among the different intervals. In terms of the level of education, the largest part of the sample, 66%, has higher education. Overall, these statistics reveal that the sample is dominated by males with high education and income – likely a consequence of recruiting from a pool representing customers of a financial service provider.

The data from the survey includes how many in the sample have previously invested in stocks or funds, and how many that are current investors. In the sample, 71% of respondents have previously invested in stocks or funds, but only 47% have a recurring investment. Also noteworthy is that 88% of the sample responded correctly to our control question about management fees, though this was a relatively easy question that someone with basic percentage knowledge should be able to answer correctly.

Table 1: Descriptive Statistics

Variable		Frequency	Percent	Cumulative
Gender	Male	304	76 %	
	Female	96	24 %	
Age	22-32	19	5 %	5 %
	33-43	81	20 %	25 %
	44-54	111	28 %	53 %
	55-65	93	23 %	76 %
	66-77	96	24 %	100 %
Education	Grunnskole ^a	17	4 %	4 %
	Videregående ^b	121	30 %	35 %
	Høyere utdanning ^c	262	66 %	100 %
Income ^d	Under 300,000	25	6 %	6 %
	300,000 – 399,999	32	8 %	14 %
	400,000 – 499,999	51	13 %	27 %
	500,000 – 599,999	64	16 %	43 %
	600,000 – 699,999	63	16 %	59 %
	700,000 – 799,999	34	9 %	67 %
	800,000 – 899,999	34	9 %	76 %
	900,000 – 999,999	19	5 %	81 %
	1,000,000+	78	20 %	100 %
Have Invested	Yes	283	71 %	
	No	117	29 %	
Current Investor	Yes	189	47 %	
	No	211	53 %	
Control Question	Correct	352	88 %	
	Incorrect	48	12 %	
Number of Observations ^e		400	100%	

^a usually 10 years, ^b usually 3 additional years, ^c completed additional education after previous categories, ^d gross annual income in NOK, ^e 5 outliers of management fee between 50-100% were removed from the dataset

In addition to collecting the information in the Table 1, respondents were also asked some questions about their beliefs regarding SRI. These questions were answered after the experimental part of the survey. Therefore, the responses of these questions may have been affected by the possible treatment a respondent have received. Just about $\frac{3}{4}$ of the sample received a treatment.

The respondents were asked questions where they could answer either “lower”, “equal” or “higher”. The responses have been coded such that “lower” is assigned the value -1, “equal” is assigned the value of 0, and “higher” appears as the value 1. When looking at the mean of the sample, a negative value imply that the mean of all responses is leaning towards “lower”.

Similarly, a positive mean value means that the sample overall is leaning towards “higher”. A mean value that is not significantly different from 0 is more difficult to interpret. This can either mean that the sample overall is leaning towards “equal” or that the sample is split between “lower” and “higher”.

Firstly, one can see from Table 2 that the samples overall belief is that choosing sustainable products in the store has a higher impact on the environment than sustainable investment. The mean value of impact is 0.16 and significantly higher than 0, as indicated by the 95% confidence interval. However, the mean value is much lower than 1, so there is not an overall agreement among the sample.

When looking at the sample’s belief regarding the performance of sustainable funds, they generally believe sustainable funds to have lower return than non-sustainable funds. This is a significant difference within the 95% confidence interval. According to the mean, the sample overall is leaning towards believing sustainable funds to be riskier than non-sustainable funds. However, this mean is not significantly different, as the 95% confidence interval contains zero. Lastly, the respondents were asked about their belief regarding the variation in return for sustainable funds compared to non-sustainable funds. To this question, the average respondent replied that they believe the variation in return to be higher for sustainable funds. In contrast to the risk mean, the variance of return mean is significantly different from 0. This shows that respondents reacted differently towards the question of risk and the question about variation in return.

Table 2: Mean Estimation of Impact, Return, Risk and Variance of the Return

Mean Estimation	Number of obs. = 400			
	Mean	Std. Err.	[95% conf.	interval]
Impact	.155	.0352568	.0856876	.2243124
Return	-.0775	.0341929	-.1447208	-.0102792
Risk	.045	.0336939	-.0212397	.1112397
Variance Return	.165	.0333123	.0995104	.2304896

When considering the three beliefs about the financial performance of SRI funds as a whole, the indication is that an average respondent thinks that sustainable funds do slightly worse. Additionally, the average person also believes that investing sustainably has a lower impact than choosing sustainable products in the store.

5. Hypotheses

This chapter presents the four main hypotheses that will be tested in the thesis and explain the reasoning behind them.

Hypothesis 1 (H1): There is a willingness to pay for sustainable funds.

H1 is based on the theory that people have extended motivation. We believe that people are willing to pay for sustainable alternatives because they care about sustainability and get a higher utility from buying the sustainable option.

Hypothesis 2 (H2): The reverse label treatment increases the willingness to pay for sustainable funds.

H2 is based on a belief that reverse labelling will change the reference point of the respondents. We believe that such a treatment can make the barrier of choosing the “bad” option higher. The point is to label the “bad” option as bad, instead of labelling the “good” option as good. As behavioural economic theory explains, people seem to make choices dependent on a reference point. The unlabelled option might appear to be the standard option and thus serve as a reference point. When using a sustainable label, the sustainable product then becomes the better option than the reference point. However, when using an unsustainable label, the non-sustainable product might appear to be a worse option than the reference point. If people perceive the labelling as such, reverse labelling might take advantage of prospect theory and loss aversion.

Hypothesis 3 (H3): The moral treatment increases the willingness to pay for sustainable funds.

H3 builds on extended motivation and pro-social preferences. From behavioural economics we know that people in general get utility from acting pro-socially. We believe that by emphasising the harmful practises one might support when not investing sustainably, people will be less likely to choose that option. This text also helps to emphasize that investment is a choice of morality and that investing in non-sustainable funds is not a neutral option. It also points out that investing non-sustainably can have quite a negative effect.

Hypothesis 4 (H4): Demographic factors impact the willingness to pay for sustainable funds.

H4 is based on our belief that some parts of the general population are more willing to pay for sustainability and thereby sustainable funds. As mentioned earlier, the demographic factors investigated are age, gender, education, income, and knowledge. Based on the literature review, we believe that younger people, women, people with higher education, people with middle range income and people with low knowledge about investment are more likely to invest in sustainable funds.

In addition to these hypotheses, we will investigate the correlations between WTP and the variables for importance of sustainability, and whether the respondents trust the sustainability ratings given by fund managing companies.

6. Methodology

In this chapter we will explain the methods used to analyse the treatments impact on WTP. These methods will also be used to analyse demographic variables.

6.1 OLS as an Estimator

Ordinary least squares (OLS) is a simple linear regression model that estimates a relationship between two variables by minimizing the sum of squared residuals (Wooldridge, 2020, pp. 26-27). When there is more than one parameter in the model, it is called a *multiple linear regression model* (Wooldridge, 2020, p. 69). Additionally, when the multiple linear regression model has a dependent variable that is binary, it is called a *linear probability model* (Wooldridge, 2020, p. 240). OLS is a commonly used method for estimation and a natural choice when estimating unknown parameters in a cross-sectional data set. Therefore, this is the method we use to estimate WTP for SRI using Stata/SE 17.0. There are four assumptions that must hold for an unbiased estimate, and one more assumption necessary to obtain efficient estimators (Wooldridge, 2020, pp. 83, 88).

Assumption 1: Linearity in Parameters

Our population model needs to be linear in the parameters (Wooldridge, 2020, p. 80). That means that the model can be put into the format:

$$y = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k + u$$

Assumption 2: Random Sampling

The sample of participants need to be representative of the population. To assure this one must collect data from a randomly selected sample of the population (Wooldridge, 2020, p. 80). Random sampling is necessary to approximate the entire population from a sample.

Assumption 3: No Perfect Collinearity

There cannot be any constant independent variables in the sample (Wooldridge, 2020, p. 80). Neither can there be a fully linear relationship between any two of the independent variables (Wooldridge, 2020, p. 80). Stata will automatically omit a variable if it detects perfect collinearity.

Assumption 4: Zero Conditional Mean Assumption

The fourth assumption is that the error term should have an expected value of zero regardless of the value of the independent variables (Wooldridge, 2020, p. 82). If this assumption is broken, there is an endogeneity problem (Wooldridge, 2020, pp. 82-83).

Assumption 5: Homoskedasticity

The fifth assumption is the assumption of homoskedasticity in the model (Wooldridge, 2020, p. 88). This means that the error term u is expected to have the same variance no matter the values of any explanatory variables. A heteroskedasticity problem means that one or more of the explanatory variables are correlated with the error term (Wooldridge, 2020, p. 88).

6.2 The OLS Models

This section explains the OLS models used to identify whether the WTP can be increased through treatments. In order to find treatment effects, we first use the dependent variable WTP_SRI to see if the treatments affect the WTP for SRI. Therefore, this is a multiple linear regression model. After this, we use the dummy variable $d_positive_WTP_SRI$ as the dependent variable, which makes this a linear probability model. In this model one can see how the treatments affect whether there is a positive WTP for SRI or not – that is whether people are willing to pay a management fee strictly higher than 1%. The estimation of WTP is based on the maximum management fee the respondents are willing to accept in their choice of a sustainable fund. For all our regressions, robust standard errors are used to control for heteroskedasticity.

In the first model, we want to test whether the treatments had an effect on people's WTP, and whether this effect is significant:

$$WTP_SRI = \beta_0 + \beta_1 d_label + \beta_2 d_moral + \beta_3 d_labelmoral + u$$

The treatment variables are d_label , d_moral and $d_labelmoral$, where d_label is the variable for the reverse label treatment and d_moral is the variable for the moral treatment. The last variable $d_labelmoral$ is the variable for respondents who was exposed to both the reverse label- and moral treatment.

After this, we will run a regression on the complete model with all control variables:

$$WTP_SRI = \beta_0 + \beta_1 d_label + \beta_2 d_moral + \beta_3 d_labelmoral + \beta_4 age + \beta_5 d_male + \beta_6 i.education + \beta_7 income_over_700 + \beta_8 knowledge + u$$

The control variables in the regression are all variables for which data was collected before the respondent potentially was exposed to a treatment. The first control variable is a continuous variable for age, then there is a dummy variable for gender that is equal to 1 if the gender is male, and 0 if female. Next, there is the dummy variables for different levels of education. These variables show the effect of “Videregående” (=2) and “Høyere Utdanning” (=3), compared to the base value, which is “Grunnskole” (=1). The next variable is the variable for income, this variable is also a dummy variable, and is equal to 1 if the gross annual income is 700,000 NOK or more, and equal to 0 otherwise. The last variable we have included in the model is knowledge, which is based on a self-rating by the respondents on a scale from 1 to 7.

The last regression model is:

$$WTP_SRI = \beta_0 + \beta_1 d_treated + \beta_2 age + \beta_3 d_male + \beta_4 i.education + \beta_5 income_over_700 + \beta_6 knowledge + u$$

In this model we have combined all three treatment groups to form one larger group which we have named *d_treated*. This is because we want to see if all treatments combined have an effect on the demand for sustainable funds. In this regression model, we include the same control variables as before. Finally, we run the same three regressions with the dependant variable *d_positive_WTP_SRI* to look specifically at how the treatments affected whether there was a positive WTP for SRI or not.

7. Results

In this chapter of the thesis, we will present our results from the data analysis. The data was analysed using Stata/SE 17.0, thus most of the tables and figures are output from Stata. Some of the tables were modified using Microsoft Excel to make them more compact and easier to understand. The results from the analysis of the general WTP for SRI is presented first. After this, the treatment results and regression models are presented. Followed by the demographic results and the results from an interaction analysis. Lastly, the results from the analysis of attitudes concerning sustainability are presented.

7.1 Results from WTP for SRI

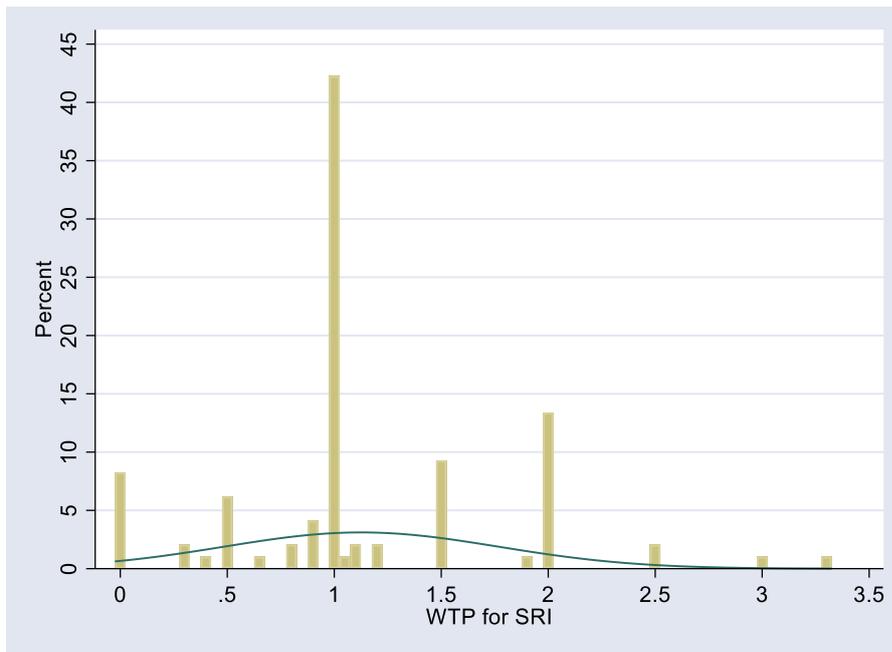
The first hypothesis H1 is that there is a willingness to pay for sustainable funds. To test H1 a one-sample t-test on the control group was performed to see whether their WTP for sustainable funds was significantly different from 1%. This is because the alternative fund had a management fee of 1%, so the H1₀ is that the WTP for the sustainable fund also is equal to 1%. As seen from Table 3, the control group has a mean WTP of 1.25%, which is higher than 1%. The t-test is also statistically significant at the 5%-level, therefore there is a WTP for sustainable funds present in the control group and H1 is confirmed.

Table 3: One-sample t-test for WTP for SRI in Control Group

One-sample t-test for WTP_SRI_Control=1					
	Obs.	Mean	St. Err.	t-value	p-value
WTP SRI	99	1.254	.117	2.188	.031

Figure 2 is a histogram of WTP for SRI in the control group. As seen in the figure, the most common answer in the control group was 1%. In fact, 41.41% of respondents in the control group answered 1% reflecting zero WTP for SRI. In addition, 24.24% of respondents answered below 1%, which represents a negative WTP for SRI. It is not clear if this reflects respondents who had a negative WTP for SRI, or respondents that did not pay full attention to the question, and therefore neglected to include the initial 1% in their reply. For example, if a respondent wanted to pay an additional 0.2 percentage points (p.p.) in management fee for the sustainable option, the respondent should have answered 1.2%, not 0.2%. Because of this uncertainty and to avoid overestimating the WTP for SRI, the choice was made to include all

values below 1%. When looking at the discrete distribution, there are also other values, like 0, 0.5, 1.5 and 2, that had a substantial number of replies. In the cumulative distribution of the control group, 34 individuals or 34.34% of the respondents was willing to pay more than 1% for the fund “Global Sustainable” and still prefer it over the fund “Global”. The distribution of respondents with zero, positive and negative WTP for SRI can be found later in Table 8.



* Two values over 3.5 was removed from the graph to improve visualisation

Figure 2: Histogram of WTP for SRI in Control Group

7.2 Treatment Results

People were asked how much they were willing to pay in management fee for a more sustainable alternative, when the first option had a management fee of 1%. The sustainable alternative is “Global Sustainable” with standard labelling and “Global” with reverse labelling. Figure 3 shows the average management fee people were willing to pay for the sustainable alternative for all four groups. It can be seen that all groups, including the control group, has a mean management fee higher than 1%. This means that all groups showed tendencies to have a WTP for SRI. As speculated in H2 and H3, the treatments all show tendencies to increase the WTP for SRI, as all treatment groups reported a higher mean management fee than the control group.

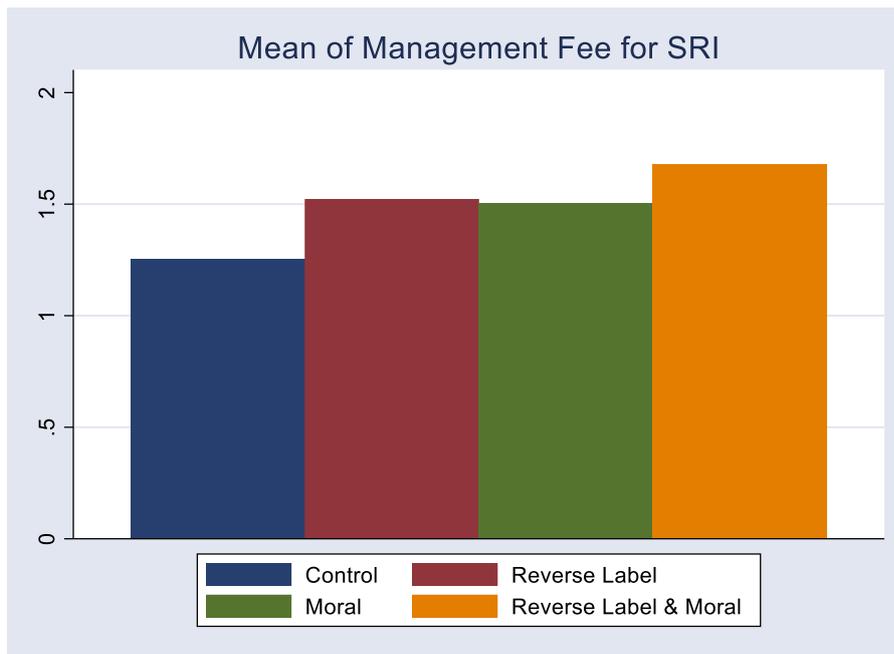


Figure 3: Mean of Management Fee for SRI

When looking at the two-sample t-tests in Table 4, one can see whether the tendencies showed in Figure 3 are statistically significant. While the reverse label treatment has a mean that is 0.27 p.p. higher than the control group, the p-value show that the difference between groups is not statistically significant. The same is true for the moral treatment, where the mean is 0.25 p.p. higher, but not significantly different from the control group. However, the group that received both the reverse label- and moral treatment has a mean that is 0.42 p.p. higher than the control group, and this group is significantly different from the control group at a 5% significance level.

Table 4: Two-sample t-test with Equal Variances on Treatments

Two-sample t-test with Equal Variances						
	Obs.	Mean	Diff.	St. Err.	t-value	p-value
Control	99	1.254				
Reverse Label	100	1.523	.268	.198	-1.35	.177
Moral	100	1.503	.248	.169	-1.45	.144
Reverse Label & Moral	101	1.687	.423	.211	-2.00	.046

7.2.1 Regression Models with WTP for SRI

In Table 5 there are three multiple linear regressions all with WTP for SRI as the dependent variable. Regression 1 contains independent dummy variables for all treatment groups. Regression 2 has the same treatment variables as Regression 1, but also includes control variables of age, gender, education, income, and knowledge. Finally, Regression 3 does not contain the dummy variables for each of the treatment groups, but instead includes a dummy variable for whether the respondent received a treatment or not. The third regression also includes the same control variables as Regression 2. As seen at the bottom of Table 5, the difference between treatment groups is not statistically significant. Therefore, it is interesting to look at the overall effect of being treated, as we cannot say there is a difference between treatment groups.

Regression 1 shows the unconditional effect of the treatments, which also can be seen in Table 4. The treatment group that received both the reverse label treatment and the moral treatment is the only group where the treatment showed a significant effect on the WTP for a sustainable fund. This coefficient is statistically significant at the 5%-level and is estimated to increase the management fee the sample is willing to pay for a sustainable fund with 0.42 p.p. Neither the reverse label treatment group nor the moral treatment group had statistically significant coefficients. However, both groups had similar positive coefficients of approximately 0.25 which show indications of the treatments increasing the WTP for sustainable funds.

The second regression model adds control variables. This does not result in any large changes for the treatment variables as the changes in coefficients are very minimal and the significance levels are unchanged. When looking at the control variables one can see that the significant ones are age, and income over 700,000 NOK. The age coefficient indicates that a one-year increase in age responds to a 0.012 p.p. increase in the management fee the respondents are willing to pay for sustainability. The coefficient for the income dummy is statistically significant and shows that the respondents who have a gross annual income of more than 700,000 NOK, had a 0.31 p.p. decrease in WTP for the sustainable fund. The gender dummy is not significant, but the coefficient indicates a negative effect on WTP if the respondent is a man. The coefficients of the two additional levels of education indicates a decreasing WTP for sustainability, as does the coefficient for knowledge about investment, but none of them are statistically significant.

The third regression is very similar to Regression 2, both in terms of coefficients and which of the control variables are statistically significant. It also confirms that the dummy variable treated, which is the effect of all treatments combined, is significant at a 5%-level. The coefficient indicates that having received a treatment corresponds to a 0.32 p.p. increase in the WTP for the sustainable fund alternative, which is more than twice as large as the WTP in the control group.

Table 5: Regression Models with WTP for SRI as Dependent Variable

Multiple Linear Regressions with WTP for SRI as Dependent Variable

	(1) Regression 1	(2) Regression 2	(3) Regression 3
Reverse Label	0.268 (0.20)	0.249 (0.18)	
Moral	0.248 (0.17)	0.263 (0.17)	
Reverse Label & Moral	0.423** (0.21)	0.437** (0.21)	
Age		0.012** (0.01)	0.012** (0.01)
Male		-0.213 (0.21)	-0.206 (0.20)
Education=2 ^a		-0.186 (0.54)	-0.210 (0.54)
Education=3 ^b		-0.344 (0.52)	-0.362 (0.52)
Income over 700,000 ^c		-0.307** (0.14)	-0.298** (0.14)
Knowledge		-0.053 (0.07)	-0.057 (0.07)
Treated			0.315** (0.14)
Constant	1.255*** (0.12)	1.362** (0.60)	1.390** (0.60)
Observations	400	400	400
R ²	0.01	0.05	0.05
Reverse Label = Moral		p = 0.9441	
Reverse Label = Reverse Label & Moral		p = 0.4348	
Moral = Reverse Label & Moral		p = 0.4348	

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

^a Videregående, ^b Høyere utdanning, ^c NOK

7.2.2 Regression Models with Positive WTP for SRI

In Table 6, there are three linear probability models with the dependent variable named Positive WTP for SRI. This dependent variable is a dummy variable that shows whether there is a positive WTP for SRI or not. This is done by making the dummy variable equal to 1 if the respondent was willing to pay a management fee for the sustainable fund that was strictly higher than 1%, and equal to 0 otherwise.

Except from having a different dependent variable, the regressions are the same as in Table 5. The reason for including these regressions, is to shed light on whether the treatments alter the WTP by converting people who are not willing to pay to become so, or by getting respondents that already are willing to pay to pay more.

In Regression 4, the coefficients are significant for the moral treatment group and for the group that received both the reverse label- and moral treatment. In Table 6, as opposed to Table 5, the moral treatment group has the most positive coefficient, and it is statistically significant at the 1%-level. Having been exclusively exposed to the moral treatment increases the likelihood of having a positive WTP for the sustainable fund by 21.7 p.p. Having been exposed to both treatments makes it 15.2 p.p. more likely that the respondent has a positive WTP for the sustainable fund. This coefficient is significant at the 5%-level. Looking at the test at the bottom of Table 6, the moral treatment group and the double treatment group are not statistically different from each other. The reverse label group is not significant in Regression 4 and has a much lower coefficient than the other treatment groups. When looking at the treatments ability to affect whether someone has a positive WTP or not, the reverse label treatment group is significantly different from the moral treatment group.

Regression 5 is the same as Regression 4 except it includes the control variables. This does not affect the significance level of any of the treatment variables and only changes the coefficients minimally. None of the control variables has a significant effect on whether a respondent is likely to have a positive WTP for the sustainable fund or not. However, the non-significant control variables all have negative coefficients, which shows tendencies that higher age, education, income, and knowledge about investment, in addition to being a man, all make a respondent less likely to have a positive WTP for the sustainable fund. The age coefficient changed from being slightly positive, to being slightly negative between Table 5 and Table 6.

Regression 6 again combines all treatments into one dummy variable that show whether a respondent received a treatment or not. The dummy variable treated is significant at the 5%-level and shows that a respondent who has received a treatment is 13.4 p.p. more likely to have a positive WTP for the sustainable fund. The coefficients of the control variables are very similar to those in Regression 5.

Table 6: Regression Models with Positive WTP for SRI as Dependent Variable

Linear Probability Models with Positive WTP for SRI as Dependent Variable			
	(1)	(2)	(3)
	Regression 4	Regression 5	Regression 6
Reverse Label	0.057 (0.07)	0.044 (0.07)	
Moral	0.217*** (0.07)	0.217*** (0.07)	
Reverse Label & Moral	0.152** (0.07)	0.140** (0.07)	
Age		-0.001 (0.00)	-0.001 (0.00)
Male		-0.072 (0.06)	-0.069 (0.06)
Education=2 ^a		-0.038 (0.13)	-0.043 (0.13)
Education=3 ^b		-0.042 (0.13)	-0.045 (0.13)
Income over 700,000 ^a		-0.001 (0.05)	-0.004 (0.06)
Knowledge		-0.028 (0.02)	-0.025 (0.02)
Treated			0.134** (0.06)
Constant	0.343*** (0.05)	0.582*** (0.17)	0.575*** (0.17)
Observations	400	400	400
R^2	0.03	0.04	0.03
Reverse Label = Moral		p = 0.0131	
Reverse Label = Reverse Label & Moral		p = 0.1745	
Moral = Reverse Label & Moral		p = 0.2825	

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

^a Videregående, ^b Høyere utdanning, ^c NOK

To look closer into the effect of the treatments, Table 7 shows the mean differences in WTP for SRI between treatment groups and the control group for the subsample of respondents who had a positive WTP for SRI. Due to a relatively small sample, none of the mean estimates are significantly different from the control group. This also implies that none of the treatments are significantly different from each other. However, it is interesting to note that the difference in mean WTP between the reverse label treatment group and the control group is large, while the difference between the moral treatment group and the control group is practically non-existent. The group that received both the reverse label treatment and the moral treatment has a mean estimate that is very similar to the group that only got the reverse label treatment. Overall, the patterns observed in Table 6 and Table 7 suggests that the moral treatment was superior in increasing the ratio of people with positive WTP, while the reverse label treatment was superior in increasing the WTP among the respondents who already had a positive WTP for SRI.

Table 7: Two-sample t-test with Equal Variances on Treatments (Positive WTP Only)

Two-sample t-test with Equal Variances						
	Obs.	Mean	Diff.	St. Err.	t-value	p-value
Control	34	2.158				
Reverse Label	40	2.535	-.378	.444	-.850	.398
Moral	56	2.158	-.001	.300	.000	.998
Reverse Label & Moral	50	2.584	-.427	.427	-1.00	.321

Additionally, Table 8 makes it possible to study the distribution of positive, zero and negative WTP for SRI by different treatment groups and whether a respondent has received a treatment or not. As the results in Table 6 shows, the moral treatment is estimated to have the largest effect on getting respondents to have a positive WTP for SRI. The combination of both treatments has the second highest amount of people willing to pay for SRI. In general, the group of treated people have a higher number of people with WTP for SRI than the control group. These results coincide with results from Table 6.

Table 8: WTP for SRI by Groups

Willingness to Pay for Socially Responsible Investments by Groups					
	Control	Reverse Label	Moral	Reverse Label & Moral	Treated
Positive	34,34 %	40,00 %	56,00 %	49,50 %	48,50 %
Zero	41,41 %	40,00 %	27,00 %	38,61 %	35,22 %
Negative	24,24 %	20,00 %	17,00 %	11,88 %	16,28 %
Total	100,00 %	100,00 %	100,00 %	100,00 %	100,00 %

Based on the treatment results in general, we find some support for H3: “The moral treatment increases the willingness to pay for sustainable funds”. Since the moral treatment independently increased the probability of people having a positive WTP for SRI, this increases overall WTP for SRI. However, from the results, we are not able to find support for the reverse label treatment being able to increase WTP for SRI on its own. Hence, H2: “The reverse label treatment increases the willingness to pay for sustainable funds”, cannot be confirmed with significance.

7.3 Demographic Results

In this section, the results from the analysis of demographic variables are presented. This analysis shows whether different demographic characteristics correlate with how much the respondents are willing to pay for SRI. The first section investigates the income correlation. The sections after this looks at the differences between men and women, and between different ages, education levels and different levels of knowledge.

As previously seen in Table 1, the annual gross income variable is divided into nine income levels. The bar chart in Figure 4, shows an increasing WTP when going from the lowest level of income (bar 1) to average income (bar 3) of 400,000-499,999 NOK. This makes intuitive sense as people with low income might feel like they cannot afford paying more for sustainability. However, when an individual reaches 500,000+ NOK in annual income, there is overall a declining WTP for SRI. Hence, low-income respondents have a higher WTP for SRI than high-income respondents, as the WTP of the sample is declining with increasing income. In Figure 5, one can see this general trend in the dataset. The trend line shows that higher level of income, indicates lower WTP for the sustainable fund. This points in the same direction as the coefficient of income over 700,000 NOK in Table 5.

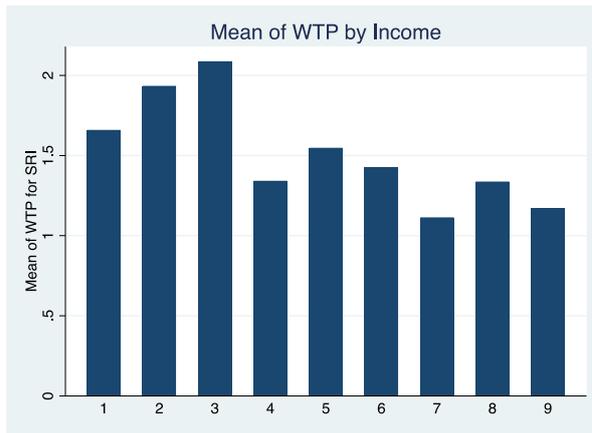


Figure 4: Mean of WTP for SRI by Income

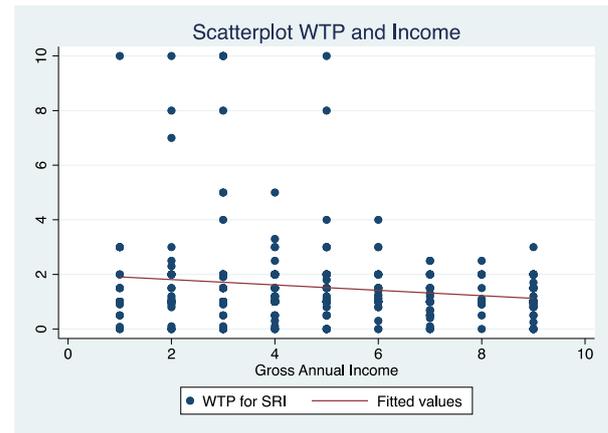


Figure 5: Scatterplot WTP for SRI and Income

Another demographic result it is interesting to look at is the difference between men and women. From Table 5 and Table 6 it is apparent that the dummy for being a man has a negative coefficient in all regressions, but it is not statistically significant. Even though gender was not statistically significant in the regression models, when looking at the bar chart in Figure 6, the sample does show different mean values for WTP for SRI. The difference in mean WTP is around 0.25 p.p., with women having the higher WTP, which is a considerable difference but not statistically significant in our relatively small sample.

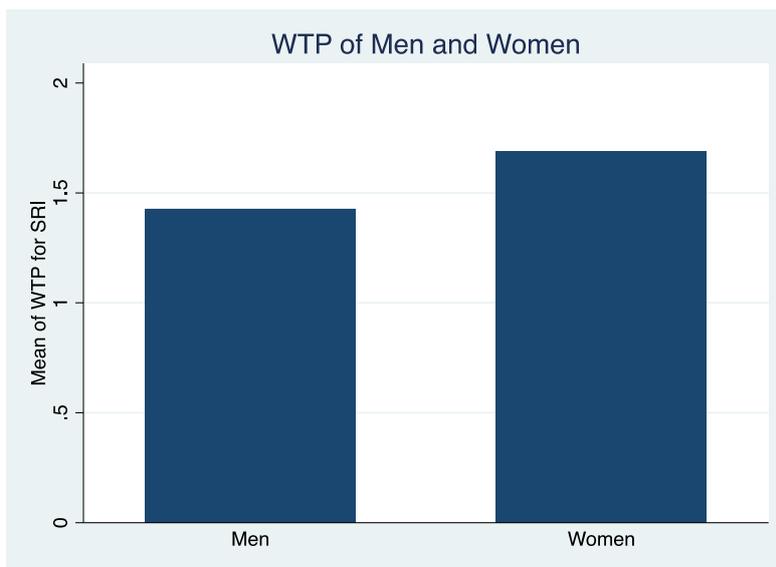


Figure 6: Mean WTP for SRI of Men and Women

The control variable age is significant in Regression 2 and Regression 3 from Table 5. In both regressions, the age coefficient is 0.012 and significant at the 5%-level. When looking at the scatterplot in Figure 7, the trend line has a positive slope as one would expect from the coefficient. When looking at the data points, they look to be evenly distributed for values of WTP for SRI lower than about 4%. The number of uncommonly high WTP values seems to increase with age. Because of this, Figure 8 shows a new scatterplot where responses of a management fee of 4% and higher were removed. When looking at this distribution in Figure 8, one can see that the trend line is no longer increasing but flat. A regression was also run to confirm this result, and age was no longer significant with a p-value of 0.67. When removing datapoints of 4% and above, age is no longer significantly impacting WTP for SRI. Thus, it looks like the high values of $\geq 4\%$ were driving the correlation between age and WTP for SRI found in the regressions in Table 5.

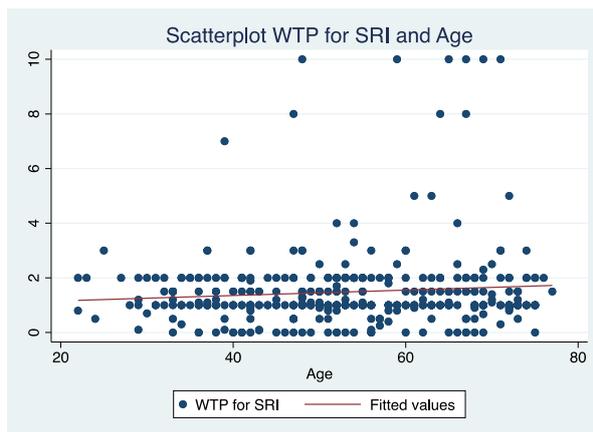


Figure 7: Scatterplot WTP for SRI and Age

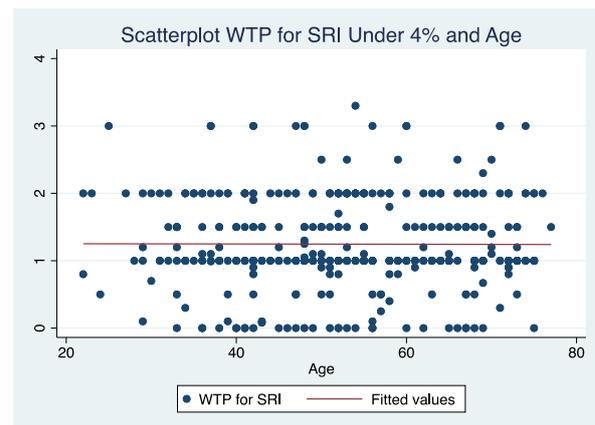
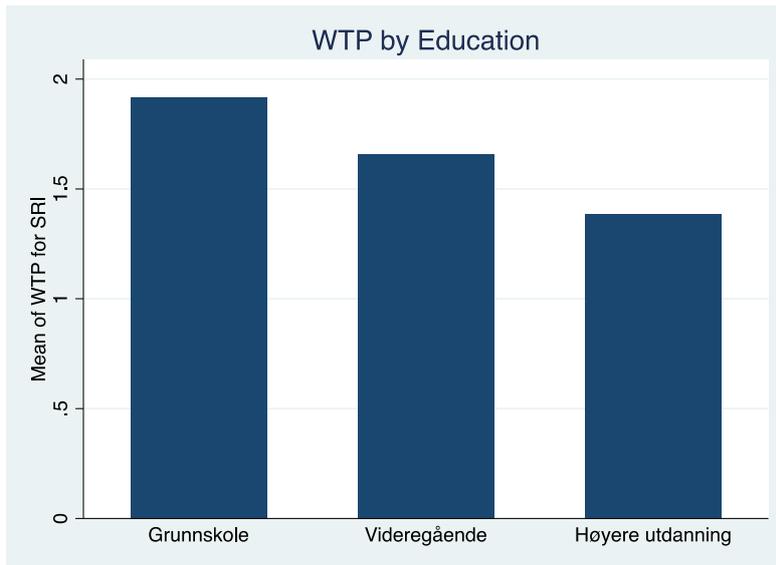


Figure 8: Scatterplot WTP for SRI Under 4% and Age

When looking at the regressions in Table 5 and Table 6, one can see that the coefficients for the education dummy variable is not statistically significant. Regardless of this, we want to look closer at the differences in the mean of WTP for the three education groups seen in Figure 9.



* “Grunnskole” is usually 10 years, “Videregående” is usually 3 additional years to “Grunnskole” and “Høyere utdanning” is additional education completed after “Videregående”

Figure 9: WTP for SRI by Education

When performing a two-sample t-test with equal variances, the findings are that there is no statistical difference in mean WTP for SRI between “Grunnskole” and “Videregående”, probably because of the low number of only 17 observations in the “Grunnskole” group. However, there is a significant difference between “Videregående” and “Høyere utdanning”. Therefore, “Grunnskole” and “Videregående” is combined into one category. A test was run to see if higher educated people’s mean WTP for SRI is significantly different from people without higher education. As seen from Table 9, the difference of 0.31 is significant at the 5%-level. This indicates that higher educated people have a 0.31 p.p. lower WTP for SRI than those without higher education. Though, the effect of higher education is still not significant when put into the regressions in Table 5 and Table 6 with other control variables.

Table 9: Two-sample t-test with Equal Variances on Higher Education

Two-sample t-test with Equal Variances								
	Obs. ^a	Obs. ^b	Mean ^a	Mean ^b	Diff.	St. Err.	t-value	p-value
WTP for SRI by Higher Education	138	262	1.691	1.385	.305	.153	2	.047

^a “Grunnskole” and “Videregående”, ^b “Høyere utdanning”

When looking at the knowledge variable in Table 5 and Table 6, one can see that the coefficients are not statistically significant. However, when looking at Figure 10, one can clearly see that the respondents who replied with the two lowest levels of knowledge about investment, have the highest mean WTP for SRI. The mean WTP in the bar chart does seem to be decreasing overall with higher knowledge, but it is not an even decrease. It is interesting to note that those with no knowledge about investing (1) has the highest mean, while those who answered 6 has the lowest mean. The difference in mean WTP between these groups is more than 1 p.p. in management fee.

When looking at the scatterplot in Figure 11 one can see from the trendline that WTP for SRI generally does seem to decrease with high self-reported knowledge. With the exception of a few outliers, the spread of the datapoints seem to decrease with increasing self-reported knowledge. This makes sense as knowledgeable investors should have a better approximation of what one should normally pay in management fee for a sustainable fund.

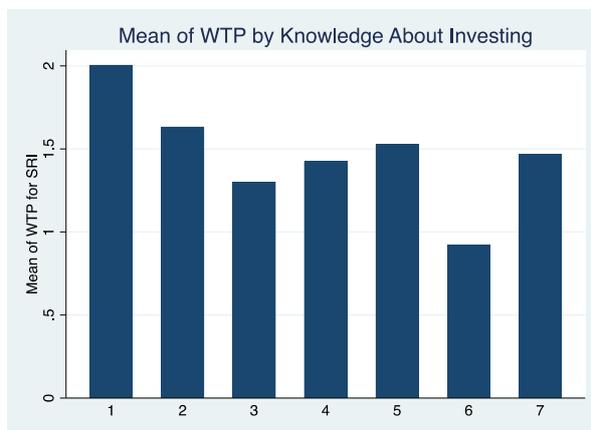


Figure 10: Mean of WTP for SRI by Knowledge About Investing

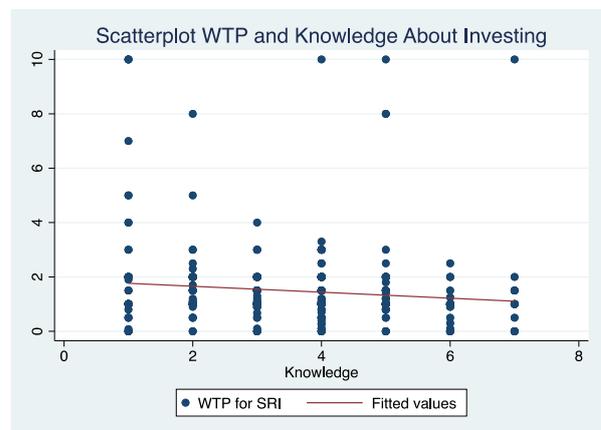


Figure 11: Scatterplot WTP for SRI and Knowledge About Investing

Based on the demographic results we can confirm H4: “Demographic factors impact the willingness to pay for sustainable funds”, as income correlated negatively with the WTP for the sustainable fund. However, this was the only demographic factor that seem to impact respondents WTP for SRI when considering all background variables jointly.

7.4 Interaction Results

Presented in this section, is the results from an interaction analysis that test whether there are varying treatment effects depending on the gender, knowledge, education, income, and age of the respondents. The five regressions in Table 10 all have WTP for SRI as the dependent variable and contain the dummy variable treated. In addition to this, each regression contains a dummy variable representing a subgroup of the specific category (e.g., male for the gender dimension), and an interaction variable between the group dummy variable and the treated dummy variable.

As seen from all the regressions in Table 10, there is not a single significant interaction variable for any of the control variables. Thus, the treatment effect is not significantly different across the groups. The same holds true when replacing the treated dummy with the dummy for being in the group that received both treatments (G4). Therefore, the treatments can be used to increase WTP for SRI across different groups in the population with similar results. The treatments are not significantly better or worse dependent on gender, having self-rated knowledge equal to or above the median value of 4, higher education, annual gross income above 700,000 NOK or age of 55 years and above.

Table 10: Regression Models for Treatment Effects on Different Variables

Regression Models for Treatment Effects on Different Variables

	(1) Regression 7	(2) Regression 8	(3) Regression 9	(4) Regression 10	(5) Regression 11
Treated	0.481 (0.30)	0.223 (0.18)	0.278 (0.35)	0.378 (0.23)	0.144 (0.21)
Male	-0.098 (0.25)				
Treated # Male	-0.219 (0.35)				
Knowledge 4+		-0.259 (0.22)			
Treated # Knowledge 4+		0.126 (0.28)			
Higher Education			-0.353 (0.30)		
Treated # Higher Education			0.060 (0.37)		
Income 700+ ^a				-0.361* (0.20)	
Treated # Income 700+ ^a				-0.119 (0.25)	
Age 55+					-0.041 (0.23)
Treated # Age 55+					0.360 (0.29)
Constant	1.329*** (0.21)	1.409*** (0.13)	1.483*** (0.29)	1.393*** (0.18)	1.274*** (0.19)
Observations	400	400	400	400	400
R^2	0.02	0.01	0.02	0.03	0.02

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, ^a Thousands of NOK

7.5 Results from Attitude Parameters

This section investigates the self-reported values of how important sustainability is for the respondents and if they trust the sustainability ratings of funds. Both answers were given on a scale from 1 to 7, thus the median value of the scale is 4. It is important to note that these answers were given after the experimental part of the survey. Therefore, the answers might have been affected by a treatment. However, it is still interesting to look at the answers to these questions, and how these answers correlate with WTP for SRI. Gender differences within importance and trust is also investigated.

As seen in Table 11, the average person in the sample rate themselves at 4.48 on how much they care about sustainability. This value is significantly higher than the median value of the scale based on the 95% confidence interval. When respondents were asked how much they trust sustainability ratings given by fund providers, the sample mean is 3.38. The respondents' level of trust is below the median value of the scale as the 95% confidence interval does not include 4.

Table 11: Mean Estimation of Importance and Trust

Mean Estimation	Number of Obs. = 400			
	Mean	Std. Err.	[95% conf.	interval]
Importance	4.475	.0853913	4.307127	4.642873
Trust	3.375	.0743287	3.228875	3.521125

To get a better understanding of how the different variables correlate with the WTP for SRI, some figures are presented to illustrate the mean WTP of the respondents who answered the same alternative on the 1 to 7 scale. Also included are figures that show the trendline of the datapoints with respect to the WTP for SRI for each variable.

In the bar chart in Figure 12 there is a fairly even increase in mean WTP with self-rated importance of sustainability. The group that rated sustainability to be of no importance (1), also had the lowest mean WTP for the sustainable fund. The respondents who rated sustainability to be of the highest importance, also had the highest mean WTP. All this makes perfect sense from what one would intuitively believe; those who believe sustainability to be most important, are most willing to pay for sustainability.

From the scatterplot in Figure 13 one can see the increasing trend line showing the best estimated linear description of the dataset. Moving from group 1 to group 7 seem to reflect a 1 p.p. increase in WTP for the sustainable fund according to the trend line.

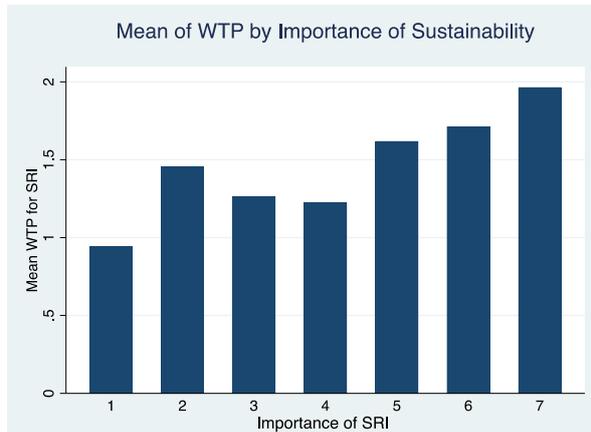


Figure 12: Mean of WTP for SRI by Importance of Sustainability

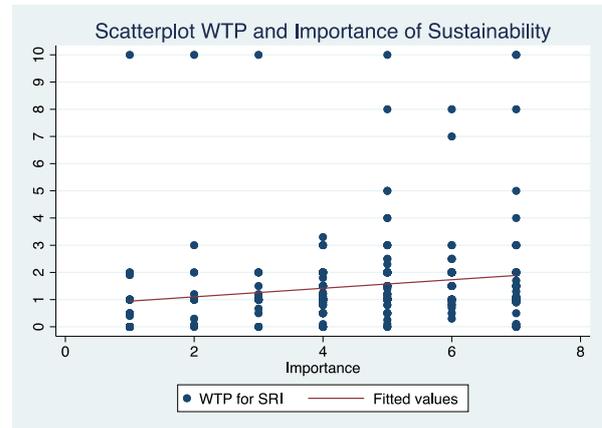


Figure 13: Scatterplot WTP for SRI and Importance of Sustainability

In Figure 14 , one can see the mean WTP for SRI for each possible response to the question about the trust in sustainability ratings provided by fund managing companies. There is a somewhat even climb from 1-6, implying that the more one trusts the sustainability ratings of funds, the more one is willing to pay for the SRI fund. Those who had highest trust in the sustainability ratings (7), have a substantially higher WTP for SRI than the group prior. This is due to there only being nine observations in the group who answered 7. Therefore, the two outliers that answer 8% and 10%, seen in Figure 15, drastically increase the mean WTP for SRI in this group.

From Figure 15, one can again see the positive trend of higher trust resulting in higher WTP for SRI. One can see a more realistic increase from 6-7 estimated by the trend line in this figure. Also, it is interesting to note from the trendline that going from no trust (1) to high trust (7), has an approximately 1 p.p. increase in the WTP for SRI.

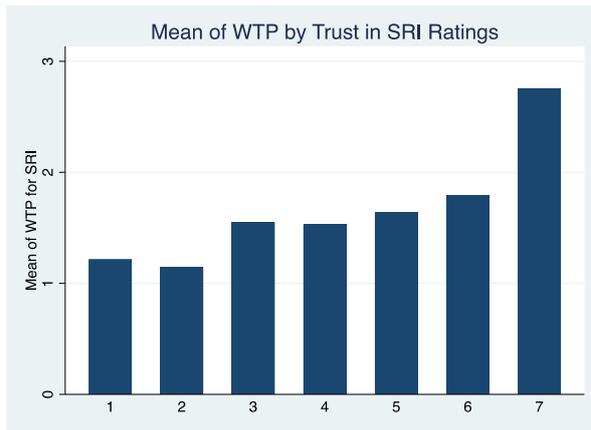


Figure 14: Mean of WTP for SRI by Trust in SRI Ratings

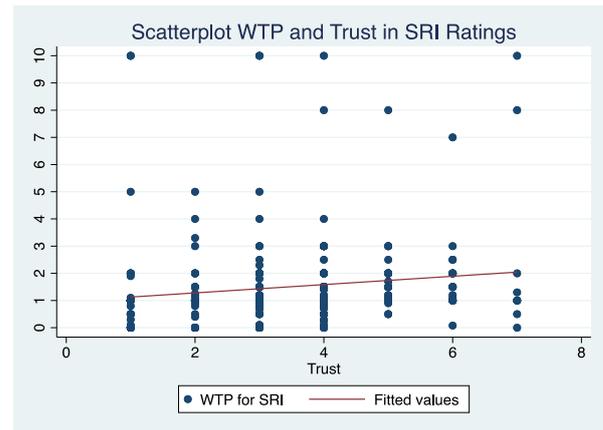


Figure 15: Scatterplot WTP for SRI and Trust in SRI Ratings

In Table 12, two-sample t-tests are presented, to see if there are any differences between men and women when it comes to how important sustainability is and the trust in sustainability ratings. One can see that both importance and trust is statistically different between the genders at the 1% significance level. The main difference is that the women in the sample on average rate the importance of sustainability 0.75 higher than men on the 1-7 scale. Though, both men and women on average rate the importance of sustainability above the median value. On average, both men and women rate their mean trust below the median value of the scale. The mean difference in trust levels between genders is 0.51 on the 1-7 scale, where women report a higher level of trust.

Table 12: Two-sample t-test with Equal Variances on Gender Differences

Two-sample t-test with Equal Variances						
	Female	Male				
	Mean	Mean	Diff.	St. Err.	t-value	p-value
Importance of SRI by Gender	5.042	4.296	.746	.197	3.8	0
Trust in SRI Ratings by Gender	3.760	3.254	.507	.173	2.95	.004
Observations	96	304				

8. Discussion

This chapter first introduces the main findings of the experiment. Then, the limitations of the survey and topics for further research is presented.

8.1 Main Findings

A representative person in the sample rates sustainability as significantly more important than the median value of the scale. However, this representative person also has a mean trust rating under the median value, which indicates a fairly low level of trust in the sustainability ratings given by fund providers. If people do find sustainability to be important, but do not trust the sustainability ratings, this can result in people not choosing sustainable investments even though they may prefer it.

The literature review generally found SRI funds to have a higher ethical performance than conventional funds (Kempf & Osthoff, 2008; Nitsche & Schröder, 2018). Openness about criteria and stricter regulations around SRI labelling should be able to make people trust SRI more, which intuitively should make people more willing to pay for it. However, previous literature did not find a correlation between higher trust and increasing investment in SRI (Nilsson, 2008; Wins & Zwergel, 2016). From the scatterplot there looks to be a correlation between high trust and high WTP for SRI in our results, but we cannot claim anything about its significance. If trust is not a deciding factor on whether people choose SRI, the low trust might not be a problem. This might be because the actual amount of real-world impact SRI has, in other words the amount of trust one should have in its moral superiority, is not necessarily the main reason why people choose to pay for SRI according to Heeb et al. (2022). They speculate about the warm-glow effect being more important, but it can also be that people who invest in SRI does so to be consistent with their self-image.

Something that might impact peoples WTP for SRI is their beliefs around SRI's ethical performance. From the results, we saw that on average, people in the sample believe that SRI has a lower impact than choosing sustainably when shopping. The results also suggest that people in general think sustainable funds have a lower return than conventional funds, that they have higher risk and that the return vary more than with non-sustainable funds. People generally does not have much faith in the financial performance of SRI, and this might make them less willing to pay for it. Looking to previous literature to find the likelihood of this

having an effect, Nilsson (2008) found that beliefs around the financial return of SRI was significant when making a decision regarding SRI. On the other hand, Wins and Zwergel (2016) found that the belief regarding risk was not significant for investor behaviour. If respondents expect the SRI fund to have a lower return despite having the same historical return, it makes sense that not everyone is willing to pay for it.

When looking at these attitudes towards and beliefs about SRI, one might think that there is little WTP for SRI. However, there are clear indications of a WTP for SRI in our sample. In the control group, 34.34% of the responses reflected a WTP extra for SRI. This is contrary to what classical economic theory predicts, but in line with theories of extended motivation and pro-social preferences. This is also in accordance with previous findings that 34.7% of people would be willing to pay extra for an SRI portfolio (Apostolakis et al., 2016). When looking at respondents who were assigned into treatment groups, the amount of people willing to pay for SRI increased to 48.50% of respondents. It looks like the respondents were affected by the treatments as the number of people who had a WTP for SRI were much higher in the treatment groups.

When looking at WTP for SRI as dependent variable neither the reverse label treatment nor the moral treatment is significant on its own, but both are estimated to affect a respondents WTP by approximately 0.25 p.p. Only the group that received both the reverse label treatment and the moral treatment had a significantly higher WTP for the sustainable fund than the control group. The reverse label treatment and the moral treatment combined turned out to be very effective in increasing a respondents WTP for SRI, as they were willing to pay a management fee premium that was almost three times higher than the control group. The lack of significance for the individual treatments might indicate that the treatments are only effective in increasing WTP for SRI when put together. It might also be that the treatments strengthen the effect of each other enough that it becomes significant with our sample size.

The moral treatment has a large estimated effect and strong significance when looking at its ability to make people willing to pay for SRI. In fact, in the group that received the moral treatment, 56.00% responded with a positive WTP for SRI. This indicates that being made aware of the possible negative effects of not investing sustainably, made people much less likely to respond with zero or negative WTP for SRI. Specifically, the group that only received the moral treatment is 21.7 p.p. more likely to have a positive WTP for SRI. It might be because respondents feel it is inconsistent with their self-image to risk these negative effects

of not investing sustainably, or perhaps their WTP have been influenced by being made aware of the possible negative effect on other people's utility. The moral treatment is likely affecting people who are unsure on whether they have a WTP for SRI or not. The reverse label treatment does not show the same effectiveness in getting people to have a willingness to pay for SRI. Instead, this treatment showed a larger, though not significant, indication of effect when looking at the ability to increase WTP for SRI. When only looking at people with a positive willingness to pay for SRI, the mean estimation of WTP for SRI for the moral treatment group is almost indistinguishable from the control group. This indicates that the moral treatment has almost no effect in increasing the WTP for respondents with a positive WTP for SRI. However, the reverse label groups mean estimation of WTP for SRI indicates a considerable effect in increasing positive WTP. Although there was not a significant difference between any treatment group, these are interesting indications of the different effect of the treatments.

When looking at the indicated effects of the different treatments the analysis suggests that both the reverse label and moral treatment increased the willingness to pay by about 0.25 p.p. However, while the moral treatment achieved this by turning people from *not willing* to pay to become willing to pay, the reverse label seems to have mostly affected people that already had a positive willingness to pay to pay even more. That the two treatments catered to different types of people also suggest why the combined treatment generated the biggest change in WTP. However, given the relatively small sample and imprecise point estimates, we cannot claim any specific effect for the reverse label treatment by itself. The combination of treatments seems to be able to both increase WTP for SRI and the likelihood of someone having a positive WTP for SRI. These different effects seem to work well together as the treatments combined seem to strengthen each other and make people even more willing to pay for SRI.

Absent outliers, income was the only demographic variable that was significantly associated with WTP for SRI. In particular, we found that people with higher income is less willing to pay for SRI than people with lower income. This appears to be in line with previous research, as Berry and Yeung (2013) found that people of high income was less willing to sacrifice financial improvement for moral improvement. Being less willing to make this trade-off suggest that they have a lower WTP for SRI than those more willing to sacrifice financial improvement. In addition, Escrig-Olmedo et al. (2013) found that SRI investors were usually of average income. This shows similar indications as the results from the survey found that people with income around 500,000 NOK were the most willing to pay for SRI.

The interaction variables between demographic factors and the treatment variables show no significance. This means that the treatment effect is similar across the included demographic factors. That is, the treatments tested in this experiment affect people the same way independently of gender, knowledge, education, income, and age. The treatments result seems to be fairly universal and should be able to affect a large group of people. Thus, the treatments are well suited if a policy maker want to expose a non-specific population to them. When it comes to increasing WTP for SRI, the combination of reverse label- and moral treatment looks to be an alternative that could be used. It also looks like a moral reminder could be a fairly general way to make more people WTP for SRI and could therefore be a tool used by a policy maker who wants to increase the amount of people that invest in SRI.

Finally, we do acknowledge that fund providers should be interested in increasing WTP for their sustainable products. However, fund providers have some conflicting interests. While they do want people to have WTP for their sustainable products, sustainable products are a small part of the market, so they are not likely to make changes that could affect the demand of their conventional financial products. It is therefore highly unlikely that fund providers would use tools such as reverse labelling and moral appeals on their own accord. It would have to be initiated by policy makers.

8.2 Limitations

There are some limitations that is important to emphasize when interpreting and discussing the results of the thesis. One clear limitation of this dataset is the sample size. The survey ended up getting fewer respondents than expected. This resulted in only approximately 100 respondents in each group. There are many large coefficients that show indications, but that does not have a high enough significance to be able to conclude anything. Most importantly, the reverse label- and moral treatment both show high coefficients and higher mean values of WTP compared to the control group. Still, the effect was not significant when looking at the treatments ability to individually increase respondents WTP for SRI. We speculate that this is because the sample size is too small and that only the larger effect of both treatments combined was picked up as significant. Additionally, there are several demographic factors that previous research estimated to be significant where we found indications but no significant correlation. For example, we expected to find gender differences with respect to WTP for SRI, and while

indications were found, they were not significant. We suspect this effect might have been significant with a larger sample.

Education was another demographic factor we expected to get similar results as previous research. Neither the education level “Videregående” nor “Høyere utdanning” were significant, but both additional levels were estimated to have a negative effect on our samples WTP for SRI. This is not in line with previous research which found that SRI investors were likely to have higher education (Escrig-Olmedo et al., 2013; Junkus & Berry, 2010; Nilsson, 2008). With a larger sample size, we might have been able to see if our results showed any interesting findings that conflicted with previous research. However, since the effect was not significant, we cannot conclude anything. Because of a low sample size there were almost no respondents in the lowest education group “Grunnskole”. Our unusual findings may also have been a result of how we measured education by three groups, and that this is not able to pick up the effect previously found. Total years of education may have been a more useful variable. It might also be factors outside of the regression model that correlated with both high education and low WTP for SRI, that are impacting the results.

An important limitation to be aware of with this type of experiment is that all costs and earnings are hypothetical, which make respondents subject to the hypothetical bias. This hypothetical bias is the concept that people in general respond with higher WTP to a hypothetical question than they would in reality where their answers would result in real costs. However, since this bias is present also in the control group, we still have confidence in the direction of the treatment effects.

Another limitation of our study is the possibility of some respondents having incorrectly reported WTP for SRI. The experimental question was formulated as “how much” they were willing to pay for a more sustainable alternative with the other management fee set at 1%. We did this because of our focus on behavioural economics, and if we formulated the question as “how much more” they were willing to pay, we would be implying that they should have a higher WTP for sustainable funds. A negative aspect of our formulation is that it is hard to determine how many of the responses below 1% were meant to reflect a negative WTP for sustainable funds, and how many people who just misunderstood the question.

There are two counteracting effects at play here. People might answer a higher WTP because of the hypothetical bias. On the other hand, the mean WTP might also have been lowered by

some people accidentally responding with a negative WTP for SRI. However, it is hard to speculate about the net effect of this, and again it should not have any impact on the reported treatment differences.

An important aspect to consider is the internal validity of the results. This is important to be able to say anything about the casual effect between the treatments and the WTP for SRI. The respondents in this survey were randomly sampled among Storebrand's customers by Norstat, a professional statistics and polling company. The respondents were also randomly distributed between groups. When reviewing the between group distribution of age, education, gender and income there are no significant differences, the distributions are very similar. In addition, the surveys the respondents replied to, were identical, except form the treatments. However, other factors, like if the respondent took the survey on a cell phone or a computer, might have caused changes in appearance of the survey. This is something that we do not have information on, but we can assume it to be identical across groups due to random assignment of treatment. The causal interpretation of treatments is therefore likely to be valid.

Another important aspect to consider is the external validity of the results. A limitation in this aspect can be that the results are based on the survey with respondents that are customers of Storebrand in Norway. This can cause issues, as their customers do not include people without insurance and/or savings products like funds and stocks. Therefore, the youngest respondent of the survey is 22 years, something that limits the external validity of the results. However, because the experiment concerns investment in funds, which has an age limit of 18 in Norway, this might not be an issue for the external validity. In addition, Storebrand has a higher sustainability focus than many other similar companies, which might result in the sample having a bigger sustainability focus than the average sample of fund customers. Additionally, the Norwegian population might not be similar to other populations with respect to preferences, culture, norms, etc. Another limitation in this aspect, can be the somewhat skewed distribution of the sample. As mentioned earlier, the majority of the sample are men, there are few respondents under the age of 32, a large proportion of the sample has a very high income, and the sample also has extensive education. This means that the results may not be transferable to populations with very low income and education, with a younger sample or with a sample consisting of mostly women. That said, the absence of heterogenous treatment effects speaks in favour of broad external validity.

8.3 Topics for Further Research

With the limitations of this study in mind, there are several interesting topics for further research. Repeating the study with a larger sample should be able to better determine the effects of the treatments, and how they might impact different respondents. The main prediction from having a larger sample would be that the reverse label treatment become significant in its ability to increase positive WTP. Furthermore gender, age, education, and knowledge are expected to have significant effects with a larger sample. Repetition with a new sample is also a good way to determine if the treatments have an effect in a population that are not customers of a sustainably focused company. Also, replicating the study in different countries would be an interesting way to test the transferability of the results.

It would also be interesting to do a similar study in the form of a natural field experiment. Such a natural field experiment would study investors making actual financial decisions. This would solve the limitation provided by hypothetical bias. With such further research one would be able to get a realistic estimation of people's willingness to pay a higher management fee for a sustainable fund alternative. Further research on the topic could also explore different treatments in order to see if there are other ways to increase WTP for SRI. The results from the existing treatments in this dataset could be used as a benchmark to see if other treatments have a larger effect or not.

Another interesting topic for further research could be a focus on investigating the correlation between trust in sustainability ratings and willingness to pay for sustainable funds. There is a concern that the term sustainability has become diluted because of lacking regulations. Therefore, there is a lot of discussion about creating public regulations that specify which criteria must be met to be allowed to label a financial product as sustainable. To our knowledge, research so far has not found any significant correlation between trust and willingness to invest sustainably. This is very counterintuitive and would be an interesting focus for a sustainability study.

9. Conclusion

After discussing the results of the survey, there are some conclusions that can be drawn. The main goal of the experiment was to determine whether a WTP for SRI exist in a population of potential investors. The next priority was to determine whether a reverse label- and moral treatment could increase peoples WTP for SRI.

We found that 34.34% of respondents were willing to pay extra for SRI in the control group. However, this fraction increased to 48.50% when looking at all treatment groups combined. Especially the combination of the reverse label- and moral treatment was effective in increasing WTP for SRI in our sample. The reverse label- and moral treatment seem to strengthen each other, and the estimated combined effect was a 0.44 p.p. increase in WTP for SRI.

Reverse label- and moral treatment both show some indication of effecting respondents WTP for SRI, but they seem to achieve this in different ways. The main effect of the moral treatment seems to be its ability to make people more likely to have a WTP for SRI. On the other hand, the analysis did not show any significance for the reverse label treatment alone, but suggest it affects respondents with a positive WTP to be willing to pay even more.

The demographic factor of having a gross annual income of more than 700,000 NOK had a significant impact on respondents' WTP for SRI. In addition, from the interaction analysis one can also conclude that the treatment effects do not differ between the groups of gender, age, education, income, and knowledge. The treatments can therefore be used on a general population, which is a useful insight for policy makers investigating option to increase the amount invested sustainably. Finding ways to increase sustainable investment is an important part of reaching the UNs sustainable development goals, this thesis has uncovered one such way.

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11. Appendix

11.1 Appendix 1: Complete Survey

Dette er en undersøkelse i forbindelse med en masteroppgave ved Norges Handelshøyskole (NHH) i samarbeid med Storebrand.

Undersøkelsen er beregnet til å ta rundt 5 minutter.

Alle svar er anonyme.

Trykk deg videre for å starte undersøkelsen

—

Powered by QuenchTec

Hva er din alder?

Alder:

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Er du

—

Powered by QuenchTec

Hva er ditt høyeste fullførte utdanningsnivå?

Grunnskole

Videregående

Høyere utdanning



-

Powered by QuenchTec

Omtrent, hva er din personlige brutto årsinntekt (lønn, trygd, pensjon, studielån)?

Under kr 300 000

Kr 300 000 - 399 999

Kr 400 000 - 499 999

Kr 500 000 - 599 999

Kr 600 000 - 699 999

Kr 700 000 - 799 999

Kr 800 000 - 899 999

Kr 900 000 - 999 999

Kr 1 000 000 eller over



-

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Har du selv investert i aksjer eller fond?

Ja

Nei



-

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Har du i dag en regelmessig sparing i aksjer eller fond?

Ja

Nei



-

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Hvor mye kunnskap har du om investering i aksjer og fond?

1
Ingen

2

3

4

5

6

7
Høy



-

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To viktige begrep når det handler om investering i fond er avkastning og forvaltningskostnad:

Avkastning avspeiler hvor mye et fond har vokst i verdi i en gitt tidsperiode. Dette måles typisk som en prosentsats av fondets verdi. Har du for eksempel investert 100 kr i et fond i begynnelsen på året og fondet hadde en årlig avkastning på 8.0%, vil verdien av din investering være 108 kr. Historisk avkastning er ingen garanti for fremtidig avkastning.

Forvaltningskostnad er det fondstilbyderen tar betalt for å forvalte fondet. Dette er en prosentsats av fondets verdi. Har du for eksempel 100 kr i et fond med forvaltningskostnad på 1.0% i året, vil denne kostnaden trekkes fra slik at verdien på fondet er 99 kr ved slutten av året.

Vennligst svar på dette spørsmålet for å vise din forståelse av informasjonen ovenfor.

Du har hatt 100 kr i et fond med 0% avkastning i ett år. Fondets verdi er nå 98 kr, hvor mye er forvaltningskostnaden til fondet?

1.0%

1.5%

2.0%

4.0%



—

Control group (G1):

Tenk deg følgende situasjon der du skal velge mellom to fond:

**De to fondene er "Global" og "Global Bærekraftig".
Begge fondene har hatt en historisk avkastning på 8.0%.
Fondet "Global" har en forvaltningskostnad på 1.0%.**

Hvor mye er DU maksimalt villig til å betale i forvaltningskostnad for "Global Bærekraftig" og fremdeles foretrekke dette fondet fremfor "Global"?

Skriv desimaler med punktum

%

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Reverse label- and moral treatment group (G4):

^a **Ved kjøp av fond som ikke er bærekraftige kan du ende opp med å støtte uakseptable industrier og forretningspraksiser som er skadelig for miljøet eller profiterer på krig og menneskelig lidelse. Dette er fordi forvalteren ikke trenger å ta andre hensyn enn de finansielle.**

Tenk deg følgende situasjon der du skal velge mellom to fond:

^b **De to fondene er "Global Ikke-bærekraftig" og "Global".
Begge fondene har hatt en historisk avkastning på 8.0%.
Fondet "Global Ikke-bærekraftig" har en forvaltningskostnad på 1.0%.**

Hvor mye er DU maksimalt villig til å betale i forvaltningskostnad for "Global" og fremdeles foretrekke dette fondet fremfor "Global Ikke-bærekraftig"?

Skriv desimaler med punktum

%

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^a Moral treatment and ^b reverse label treatment (N.B. footnote not a part of survey)

Med bærekraft mener vi både miljø-, sosiale- og foretningsetiske forhold.

I hvilken grad er bærekraft viktig for deg?

1
Ingen

2

3

4

5

6

7
Høy



—

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I hvilken grad prioriterer du bærekraft i hverdagen din?

1
Ingen

2

3

4

5

6

7
Høy



—

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Hvor stor tillit har du til bærekraftsrangeringer gitt av fondstilbydere?

1
Ingen

2

3

4

5

6

7
Høy



-

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Sammenlignet med bærekraftige investeringer, hvor stor påvirkning tror du det å velge bærekraftige varer i butikken har på miljøet?

Lavere

Lik

Høyere



-

Powered by QuenchTec

Sammenlignet med ikke-bærekraftige fond tror jeg at bærekraftige fond har en avkastning som er...

Lavere

Lik

Høyere



-

Powered by QuenchTec

Sammenlignet med ikke-bærekraftige fond tror jeg at bærekraftige fond har en risiko som er...

Lavere

Lik

Høyere



-

Powered by QuenchTec

Sammenlignet med ikke-bærekraftige fond tror jeg at bærekraftige fond har en avkastning som varierer...

Mindre

Likt

Mer



-

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Tusen takk for at du deltok i undersøkelsen! Denne undersøkelsen er gjennomført på vegne av Storebrand i samarbeid med studenter fra NHH.

Trykk på den grønne knappen for å lagre og avslutte. Ha en fin dag!



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